UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 10-K

☒ **Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

For the fiscal year ended: December 31, 2016

or

☐ **Transition Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

Commission file number: 001-36066

PARATEK PHARMACEUTICALS, INC.

(Exact name of registrant as specified in its charter)

Delaware	**33-0960223**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**

75 Park Plaza
Boston, MA 02116
(617) 807-6600

(Address, including zip code, and telephone number, including area code, of registrant's principal executive office)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	**Name of exchange on which registered**
Common Stock, par value $0.001 per share	**The NASDAQ Global Market**

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐.

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☐	Accelerated filer	☒
Non-accelerated filer	☐ (Do not check if a smaller reporting company)	Smaller reporting company	☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

The aggregate market value of the common stock of the registrant held by non-affiliates of the registrant on June 30, 2016, the last business day of the registrant's second fiscal quarter was: $259,770,210.

As of February 28, 2017 there were 24,286,212 shares of the registrant's common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement for the registrant's 2017 Annual Meeting of Stockholders to be filed pursuant to Regulation 14A within 120 days of the registrant's year ended December 31, 2016 are incorporated herein by reference into Part III of this Annual Report on Form 10-K.

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Special Note Regarding Forward-Looking Statements

This Annual Report on Form 10-K contains forward-looking statements that are based upon current expectations within the meaning of the Private Securities Litigation Reform Act of 1995. Paratek Pharmaceuticals, Inc. intends that such statements be protected by the safe harbor created thereby. Forward-looking statements involve risks and uncertainties and actual results and the timing of events may differ significantly from those results discussed in the forward-looking statements. Examples of such forward-looking statements include, but are not limited to, statements about or relating to:

- The timing, scope and anticipated initiation, enrollment and completion of our ongoing and planned clinical trials and any other future clinical trials that we or our development partners may conduct
- the plans, strategies and objectives of management for future operations
- proposed new products or developments;
- future economic conditions or performance;
- the therapeutic and commercial potential of our product candidates;
- the timing of regulatory discussions and submissions, and the anticipated timing, scope and outcome of related regulatory actions or guidance;
- our ability to establish and maintain potential new collaborative, partnering or other strategic arrangements for the development and commercialization of our product candidates;
- the anticipated progress of our clinical programs, including whether our ongoing clinical trials will achieve clinically relevant results;
- our ability to obtain regulatory approvals of our product candidates and any related restrictions, limitations and/or warnings in the label of an approved product candidate;
- our ability to market, commercialize and achieve market acceptance for our product candidates, if approved;
- our ability to protect our intellectual property and operate our business without infringing upon the intellectual property rights of others;
- our estimates regarding the sufficiency of our cash resources, expenses, capital requirements and needs for additional financing, and our ability to obtain additional financing; and
- our projected financial performance.

In some cases, you can identify forward-looking statements by terms such as “anticipate,” “believe,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “potential,” “predict,” “project,” “should,” “will,” “would” and similar expressions intended to identify forward-looking statements. These statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance, time frames or achievements to be materially different from the information set forth in these forward-looking statements. While we believe that we have a reasonable basis for each forward-looking statement, we caution you that these statements are based on a combination of facts and factors currently known by us and our projections of the future, about which we cannot be certain. We discuss many of these risks in the “Risk Factors” section and elsewhere in this Annual Report on Form 10-K. Given these risks, uncertainties and other factors, you should not place undue reliance on these forward-looking statements. Any of the events anticipated by the forward-looking statements may not occur or, if any of them do, the impact they will have on our business, results of operations and financial condition is uncertain. We hereby qualify all of our forward-looking statements by these cautionary statements.

Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future.

Paratek Pharmaceuticals, Inc. is our registered and unregistered trademark in the United States and other jurisdictions. Intermezzo is a registered and unregistered trademark of Purdue Pharmaceutical Products L.P. and associated companies in the United States and other jurisdictions and is a registered and unregistered trademark of ours in certain other jurisdictions. Other trademarks and trade names referred to in this Annual Report on Form 10-K are the property of their respective owners.

All references to “Paratek,” “we,” “us,” “our” or the “Company” in this Annual Report on Form 10-K mean Paratek Pharmaceuticals, Inc. and its subsidiaries.

PART I

Item 1. Business

Overview

We are a clinical stage biopharmaceutical company focused on the development and commercialization of innovative therapeutics based upon tetracycline chemistry. We have used our expertise in biology and tetracycline chemistry to create chemically diverse and biologically distinct small molecules derived from the minocycline core structure. Our two lead product candidates are the antibacterials omadacycline and sarecycline.

We have generated innovative small molecule therapeutic candidates based upon medicinal chemistry-based modifications, according to structure-based activity, of all positions of the core tetracycline molecule. These efforts have yielded molecules with broad-spectrum antibiotic properties and narrow-spectrum antibiotic properties, and molecules with potent anti-inflammatory properties to fit specific therapeutic applications. This proprietary chemistry platform has produced many compounds that have shown interesting characteristics in various *in vitro* and *in vivo* efficacy models. Omadacycline and sarecycline are examples of molecules that were synthesized from this chemistry discovery platform.

The following table summarizes the primary therapeutic applications for our product candidates:

Omadacycline

Omadacycline is the first in a new class of aminomethylcycline antibiotics. Omadacycline is a broad-spectrum, well-tolerated once-daily oral and intravenous, or IV, antibiotic. We believe that omadacycline has the potential to become the primary antibiotic choice of physicians for use as a broad-spectrum monotherapy antibiotic for acute bacterial skin and skin structure infections, or ABSSSI, community-acquired bacterial pneumonia, or CABP, urinary tract infection, or UTI, and other serious community-acquired bacterial infections, where resistance is of concern. We believe omadacycline, if approved, will be used in the emergency room, hospital and community care settings. We have designed omadacycline to provide potential advantages over existing antibiotics, including activity against resistant bacteria, broad spectrum antibacterial activity, oral and IV formulations with once-daily dosing, no known drug interactions, and a favorable safety and tolerability profile.

In the fall of 2013, the U.S. Food and Drug Administration, or the FDA, agreed to the design of our omadacycline Phase 3 studies for ABSSSI and CABP through the Special Protocol Assessment, or SPA, process. In addition, the FDA confirmed that positive data from the individual studies for ABSSSI and CABP would be sufficient to support approval of omadacycline for each indication and for both oral and IV formulations in the United States. In addition to Qualified Infectious Disease Product, or QIDP, designation, on November 4, 2015, the FDA granted omadacycline Fast Track designation for the development of omadacycline in ABSSSI, CABP, and complicated Urinary Tract Infections, or cUTI. Fast Track designation facilitates the development, and expedites the review of drugs that treat serious or life-threatening conditions and that fills an unmet medical need. In February 2016, we reached

agreement with the FDA on the terms of a pediatric program associated with the Pediatric Research and Equity Act. The FDA has granted Paratek a waiver from conducting studies with omadacycline in children less than eight years old due the risk of teeth discoloration, a known class effects of tetracyclines. In addition, the FDA has granted a deferral on conducting studies in children eight years and older until safety and efficacy is established in adults. In May 2016, we received confirmation from the FDA that the oral-only ABSSSI study design was acceptable and consistent with the currently posted guidance for industry.

Scientific advice received through the centralized procedure in Europe confirmed general agreement on the design and choice of comparators of the Phase 3 trials for ABSSSI and CABP and noted that approval based on a single study in each indication could be possible but would be subject to more stringent statistical standards than Market Authorization Applications, or MAA, programs that conduct two pivotal Phase 3 studies per indication. We believe that the inclusion of the second Phase 3 oral-only study in ABSSSI, if positive, strengthens the data package for submission of an MAA filing for approval in European Union, or EU.

Omadacycline entered Phase 3 clinical development in June 2015 for the treatment of ABSSSI and in November 2015 for the treatment of CABP. Both of these studies utilized initiation of IV therapy with transitions to oral based treatment on clinical response. During the conduct of these studies, an independent data safety monitoring board, or DSMB, completed multiple planned reviews of the safety data. Following each meeting, the DSMB recommended that the studies continue without modification to the protocols or study conduct. In June 2016, we announced positive top-line efficacy and safety data for the ABSSSI study, and we initiated a Phase 3 clinical study with oral-only administration of omadacycline in ABSSSI compared to oral-only linezolid in August 2016. In January 2017, we announced completion of enrollment in the CABP study, and we anticipate top-line results early in the second quarter of 2017. We anticipate top-line results for the oral-only ABSSSI study as early as the late second quarter of 2017

We recently completed several clinical Phase 1 studies with omadacycline. In these Phase 1 studies, omadacycline was generally safe and well-tolerated, consistent with prior Phase 1 studies. In May 2016, we initiated our first oral-only and IV-to-oral study of omadacycline dosed for five days in a Phase 1b clinical study in patients with a UTI. This Phase 1b UTI study was recently completed. Data from this study showed that omadacycline achieved proof of principle, by demonstrating high concentration levels of omadacycline in urine, across IV-to-oral and oral-only dosing regimens.

We have also recently completed clinical Phase 1 studies with omadacycline that are needed for inclusion in the planned New Drug Application, or NDA, regulatory filing with the FDA. These studies include pharmacokinetic, or PK, studies in special populations (end-stage renal disease subjects, or ESRD subjects) and PK-lung penetration studies in healthy volunteers. A recently completed Phase 1 study of ESRD subjects was designed to evaluate the absorption and elimination of omadacycline compared to matched healthy control subjects. Results from this study showed that the absorption and elimination of omadacycline in ESRD subjects appears to be similar to healthy control subjects, suggesting that dose adjustments should not be required in subjects who have severe renal disease. In another recently completed Phase 1 study in healthy volunteers, which was designed to evaluate the PK relationship between human plasma concentrations and lung concentrations, omadacycline demonstrated higher concentration levels in bronchoalveolar lavage, or BAL, lung fluid when compared with plasma concentrations. This result supports the potential utility of omadacycline in the treatment of lower respiratory tract bacterial infections caused by susceptible pathogens. A third Phase 1 study in healthy volunteers has been completed that evaluated the PK exposure profile of three oral-only dosing regimens of omadacycline administered for five days in healthy volunteers. In this Phase 1 study, across three oral dosing regimens of omadacycline, PK plasma levels increased with higher doses of omadacycline, demonstrating dose proportionality. Assuming positive Phase 3 study results, we plan to include and submit these data in an NDA for the treatment of ABSSSI and CABP in the first half of 2018. We also recently completed clinical Phase 1 studies with omadacycline that are needed for inclusion in the planned New Drug Application, or NDA, regulatory filing with the FDA, which are discussed further below.

In October 2016, we announced that we entered into a Cooperative Research and Development Agreement, or CRADA, with the U.S. Army Medical Research Institute of Infectious Diseases, or USAMRIID, to study omadacycline against pathogenic agents causing infectious diseases of public health and biodefense importance. These studies are designed to confirm humanized dosing regimens of omadacycline in order to study the efficacy of omadacycline against biodefense pathogens, including Yersinia pestis, or plague, and Bacillus anthracis, or anthrax. Funding support for the trial has been made available through the Defense Threat Reduction Agency, or DTRA/ Joint Science and Technology Office and Joint Program Executive Office for Chemical and Biological Defense / Joint Project Manager Medical Countermeasure Systems / BioDefense Therapeutics.

Sarecycline

Our second Phase 3 antibacterial product candidate, sarecycline, also known as WC3035, is a new, once-daily, tetracycline-derived compound designed for use in the treatment of acne and rosacea. We believe that, based upon the data generated to-date, sarecycline possesses favorable anti-inflammatory activity, plus narrow-spectrum antibacterial activity relative to other tetracycline-derived molecules, oral bioavailability, does not cross the blood-brain barrier, and favorable PK properties that we believe make it particularly well-suited for the treatment of inflammatory acne in the community setting. We have exclusively licensed U.S.

development and commercialization rights to sarecycline for the treatment of acne to Allergan plc, or Allergan, while retaining development and commercialization rights in the rest of the world. Allergan has informed us that sarecycline entered Phase 3 clinical trials for the treatment of acne vulgaris in December 2014 and anticipates that top-line data from the Phase 3 trial of sarecycline will be available in the first half of 2017. We also granted Allergan an exclusive license to develop and commercialize sarecycline for the treatment of rosacea in the United States, which converted to a non-exclusive license in December 2014 after Allergan did not exercise its development option with respect to rosacea. There are currently no clinical trials with sarecycline in rosacea under way.

Corporate History

Merger of Novacea, Inc. and Transcept Pharmaceuticals, Inc.

We are a Delaware corporation that was incorporated in February 2001 as D-Novo Therapeutics, Inc., which later changed its corporate name to Novacea, Inc., or Novacea. Novacea previously traded on The NASDAQ Global Market under the ticker symbol "NOVC." On January 30, 2009, Novacea completed a business combination with privately-held Transcept Pharmaceuticals, Inc., or Old Transcept, pursuant to which Old Transcept became a wholly-owned subsidiary of Novacea, and the corporate name of Novacea was changed to Transcept Pharmaceuticals, Inc., or Transcept. In connection with the closing of such transaction, Transcept common stock began trading on The NASDAQ Global Market under the ticker symbol "TSPT" on February 3, 2009.

Merger of Transcept Pharmaceuticals, Inc. and Paratek Pharmaceuticals, Inc.

On October 30, 2014, Transcept completed a business combination with privately-held Paratek Pharmaceuticals, Inc., or Old Paratek, in accordance with the terms of the Agreement and Plan of Merger and Reorganization, dated as of June 30, 2014, by and among Transcept, Tigris Merger Sub, Inc., or Merger Sub, Tigris Acquisition Sub, LLC, or Merger LLC, and Old Paratek, or the Merger Agreement, pursuant to which Merger Sub merged with and into Old Paratek, with Old Paratek surviving as a wholly-owned subsidiary of Transcept, followed by the Merger of Old Paratek with and into Merger LLC, with Merger LLC surviving as a wholly-owned subsidiary of Transcept (we refer to these mergers together as the Merger). Immediately following the Merger, Transcept changed its name to "Paratek Pharmaceuticals, Inc.", and Merger LLC changed its name to "Paratek Pharma, LLC." In connection with the closing of the Merger, our common stock began trading on The NASDAQ Global Market under the ticker symbol "PRTK" on October 31, 2014.

The Antibiotics Market and Limitations of Current Therapies

Physicians commonly prescribe antibiotics to treat patients with acute and chronic infectious diseases that are either known, or presumed, to be caused by bacteria. The World Health Organization has identified the development of worldwide resistance to currently available antibacterial agents as being one of the three greatest threats to human health in this decade. In data issued by the Alliance for the Prudent Use of Antibiotics, or APUA, and Cook County Hospital in October 2009 titled "Hospital and Societal Costs of Antimicrobial Resistant Infections in a Chicago Teaching Hospital: Implications for Antibiotic Stewardship," it was estimated that antibiotic-resistant infections cost the U.S. healthcare system in excess of $20.0 billion annually. In addition, these infections result in more than $35.0 billion in societal costs and over eight million additional days spent in the hospital. Historically, the majority of life-threatening infections resulting from antibiotic-resistant bacteria were acquired in the hospital setting. According to two recent reports issued by Decision Resources Group, "Hospital-Treated Infections" published in 2014 and "Community Acquired Bacterial Pneumonia" published in 2012, approximately seven million antibiotic-treated events occur annually in the three combined indications of ABSSSI, UTI, and CABP in U.S. hospitals. Furthermore, research conducted by us suggests that in ABSSSI, there are approximately 1.1 million and 2.4 million patients treated in the U.S hospital and community settings, respectively, who have elevated risk factors (defined as elderly, immuno-compromised, co-morbidity e.g., diabetes, history of treatment failure, recent hospitalization, resident of a nursing home) and who have a known or suspected antibiotic resistant pathogen such as Methicillin-resistant Staphylococcus aureus, or MRSA. In CABP, the same research suggests that there are approximately 460 thousand and 540 thousand patients in the U.S. hospital and community settings, respectively, that have these same elevated risk factors and a known or suspected anti-biotic resistant pathogen such as penicillin-resistant S. pneumonia, or PRSP. The evolving emergence of multi-drug resistant pathogens in the community setting further emphasizes the need for novel agents capable of overcoming antibiotic resistance. IMS Health data issued in 2014 reported that approximately 75 million retail prescriptions for the top five generic broad spectrum oral antibiotics, levofloxacin, co-amoxyclav, azithromycin, ciprofloxacin, and clarithromycin, were written in 2013 in the United States alone, with approximately two-thirds being in respiratory indications. Global sales in 2010 for these five antibiotics ranged from $3.4 billion for levofloxacin, the only one of these agents still under patent protection that year, to $1.4 billion for clarithromycin, and approximately 65% or more of these sales were generated for their oral formulations as a result of step-down therapy or oral use only.

Bacteria are often broadly classified as gram-positive bacteria, including antibiotic-resistant bacteria such as MRSA and multi-drug resistant Streptococcus pneumoniae, or MDR-SP; gram-negative bacteria, including antibiotic-resistant bacteria such as extended-spectrum beta-lactamases, or ESBL, producing *Enterobacteriaceae*; atypical bacteria, including *Chlamydophila pneumoniae* and *Legionella pneumophila*; and anaerobic bacteria, including *Bacteroides* and *Clostridia*. Antibiotics that are active against both

gram-positive and gram-negative bacteria are referred to as "broad spectrum," while antibiotics that are active only against a select subset of gram-positive or gram-negative bacteria are referred to as "narrow spectrum". Today, because many of the currently prescribed antibiotics that have activity against resistant organisms typically are "narrow spectrum," they cannot be used as an empiric monotherapy treatment of serious infections where gram-negative, atypical or anaerobic bacteria may also be involved. Empiric monotherapy refers to the use of a single, antibacterial agent to begin treatment of an infection before the specific pathogen causing the infection has been identified. We believe omadacycline, if approved, will be used in the emergency room, hospital and community care settings. Based on studies published by the Cleveland Clinic Foundation, the National Institutes of Health, or NIH, and American Academy of Family Physicians, rates of infections involving organisms other than gram-positive bacteria have been found to be as much as 15% in ABSSSI, up to 40% in CABP and 70% to 90% in UTI.

When a patient goes to the emergency room or hospital for treatment of a serious infection, the physician's selection of which IV antibiotic to use is often based on the severity of infection, the pathogen(s) believed most likely to be involved and the probability of a resistant pathogen(s) being present. After initial IV therapy and once the infection begins to respond to treatment, hospitals and physicians face strong pressures to discharge patients from the hospital in order to reduce costs, limit hospital-acquired infections and improve the patient's quality of life. In order to transition patients out of the hospital and home to complete the course of therapy, physicians typically prefer to have the option to prescribe a bioequivalent oral formulation of the same antibiotic.

Antibiotics used to treat ABSSSI, CABP, UTI and other serious, community-acquired bacterial infections must satisfy a wide range of criteria on a cost-effective basis. For example, we believe that existing treatment options for ABSSSI, including vancomycin, linezolid, daptomycin and tigecycline; for CABP, including levofloxacin, moxifloxacin, azithromycin, ceftriaxone, ceftaroline and tigecycline; and for UTI, including levofloxacin, ciprofloxacin, and trimethoprim/sulfamethoxazole, have one or more of the following significant limitations:

- *Limited spectrum of antibacterial activity*. Since it may take as long as 48 to 72 hours to identify the pathogen(s) causing an infection and most of the currently available options that cover resistant pathogens are narrow-spectrum treatments, physicians frequently prescribe two or more antibiotics to treat a broad spectrum of potential pathogens. For example, vancomycin, linezolid and daptomycin, the most frequently prescribed treatments for certain serious bacterial skin infections, are narrow-spectrum treatments active only against gram-positive bacteria. The currently available treatment with a more appropriate spectrum for use as a monotherapy against serious and antibiotic-resistant bacterial infections is tigecycline, but it has other significant limitations, most notably dose limiting tolerability of nausea and vomiting
- *Lack of both oral and IV formulations*. The most common treatments for serious bacterial infections, vancomycin, daptomycin, ceftriaxone, piperacillin tazobactam, and tigecycline are only available as injectable or IV formulations. The lack of an effective bioequivalent oral formulation of these and many other commonly prescribed antibiotics requires continued IV therapy, which is inconvenient for the patient and may result in longer hospital stays and greater cost. Alternatively, because of the absence of the same antibiotic in an oral, well-tolerated formulation, physicians may switch the patient to a different orally available antibiotic at the time of hospital discharge. This carries the risk of new side effects and possible treatment failure if the oral antibiotic does not cover the same bacteria that were being effectively treated by the IV antibiotic therapy. While linezolid is a twice-daily IV and oral therapy, it is a narrow-spectrum treatment that is associated with increasing bacterial resistance, side effects from interactions with other therapies and other serious safety concerns.
- *Safety/tolerability concerns and side effects*. Concerns about antibiotic safety and tolerability are among the leading reasons why patients stop treatment and fail therapy. The most commonly used antibiotics, such as vancomycin, linezolid, daptomycin, levofloxacin, moxifloxacin, azithromycin, piperacillin/tazobactam and tigecycline, are associated with safety and tolerability concerns. For example, vancomycin, which requires frequent therapeutic monitoring of blood levels and corresponding dose adjustments, is associated with allergic reactions and can cause kidney damage, loss of balance, loss of hearing, vomiting and nausea in certain patients. Linezolid is associated with bone marrow suppression and loss of vision and should not be taken by patients who are also on many commonly prescribed anti-depressants, such as monoamine oxidase inhibitors and serotonin reuptake inhibitors. Daptomycin has been associated with a reduction of efficacy in patients with moderate renal insufficiency and has a side effect profile that includes muscle damage. Piperacillin/tazobactam is not used in patients with beta-lactam (penicillin) allergy while tigecycline is associated with tolerability concerns because of nausea and vomiting. Levofloxacin and moxifloxacin are associated with tendon rupture and peripheral neuropathy. In July 2016 the FDA approved changes to the labels of fluoroquinolone antibacterial drugs for systemic use (i.e., taken by mouth or by injection), stating "These medicines are associated with disabling and potentially permanent side effects of the tendons, muscles, joints, nerves, and central nervous system that can occur together in the same patient. As a result, the FDA revised the Boxed Warning, FDA's strongest warning, to address these serious safety issues. They also added a new warning and updated other parts of the drug label, including the patient Medication Guide. Additionally, a May 2012 article in the New England Journal of Medicine indicated that a small number of patients treated with azithromycin and quinolones, such as levofloxacin or moxifloxacin, may experience sudden death due to cardiac

arrhythmia, which is often predicted by a prolongation of the corrected QT interval, or QTc. The FDA issued a Drug Safety Communication on March 12, 2013 titled "Azithromycin (Zithromax or Zmax) and the risk of potentially fatal heart rhythms," and the azithromycin drug label warnings were strengthened to address this concern.

- *Increasing bacterial resistance*. Bacterial resistance to the most frequently prescribed antibiotics (branded or generic) has limited their potential to treat infections, which often prevents their use as an empiric monotherapy. We believe that MRSA and MDR-SP, in the community have posed treatment challenges because of resistance to penicillins (resistance rate up to 100% for both), cephalosporins (100% and 11%, respectively, for ceftriaxone), macrolides (83% and 86%, respectively, for erythromycin/azithromycin) and quinolones (73% and 2%, respectively, for levofloxacin), particularly in ABSSSI and CABP. There have also been recent reports of resistance developing during treatment with daptomycin and concerns about an increasing frequency of strains of *Staphylococcus aureus* with reduced susceptibility to vancomycin. Additionally, linezolid use has been associated with drug resistance, including reports of outbreaks of resistance among *Staphylococcus aureus* and *Enterococcus strains*. The increasing occurrence of multi-drug resistant, ESBL-producing, gram-negative bacteria in community-acquired UTIs has severely curtailed the oral antibiotic treatment options available to physicians for these UTIs. For example, in a recent survey, 95% and 76% of the ESBL isolates of *Escherichia coli* found in UTIs, respectively, were resistant to ceftriaxone and levofloxacin.

These limitations can ultimately lead to longer hospital stays, greater healthcare costs and increased morbidity and mortality due to lower cure rates and additional side effects. While certain antibiotics address some of these outcomes, we do not believe there is one superior treatment option that satisfies all outcomes. We believe that it is essential for the treatment of patients with serious, community-acquired bacterial infections that physicians prescribe the right antibiotic the first time, as ineffective antibiotics can quickly lead to progressively more severe and invasive infections or even death.

Our Product Candidates

Omadacycline

- *Bioequivalent Once-daily oral and IV formulations to support transition therapy*. Previous to the two on-going clinical trials, we have studied once-daily IV and oral formulations of omadacycline in approximately 1100 subjects to-date across multiple Phase 1, Phase 2 and Phase 3 clinical trials, and we are using each of these formulations in our Phase 3 clinical trials. The bioequivalence of the IV and oral formulations may permit transition therapy, which could allow patients to start treatment on the IV formulation in the hospital setting then "transition" to the oral formulation of the same bioequivalent antibacterial agent once the infection is responding enabling the patient to be released from the hospital to complete the full course of therapy at home. We believe that transition therapy has the potential to avoid the concerns that can accompany switching from an IV agent to a different class of oral antibiotic and to facilitate the continuance of curative therapy at home. We believe that our SPA agreements with the FDA will permit us to submit for approval of both IV and oral formulations of omadacycline.
- *Broad spectrum of antibacterial activity*. Omadacycline has demonstrated *in vitro* activity against all common pathogens found in ABSSSI, such as *Staphylococcus aureus*, including MRSA, *Streptococci* (including Group A *Streptococci*), anaerobic pathogens and many gram-negative organisms. Omadacycline is also active *in vitro* against the key pathogens found in CABP, such as Streptococcus pneumoniae, including MDR-SP, *Staphylococcus aureus, Haemophilus influenzae* and atypical bacteria, including *Legionella pneumophila*. On the basis of the *in vitro* spectrum of activity demonstrated by omadacycline against a range of pathogens in our pre-clinical testing, we believe omadacycline has the in vitro spectrum of coverage needed to potentially become the primary antibiotic choice of physicians and serve as an empiric monotherapy option for ABSSSI, CABP, UTI and other serious, community-acquired bacterial infections where resistance is of concern, if approved by the FDA.
- *Favorable safety and tolerability profile*. To date, we have observed omadacycline to be generally well tolerated in studies involving approximately 1100 subjects. We have conducted a thorough QTc study, as defined by FDA guidance to assess prolongation of QTc, an indicator of cardiac arrhythmia. This study suggests no prolongation of QTc by omadacycline at three times the therapeutic exposure. There have been observations of a transient, self-limited increase in heart rate, primarily in normal healthy volunteer subjects. These effects appear to be related to peak plasma concentration, or Cmax, and to a specific antagonist effect on the M2 subtype of the muscarinic receptor. These heart rate changes are not accompanied by changes in blood pressure, nor concurrent complaints of palpitations, shortness of breath nor chest pain. There have been no Adverse Events, or AEs, of ventricular arrhythmia, QT prolongation, seizures, syncope, or sudden death in the completed studies. Further, in clinical studies, omadacycline does not appear to adversely affect blood cell production, nor does it appear to metabolize in the liver or anywhere else in the body, thus reducing the likelihood of causing drug-to-drug interactions. Additionally, omadacycline has resulted in low rates of diarrhea, and we have not observed confirmed cases of *Clostridium difficile* infection, which can frequently occur from the use of other classes of broad-spectrum antibiotics such as beta-lactams and quinolones.

- *Designed to overcome bacterial resistance*. We designed omadacycline to overcome the two major mechanisms of tetracycline resistance, known as pump efflux and ribosome protection. This approach was via structure-activity relationship chemistry-based modifications of the seven and nine positions of minocycline. Our attempts to generate resistance to omadacycline in the laboratory suggest a low potential for developing resistance. In addition, our testing of thousands of bacterial samples in the laboratory suggests that omadacycline has not been affected to date by clinically relevant mechanisms of resistance to tetracyclines or to any other class of antibiotics.

In addition to its broad spectrum of antibacterial activity and its availability in once-daily oral and IV formulations, omadacycline appears to penetrate tissues broadly, including lung, muscle, and kidney, thereby achieving high concentrations at the sites of infection. Since omadacycline is eliminated from the body (as unchanged parent compound) via the kidneys and intestine in an expected manner, based on the results of our Phase 1 studies, we believe it may potentially be used in patients with diminished kidney and liver function, without dose adjustment, and may potentially have benefit in patients receiving poly-pharmacy, where drug-drug interactions are of concern. We have completed pre-clinical work evaluating omadacycline for the potential treatment of sinusitis, also known as an acute sinus infection or rhinosinusitis. In addition, we have completed a proof-of-principle study in females with uncomplicated urinary tract infections, or uUTI, given the high percentage of renal elimination and urinary concentrations, omadacycline may have utility as a treatment option for patients with UTI infections.

Completed Omadacycline Clinical Studies

Assuming completion of Paratek's on-going clinical trials on the anticipated time frame, and assuming that Paratek believes the results of the trials will support FDA approval, Paratek intends to file an NDA during the first half of 2018. We have studied omadacycline in 21 Phase 1, one Phase 2, and four Phase 3 studies. These clinical trials are summarized in Table 1. Apart from any loading dose strategies, the proposed dosing regimens for both indications in ABSSSI and CABP will be 100 milligrams, or mg, IV or 300 mg oral doses that have been shown to be bioequivalent. Duration of treatment is expected to be for 7 to 14 days.

At the time of the proposed NDA filing, we anticipate that approximately 1,900 subjects will have been exposed to omadacycline across all clinical studies. Approximately 1,200 of 1,900 subjects will have been exposed to omadacycline during participation in Phase 2 or Phase 3 studies. The number of subjects exposed in the proposed NDA exceeds those required by International Council on Harmonisation, or ICH, E1A guidance of 1,500 exposed subjects and supports the submission, evaluation, and potential approval of the NDAs for up to 14 days of treatment.

Table 1. Subject Exposure to Omadacycline in Clinical Studies

Clinical Study				Number Exposed to Omadacycline				
Phase	Population	Study Number	Exposure Duration (Days) [a]	Total (Any IV or PO)	Any IV	IV ≥ 100 mg/day[b]	Any PO	PO ≥ 300 mg/day[b]
Phase 1	Various – single dose		1	501	211	181	361	177
	Various – multiple dose		4-14	182	94	94	99	90
			Phase 1 Totals	**683**	**305**	**275**	**460**	**267**
Phase 2	cSSSI	702	Up to 14	111	111	111	104c	—
Phase 3 (truncated)	cSSSI	804	Up to 14	68	68	68	63	63
Phase 3 (pivotal)	ABSSSI	1108	7-14	323	323	323	286	286
	ABSSSI[d]	16301	7-14	~352	—	—	352	352
	CABP[d]	1200	7-14	~375	375	375	281	281
			Phase 2 and 3 Totals	**~1,229**	**877**	**877**	**1,086**	**982**
			Overall Totals	**~1,912**	**1,182**	**1,152**	**1,546**	**1,249**

a. Exposure duration as intended per protocol.
b. Daily dose categorization excludes any loading dose strategy in multiple dose studies.
c. Dosing with 200 mg.
d. Exposure numbers for these studies are estimates based on sample size, randomization scheme and (where applicable) anticipated proportion of subjects switching from IV to PO therapy.

Abbreviations: ABSSSI = acute bacterial skin and skin structure infection; CABP = community-acquired bacterial pneumonia; cSSSI = complicated skin and skin structure infections; IV = intravenous; PO = oral.

Pivotal ABSSSI Phase 3 Clinical Study with IV and Oral Omadacycline

Study Design. As part of the development program agreed with FDA, we conducted a randomized (1:1), double blind, active comparator controlled, Phase 3 study comparing omadacycline and linezolid for the treatment of adults with ABSSSI that was known or suspected to be due to a Gram-positive pathogen(s). Subject randomization was stratified across treatment groups by type of infection (wound infection, cellulitis/erysipelas, and major abscess) and geographic region. All subjects were expected to present with ABSSSI severe enough to require a minimum of at least 3 days of IV treatment. The study consisted of 3 phases: Screening, Double Blind Treatment, and Follow Up. All Screening evaluations were performed within 24 hours prior to randomization, except Screening blood cultures, which were collected within 24 hours prior to the first dose of test article. Subjects who met inclusion criteria and did not meet exclusion criteria were randomly assigned to a treatment group, and received their first dose of test article within 4 hours after randomization. The FDA primary outcome measure was Clinical Success at the Early Clinical Response, or ECR, at 48 to 72 hours after the first dose of test article in the modified intent-to-treat, or mITT, population. Clinical Success was defined as; the subject was alive, the size of the primary lesion had been reduced ≥ 20% compared to Screening measurements, without receiving any rescue antibacterial therapy, and the subject did not meet any criteria for clinical failure or indeterminate. Secondary endpoint for FDA and European Medicines Agency, or EMA, co-primary endpoints included investigator assessment of clinical response at post therapy evaluation, or PTE,visit in the mITT and clinically evaluable PTE, or CE-PTE, populations.

Study Efficacy Results. A total of 655 subjects were randomized (the intent to treat, or ITT population), 329 subjects in the omadacycline group and 326 subjects in the linezolid group (See Table 2). There were 10 randomized subjects (6 omadacycline, 4 linezolid) who did not receive test article; thus 98.5% subjects received test article (the safety population). The mITT population included 95.7% subjects because 4.3% subjects had only Gram-negative ABSSSI causative pathogens at Baseline. The micro-mITT population included 69.5% subjects (228 and 227 subjects in the omadacycline and linezolid groups, respectively), which included subjects with a Gram-positive pathogen alone or in combination with other pathogens. Overall, 80.8% subjects were included in the CE-PTE population.

Table 2. Analysis Populations

Population/Parameter	Omadacycline n (%)	Linezolid n (%)	All Subjects n (%)
ITT population			
Number included in population	329	326	655
Safety population			
Number included in population	323 (98.2)	322 (98.8)	645 (98.5)
Number excluded from population	6 (1.8)	4 (1.2)	10 (1.5)
mITT population			
Number included in population	316 (96.0)	311 (95.4)	627 (95.7)
Number excluded from population	13 (4.0)	15 (4.6)	28 (4.3)
micro-mITT population			
Number included in population	228 (69.3)	227 (69.6)	455 (69.5)
Number excluded from population	101 (30.7)	99 (30.4)	200 (30.5)
CE-PTE population			
Number included in population	269 (81.8)	260 (79.8)	529 (80.8)
Number excluded from population	60 (18.2)	66 (20.2)	126 (19.2)

Percentages were based on the ITT population.
ABSSSI = acute bacterial skin and skin structure infection; CE = clinically evaluable; ITT = intent-to-treat; mITT = modified intent-to-treat; micro-mITT = microbiological modified intent-to-treat; PTE = Post Therapy Evaluation.

Table 3 summarizes ABSSSI lesion area size and other baseline characteristics for the mITT population. In both groups the baseline lesion sizes were similar (median 299.5 cm^2 for omadacycline and 315.0 cm^2 for linezolid) and well above the inclusion criteria minimum of 75 cm^2.

Table 3. Lesion Area Size (mITT Population)

Characteristics	Omadacycline (N = 316) n (%)	Linezolid (N = 311) n (%)	p-value
Calculated lesion area (cm²)			
n	316	311	
Mean (SD)	454.77 (442.879)	498.34 (616.987)	
Median	299.50	315.00	
Min, max	77.0, 4100.0	88.0, 6739.2	0.562

P-values for differences between treatment groups were from Fisher's exact test (for categorical variables) or Wilcoxon Rank Sum test (for continuous variables).
max = maximum; min = minimum; mITT = modified intent-to-treat; SD = standard deviation

Table 4 summarizes the primary ABSSSI infection type in the mITT population. Randomization was stratified by type of infection and the number of subjects with major abscess was limited to no more than 30% of randomized subjects. The type of primary infections including cellulitis/erysipelas (38.9% omadacycline, 37.9% linezolid), wound infection (32.3% omadacycline, 33.4% linezolid), and major abscess (28.8% omadacycline, 28.6% linezolid) were comparable between treatment groups.

Table 4. Primary ABSSSI Infection Site at Baseline (mITT Population)

Characteristics	Omadacycline (N = 316) n (%)	Linezolid (N = 311) n (%)
Type of primary infection	316	311
Cellulitis/erysipelas	123 (38.9)	118 (37.9)
Wound infection	102 (32.3)	104 (33.4)
Major abscess	91 (28.8)	89 (28.6)

Percentages were based on the number of subjects with the specific parameter assessed.
ABSSSI = acute bacterial skin and skin structure infection; mITT = modified intent-to-treat.

The primary outcome measure for FDA was ECR at 48 to 72 hours (defined as 48 hours to < 73 hours) after the first dose of test article in the mITT population. A summary is provided in Table 5. Omadacycline was found to be non-inferior to linezolid for ECR in the mITT population. Clinical success rates were high (84.8% omadacycline, 85.5% linezolid) and comparable between both treatment groups (difference [95% CI]: -0.7 [-6.3, 4.9]). Given that the lower limit of the 95% confidence interval, or CI for the treatment difference (omadacycline – linezolid) was within the 10% margin, therefore omadacycline was considered non-inferior to linezolid. The percentages of subjects assessed as either clinical failure or indeterminate were similar between treatment groups. Reasons for clinical failure at 48 to 72 hours included lack of reduction in lesion size by at least 20% (5.1% omadacycline, 4.5% linezolid), AE requiring discontinuation of test article (1.6% omadacycline, 0.6% linezolid), discontinuation of test article with need for rescue antibacterial therapy (1.3% in both groups), and receipt of potentially effective systemic antibacterial therapy for a different infection than the ABSSSI under study (0.6% omadacycline, 0% linezolid).

Table 5. ECR 48-72 Hours after the First Infusion of the Test Article (mITT Population)

Efficacy Outcome	Omadacycline N = 316 n (%)	Linezolid N = 311 n (%)	Difference (95% CI)
Clinical success	268 (84.8)	266 (85.5)	-0.7 (-6.3, 4.9)
Clinical failure or indeterminate	48 (15.2)	45 (14.5)	—
Clinical failure	23 (7.3)	19 (6.1)	—
Indeterminate	25 (7.9)	26 (8.4)	—

Difference was observed difference in early clinical success rate between the omadacycline and linezolid groups.
95% CI was constructed based on the Miettinen and Nurminen method without stratification.
Percentages were based on the number of subjects in each treatment group.
CI = confidence interval; ECR = Early Clinical Response; mITT = modified intent-to-treat.

The number and percentage of subjects classified as clinical success by the investigator's assessment at PTE in the mITT, and CE-PTE populations calculated for each treatment group is summarized in Table 6. Clinical success rates were high and similar between the treatment groups at PTE, meeting statistical non-inferiority. In the mITT population, clinical success at PTE was 86.1% for omadacycline and 83.6% for linezolid. Reasons for clinical failure at the PTE visit for the mITT population included clinical

failure at the End of Treatment, or EOT, visit (4.7% omadacycline, 5.8% linezolid), discontinuation of test article with need for rescue antibacterial therapy (3.2% for both groups), and receipt of potentially effective systemic antibacterial therapy for a different infection than the ABSSSI under study (1.9% omadacycline, 1.6% linezolid). Clinical success rates were also high and similar between treatment groups in the CE population.

Table 6. Overall Clinical Response at PTE Visit Based on Investigator Assessments (mITT, and CE-PTE,)

Efficacy Outcome	Omadacycline n (%)	Linezolid n (%)	Difference	95% CI Without Stratification[a]	95% CI With Stratification[b]
mITT	(N = 316)	(N = 311)			
Clinical success	272 (86.1)	260 (83.6)	2.5	(-3.2, 8.2)	(-3.2, 8.1)
CE-PTE	(N = 269)	(N = 260)			
Clinical success	259 (96.3)	243 (93.5)	2.8	(-1.0, 6.9)	(-0.9, 7.1)

Difference was observed difference in overall clinical success rate at PTE between the omadacycline and linezolid groups.
Overall clinical response at PTE was based on the investigator assessment at the EOT and PTE visits.
Percentages were based on the number of subjects in each treatment group.
CE = clinically evaluable; CI = confidence interval; mITT = modified intent-to-treat; PTE = Post Therapy Evaluation.

a 95% CI was constructed based on the Miettinen and Nurminen method without stratification.

b 95% CI was adjusted for type of infection and geographic region based on the Miettinen and Nurminen method with stratification, using Cochran-Mantel-Haenszel weights as stratum weights. The 4 geographic regions were combined into 1 group. Infection type was not combined.

Study Safety Results. As seen in Table 7, overall, 48.3% of omadacycline subjects and 45.7% of linezolid subjects had at least 1 Treatment-emergent Adverse Event, or TEAE. The most commonly reported TEAEs (≥ 5%) were nausea (12.4% omadacycline, 9.9% linezolid), infusion site extravasation (8.7% omadacycline, 5.9% linezolid), subcutaneous abscess (5.3% omadacycline, 5.9% linezolid), and vomiting (5.3% omadacycline, 5.0% linezolid). A total of 19 subjects (11 omadacycline, 8 linezolid) had serious TEAEs. No subjects experienced a drug-related serious TEAE. A total of 13 subjects (6 omadacycline, 7 linezolid) had a TEAE that led to premature discontinuation of test article. The frequency of drug related TEAEs was comparable between the 2 treatment groups (18.0% omadacycline, 18.3%, linezolid). The most commonly reported drug-related TEAEs (≥ 2% for any group) were nausea (9.6% omadacycline, 6.5% linezolid), vomiting (4.0% omadacycline, 2.8% linezolid), alanine aminotransferase, or ALT, increased (2.5% omadacycline, 2.8% linezolid), diarrhea (2.2% omadacycline, 2.2% linezolid), and aspartate aminotransferase, or AST, increased (1.9% omadacycline, 2.5% linezolid).

Table 7. Number (%) of Subjects with the Most Frequent TEAEs (≥ 3% for Any Group)

Body System	Omadacycline N = 323 n (%)	Linezolid N = 322 n (%)
Subjects with at least 1 TEAE	156 (48.3)	147 (45.7)
Nausea	40 (12.4)	32 (9.9)
Vomiting	17 (5.3)	16 (5.0)
Diarrhea	7 (2.2)	10 (3.1)
Subcutaneous abscess	17 (5.3)	19 (5.9)
Cellulitis	15 (4.6)	15 (4.7)
Infusion site extravasation	28 (8.7)	19 (5.9)
ALT increased	9 (2.8)	14 (4.3)
AST increased	8 (2.5)	12 (3.7)
Headache	10 (3.1)	13 (4.0)

Coding of SOCs and PTs were based on MedDRA Version 17.1.
Percentages were based on the safety population.
A TEAE was defined as an AE occurring after first dose of active test article.
A subject with multiple occurrences of an AE under 1 treatment was counted only once in the AE category for that treatment.
AE = adverse event; ALT = alanine aminotransferase; AST = aspartate aminotransferase; TEAE = treatment-emergent adverse event.

Overall, the TEAEs ALT increased (2.8% omadacycline, 4.3% linezolid) and AST increased (2.5% omadacycline, 3.7% linezolid) occurred at a higher percentage in the linezolid group compared to the omadacycline group. Treatment releated TEAEs of ALT increased occurred in 2.5% omadacycline subjects and 2.8% linezolid subjects. Treatment-related TEAEs of AST increased occurred in 1.9% omadacycline subjects and 2.5% linezolid subjects. All such TEAEs were considered mild or moderate in severity and no AE resulted in discontinuation of test article.

Other TEAEs of potential interest regarding liver chemistry values showed comparable incidence between treatment groups and included blood bilirubin increased (0.9% omadacycline subjects, 0.3% linezolid subjects), gamma glutamyl transferase, or GGT, increased (0.6% subjects in each treatment group), and blood alkaline phosphatase increased (0.3% subjects in each treatment group). Table 8 shows the ALT, AST and Bilirubin outliers, which appear to similar between omadacycline and linezolid. No Hy's law cases occurred in this study on either omadacycline nor linezolid.

Table 8. ALT, AST, Bilirubin Outlying Values (Safety Population)

Lab Parameter (SI unit)	Parameter	Omadacycline N = 323 n (%)	Linezolid N = 322 n (%)
ALT (U/L)			
Normal at Baseline, n		246	256
Worst post-baseline value, n		240	251
	> 3 × ULN	3 (1.3)	5 (2.0)
	> 5 × ULN	3 (1.3)	2 (0.8)
	> 10 × ULN	1 (0.4)	1 (0.4)
AST (U/L)			
Normal at Baseline, n		269	289
Worst post-baseline value, n		263	281
	> 3 × ULN	3 (1.1)	6 (2.1)
	> 5 × ULN	2 (0.8)	3 (1.1)
	> 10 × ULN	—	—
Total Bilirubin (µmol/L)			
Normal at Baseline, n		302	304
Worst post-baseline value, n		296	296
	> 1.5 × ULN	2 (0.7)	1 (0.3)
	> 2 × ULN	1 (0.3)	1 (0.3)

Baseline was defined as the value closest to but prior to the initiation of test article administration.
Percentages were based on number of subjects with a normal level at Baseline and had an assessment at that visit.
Local lab results were used when central lab assessments were not available.
ALT = alanine aminotransferase; AST = aspartate aminotransferase; EOT = End of Treatment; PTE = Post Therapy Evaluation; ULN = upper limit normal.

Table 9 summarizes the protocol-specified Clinically Notable, or CN, values for HR, systolic blood pressure, or systolic BP, and diastolic blood pressure, or diastolic BP, at any post-Baseline time point. Across all of these analysis criteria, there were only minor differences between the treatment groups. Only 11 subjects (5 omadacycline, 6 linezolid) had a HR ≥ 120 bpm at any post-Baseline time point.

Table 9. CN Values for HR, Systolic BP, and Diastolic BP at Any Post-baseline Time Point (Safety Population)

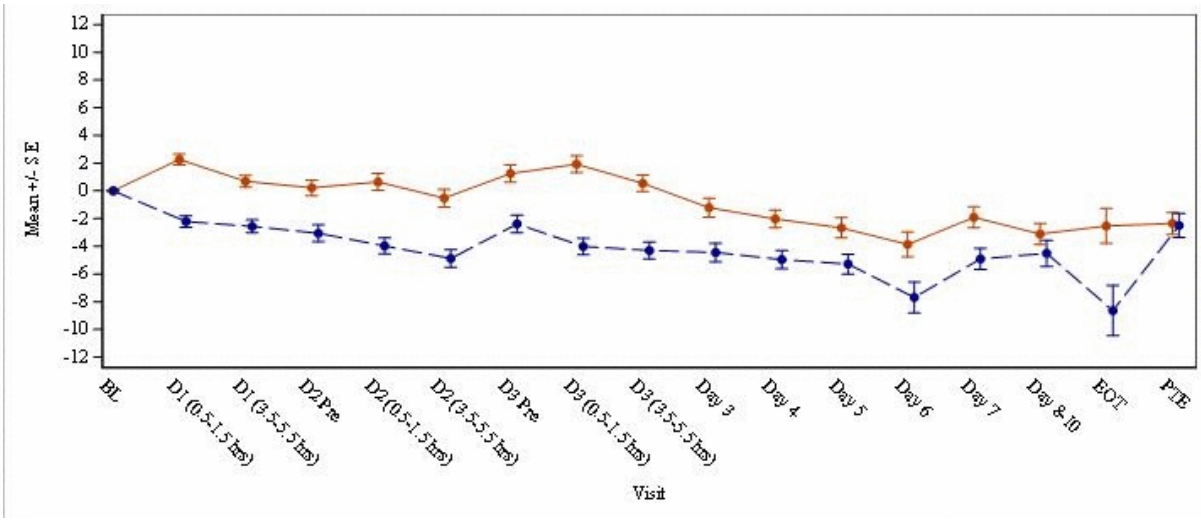
CN Criteria	Omadacycline (N = 323) n (%)	Linezolid (N = 322) n (%)
Subjects with HR value at any post-Baseline visit		
HR ≤ 50 bpm	3 (0.9)	10 (3.1)
HR ≥ 120 bpm	5 (1.5)	6 (1.9)
Subjects with HR value at Baseline and any post-Baseline visit		
HR ≤ 50 bpm and decrease of ≥ 15 bpm	2 (0.6)	5 (1.6)
HR ≥ 120 bpm and increase of ≥ 15 bpm	5 (1.5)	6 (1.9)
Subjects with systolic BP value at any post-Baseline visit		
Systolic BP ≤ 90 mmHg	13 (4.0)	9 (2.8)
Systolic BP ≥ 180 mmHg	5 (1.5)	12 (3.7)
Subjects with systolic BP value at Baseline and any post-Baseline visit		
Systolic BP ≥ 180 mmHg and increase of ≥ 20 mmHg	4 (1.2)	11 (3.4)
Systolic BP ≤ 90 mmHg and decrease of ≥ 20 mmHg	8 (2.5)	4 (1.2)
Subjects with diastolic BP value at any post-Baseline visit		
Diastolic BP ≤ 50 mmHg	29 (9.0)	24 (7.5)
Diastolic BP ≥ 105 mmHg	8 (2.5)	12 (3.7)
Subjects with diastolic BP value at Baseline and any post-Baseline visit		
Diastolic BP ≥ 105 mmHg and increase of ≥ 15 mmHg	6 (1.9)	9 (2.8)
Diastolic BP ≤ 50 mmHg and decrease of ≥ 15 mmHg	13 (4.0)	17 (5.3)

Baseline was defined as the value closest to but prior to the initiation of test article administration.
Percentages were based on the number of subjects with the specific parameter assessed.
BP = blood pressure; bpm = beats per minute; CN = clinically notable; HR = heart rate.

Figure F-1 presents the mean values over time for HR, shown as change from Baseline. Because the decline in HR generally was more rapid for the linezolid subjects compared to omadacycline subjects, at any given post-Baseline time point, the mean HR in omadacycline subjects was slightly higher than linezolid subjects (difference of < 5 bpm at all time points).

Of note, during the study, sinus tachycardia was reported as a TEAE in only 1 omadacycline subject (mild severity and not related to test article) and no linezolid subjects. No subjects in either group reported palpitations.

Figure F-1. Change from Baseline HR (bpm) Mean Results Over Time (Safety Population)



The EOT visits were summarized with the study day of the visit up to Day 10. The EOT values on Day 2 were summarized under Day 2 Pre.
BL = Baseline; bpm = beats per minute; D = Day; LZD = linezolid; OMC = omadacycline; SE = standard error.

Study Conclusions. Overall, the efficacy of omadacycline was comparable to linezolid in the treatment of adults with ABSSSI and omadacycline was determined to be non-inferior to linezolid (based on a predefined 10% non-inferiority margin) for the FDA and EMA primary endpoints. In addition, both omadacycline and linezolid were found to be safe and well tolerated.

Early Terminated (truncated) cSSSI Phase 3 Clinical Study

Study Design. We designed our Phase 3 clinical trial pursuant to the then-current 1998 FDA guidance on developing antimicrobial drugs for the treatment of complicated skin and skin structure infections, or cSSSI. The primary objective of the clinical trial was to establish that omadacycline as a monotherapy was not inferior to linezolid, with or without moxifloxacin, as a treatment for patients with serious skin infections. Following randomization, patients initially received either IV therapy with 100 mg of omadacycline every 24 hours with the ability to switch to 300mg of oral omadacycline, or 600 mg of linezolid every 12 hours, with the ability to switch to 600mg oral linezolid. For patients with infections suspected or documented as involving gram-negative bacteria, the blinded physician had the option of providing additional antibiotic therapy to patients, with patients assigned to the linezolid arm receiving 400 mg of moxifloxacin every 24 hours and patients assigned to omadacycline receiving a placebo, since omadacycline has activity against some of the most common gram-negative bacteria that commonly cause these infections, to match the dosing regimen of linezolid-treated patients. This study had 143 subjects randomized, 140 patients received at least one dose of study drug. Of those 140 subjects, 68 were randomized to omadacycline and 72 were randomized to linezolid. Cellulitis was present in 92 of the 140 patients who received at least one dose of study drug. Although we terminated this trial before reaching its enrollment goal due to the evolving regulatory landscape, and therefore precluding any statistical conclusions with regard to non-inferiority, the overall clinical success rates were similar between omadacycline- and linezolid. The overall incidence of adverse events was similar in both treatment groups. There were no clinically significant alterations of cardiovascular, renal or hepatic safety laboratory values. One death occurred in a patient randomized to omadacycline who presented with undiagnosed metastatic lung cancer after being assessed as cured following the test of care, or TOC, visit. Study investigators did not consider any of the serious adverse events reported to be related to either omadacycline or linezolid.

cSSSI Phase 2 Clinical Study

We designed, conducted and completed a randomized Phase 2 clinical trial with the primary objective of comparing the safety and tolerability of omadacycline to linezolid in patients with cSSSI. Our key secondary objectives involved comparing the efficacy of omadacycline to linezolid and assessing the PK properties of omadacycline.

Following randomization, patients initially received IV therapy with 100 mg of omadacycline every 24 hours, or 600 mg of linezolid every 12 hours. For patients with infections suspected or documented as involving gram-negative bacteria, the blinded physician had the option of providing additional IV antibiotic therapy to patients, with patients assigned to the linezolid group also

receiving two grams of aztreonam every 12 hours, and patients assigned to the omadacycline group receiving a placebo to match the dosing regimen of linezolid-treated patients. Based on a blinded physician's assessment of the appropriateness of hospital discharge and continuation of oral therapy, most patients then transitioned to oral therapy. For oral therapy, patients randomized to omadacycline received 200 mg of omadacycline (dosed as two 100 mg capsules) every 24 hours. Patients randomized to linezolid received one 600 mg tablet of linezolid every 12 hours. Patients in both groups received an average of five to six days of oral therapy following an average of 4.3 days of IV therapy. 219 patients received at least one dose of the study drug in our Phase 2 clinical trial, 111 patients were randomly selected to be treated with omadacycline and 108 were randomly selected to be treated with linezolid. Clinical response was measured in two study populations, ITT and clinically evaluable, or CE. The ITT population in this clinical trial refers to all enrolled subjects who received at least one dose of study drug, and the CE population refers to all ITT subjects who had a qualifying infection and were treated and evaluated as defined in the protocol. Although not powered to demonstrate statistical non-inferiority, results from this Phase 2 study demonstrated that the efficacy of omadacycline was comparable to linezolid for both the ITT and CE populations. The observed safety results of the study among the 111 omadacycline-treated patients, 46 (41.4%) experienced one or more TEAEs and 24 (21.6%) experienced one or more adverse events assessed as potentially treatment-related. By comparison, among the 108 linezolid-treated patients, 55 (50.9%) experienced one or more TEAEs and 33 (30.6%) experienced adverse events assessed as potentially treatment-related. In both arms of the clinical trial, the most frequently involved organ system was the gastrointestinal tract, with adverse events reported in 21 (18.9%) omadacycline-treated patients and 18 (16.7%) linezolid-treated patients. There were three serious adverse events reported in this clinical trial, one in an omadacycline-treated patient and two in linezolid-treated patients. The study investigator considered the event in the omadacycline-treated patient, which involved worsening confusion, to be unrelated to the study therapy. There were no significant alterations of cardiovascular, renal or hepatic safety laboratory values.

Phase 1 Clinical Studies

We assessed omadacycline in over 20 single-dosing and multiple-dosing Phase 1 clinical trials for both the IV and oral formulations, involving more than 600 healthy volunteer subjects.

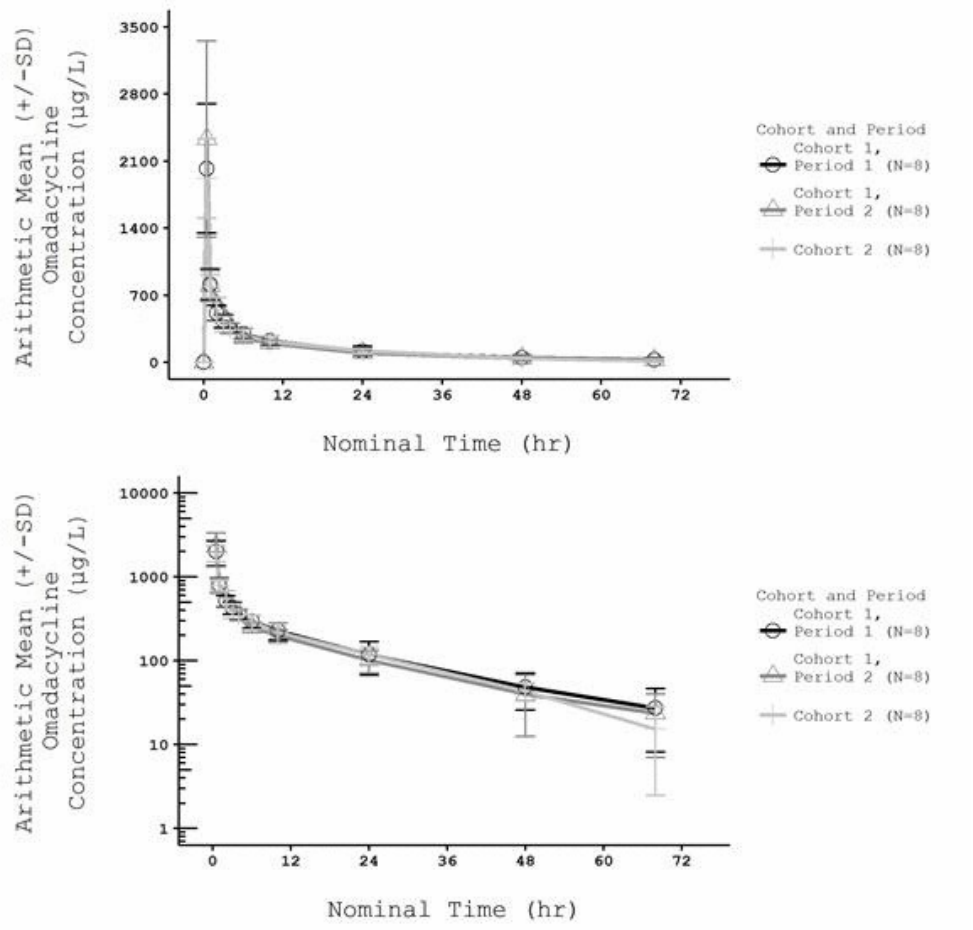
We have also recently completed clinical Phase 1 studies with omadacycline that are needed for inclusion in the planned NDA regulatory filing with the FDA. These studies include PK, studies in special populations (ESRD subjects) and PK-lung penetration studies in healthy volunteers. In addition, we conducted a Phase 1b study in female patients with cystitis (uUTI) to evaluate the PK in plasma and urine to demonstrate the proof of principal of omadacycline at a potential treatment in UTI.

Phase 1 Clinical Study in End-Stage Renal Disease patients, and Matched Controls:

Study Design. This study was designed as an open-label, single-dose, two-period, parallel group study to compare the PK and safety of single IV doses of omadacycline in adult subjects with ESRD on a stable hemodialysis regimen and healthy adult subjects. Healthy adult subjects were matched to adult subjects with ESRD based on gender, age (± 5 years), and weight (± 10 kg). Subjects were screened for enrollment into the study within 28 days (Days -28 to -2) prior to administration of omadacycline on Day 1 of Period 1. Those who met eligibility criteria at screening were admitted to the clinical research unit on Day -1 for baseline assessments. Subjects were enrolled into the following two treatment groups: ESRD subjects on stable hemodialysis (n=8) received a single dose of omadacycline 100 mg IV infusion post-dialysis; after a washout period of 10 to 20 days they received an additional dose of omadacycline 100 mg IV infusion pre-dialysis and matched healthy subjects (n=8) received a single dose of omadacycline 100 mg IV infusion. Blood samples were collected for determination of plasma test article concentrations at specified times up to 68 hours after dose administration. Healthy subjects had PK urine samples collected at specified times up to 72 hours post dose. Dialysate samples were collected from ESRD subjects at specified times during Period Two. Approximately one week (± 3 days) after the last test article administration, subjects underwent study completion evaluations and were discharged from the study. Safety assessments included physical examinations, electrocardiograms, or ECGs, vital signs, standard clinical laboratory evaluations (hematology, chemistry, urinalysis [healthy subjects]), pregnancy assessments, and AE monitoring.

Study PK Results. A total of 16 subjects were enrolled in the study (8 assigned to each cohort) and all subjects completed the study. All subjects were included in both the Safety Population and the PK Population. Mean plasma concentration-time profiles of omadacycline following single IV doses of 100 mg are presented in Figure F-2.

Figure F-2 Arithmetic Mean (+/-SD) Plasma Omadacycline Concentration vs Time Plots Overlaid by Cohort and Treatment Period (PK Population) (Linear and Semi-log) (N = 8 per cohort)



Following a single IV dose of 100 mg in ESRD subjects and healthy subjects, plasma omadacycline concentration time profiles declined in a biphasic manner. The mean plasma omadacycline concentration time profiles were visually superimposable in the ESRD subjects (Period 1 and 2) and healthy control subjects. The profiles indicate that omadacycline exposure was similar between the subjects with ESRD (dosed after or prior to hemodialysis) and matched healthy control subjects. During dialysis in ESRD subjects, the mean percentage of the omadacycline cleared by hemodialysis compared to the total clearance of omadacycline was 47.8%. However, due to its low total systemic clearance (10.1 to 10.6 L/h) and large volume of distribution (194 to 214 L), the actual percent of the omadacycline dose in the dialysate during dialysis was only 7.89% (7.89 mg). The results indicate that renal impairment did not have an impact on the overall extent of exposure (AUC0-last and AUC0-inf) and total clearance, or CL, and a relatively small effect on the Cmax comparison.

Study Safety Results. Overall, 5 of 16 subjects (31.3%) experienced a total of 8 TEAEs during the study. The TEAEs included upper respiratory infection (2), viral upper respiration infection, dizziness, headache, infusion site erythema, bronchospasm, and rash papular. One additional subject had an AE of injection site hematoma that was not treatment emergent. The bronchospasm and one of the upper respiratory infections were moderate in severity, all others were mild in severity. Only the dizziness and rash were considered related to the study drug. There were no Serious Adverse Events, or SAEs, or deaths reported. No subjects withdrew from the study due to an AE.

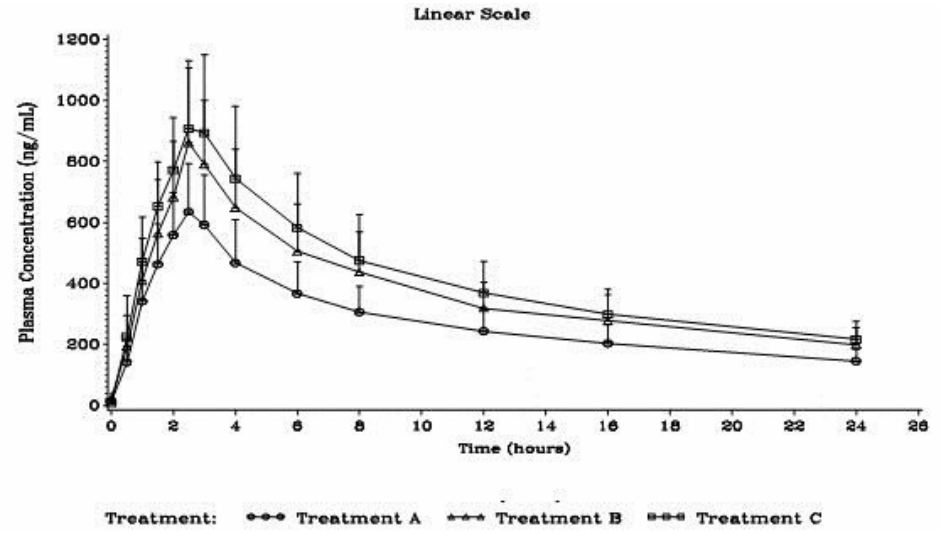
Study Conclusions. The results indicate that renal impairment did not have an effect on the overall extent of exposure (AUC0-last and AUC0-inf) nor on its CL Vd or t1/2. The effect on Cmax was considered small and not clinically relevant. The mean t1/2 following IV administration of 100 mg of omadacycline ranged from 17.1 to 18.9 hours across the cohorts and periods. The mean CL ranged from 10.1 to 10.6 L/h. Despite 27% of dose being eliminated in urine of healthy subjects, a similar overall CL was observed between ESRD subjects and healthy subjects. Hemodialysis had little to no effect on exposure. No dose adjustment is required for ESRD subjects relative to healthy subjects. No dose adjustment is required for ESRD subjects on days receiving hemodialysis. Single, IV injections of 100 mg omadacycline were safe and well tolerated in normal healthy volunteers and in ESRD subjects.

Phase 1 Clinical Study Multiple Dose Administration of Oral Tablets of Omadacycline (MDPO):

Study Design. The primary objective of the study was to assess and compare the pharmacokinetics of 300, 450, and 600 mg doses of oral omadacycline administered daily over five days. The secondary objective of the study was to evaluate the safety and tolerability of multiple doses of omadacycline in healthy adult subjects. This was a Phase 1, randomized, double-blind, 3-period, crossover study in healthy adult subjects. The study consisted of a screening period (Day −21 through Day −2), 3 baseline periods (Day −1 of each period), 3 treatment periods (Day 1 through Day 6 of each period), and a study completion visit (within six to 10 days after the last dose of study drug in Period 3). There was a washout of at least 5 days between the last dose in 1 period and the first dose in the next period. On Day 1 through Day 5 of each period, subjects received, after a fast of 6 hours, one of the following treatments according to the randomization schedule: A. 300 mg omadacycline (2 × 150 mg tablets) or placebo for 300 mg omadacycline (2 × placebo tablets); B. 450 mg omadacycline (3 × 150 mg tablets) or placebo for 450 mg omadacycline (3 × placebo tablets); C. 600 mg omadacycline (4 × 150 mg tablets) or placebo for 600 mg omadacycline (4 × placebo tablets).

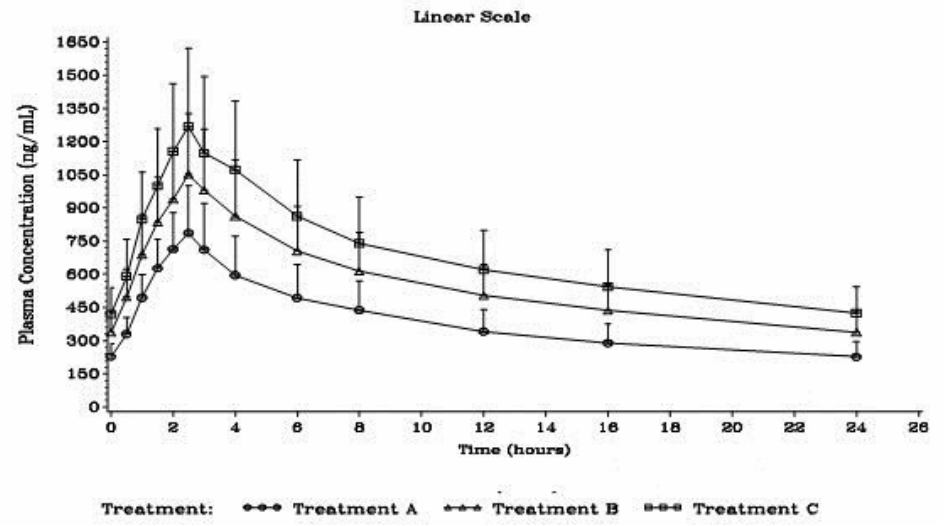
Study PK Results. A total of 30 subjects were planned, and 33 subjects were enrolled in the study. In total, 28 subjects (84.8%) completed the study and 5 subjects (15.2%) discontinued from the study. All 33 subjects (100.0%) were included in the safety population, of which, 25 omadacycline treated subjects (96.2%) were included in the PK population. Mean (+ SD) plasma concentrations of omadacycline versus time by dose group for Day 1 and Day 5 are presented in Figures F-3 and F-4, respectively.

Figure F-3 Mean (+ SD) Plasma Concentrations of Omadacycline Versus Time by Dose Group - Day 1 (Pharmacokinetic Population)



Abbreviations = PK, pharmacokinetic; SD = standard deviation
Treatment A: 300 mg omadacycline (2 × 150-mg tablets)
Treatment B: 450 mg omadacycline (3 × 150-mg tablets)
Treatment C: 600 mg omadacycline (4 × 150-mg tablets)

Figure F-4 Mean (+ SD) Plasma Concentrations of Omadacycline Versus Time by Dose Group - Day 5 (Pharmacokinetic Population)



Abbreviations: PK = pharmacokinetic; SD = standard deviation
Treatment A: 300 mg omadacycline (2 × 150-mg tablets); Treatment B: 450 mg omadacycline (3 × 150-mg tablets); Treatment C: 600 mg omadacycline (4 × 150-mg tablets)

Study Safety Results. TEAEs were reported by 10 of 26 (38.5%) omadacycline-treated subjects and 2 of 7 (28.6%) placebo-treated subjects. The TEAEs were mild in 7 of 10 omadacycline treated subjects and 1 of 2 placebo-treated subjects. The remaining subjects with TEAEs had at least 1 moderate TEAE; there were no severe TEAEs reported. Three omadacycline-treated subjects (11.5%) and 1 placebo-treated subject (14.3%) discontinued from the study due to TEAEs. There were no clinically meaningful changes over time or differences between groups in hematology or urinalysis parameters. Serum chemistry results were notable only for a small dose-dependent increase in median ALT values. Between baseline and Day 5 of each omadacycline dosing period, the median change in ALT was −2.0 IU/L for 300 mg, +5.0 IU/L for 450 mg, and +19.5 IU/L for 600 mg. The corresponding changes for the placebo groups ranged from −5.0 to −1.0 IU/L. There were no clinically meaningful changes in median AST, bilirubin, alkaline phosphatase, or other chemistry parameters.

Study Conclusions. Omadacycline exposure increased with increases in once-daily oral dosing from 300 mg to 600 mg. Across this dose range, the increase in omadacycline exposure (based on AUC) on Day 5 was approximately 88% of that predicted if exposure were perfectly dose proportional. Statistical analyses showed that both AUC and Cmax exhibited less than dose proportional increases over this dose range. Based on AUC, omadacycline total exposure on Day 5 was approximately 1.4- to 1.6-fold the total exposure observed on Day 1. Single oral doses of 300, 450, and 600 mg omadacycline were generally well tolerated by healthy adult subjects in the current study. There were no deaths, SAEs or severe TEAEs reported. Four subjects discontinued from the study due to TEAEs: 1 subject in each of the 3 omadacycline dose groups and 1 subject in the placebo group. There were no clinically significant findings in vital sign measurements, physical examination findings, and 12-lead ECG results for this study. Laboratory analyses identified a small median increase in ALT values, particularly for the omadacycline 600 mg group. Three subjects had out-of-range serum chemistry values (ALT, AST, amylase, and/or lipase) that were considered clinically significant and reported as TEAEs during the study.

Phase 1 Clinical Study Multiple Dose Administration of IV omadacycline Lung Concentration Study (BAL):

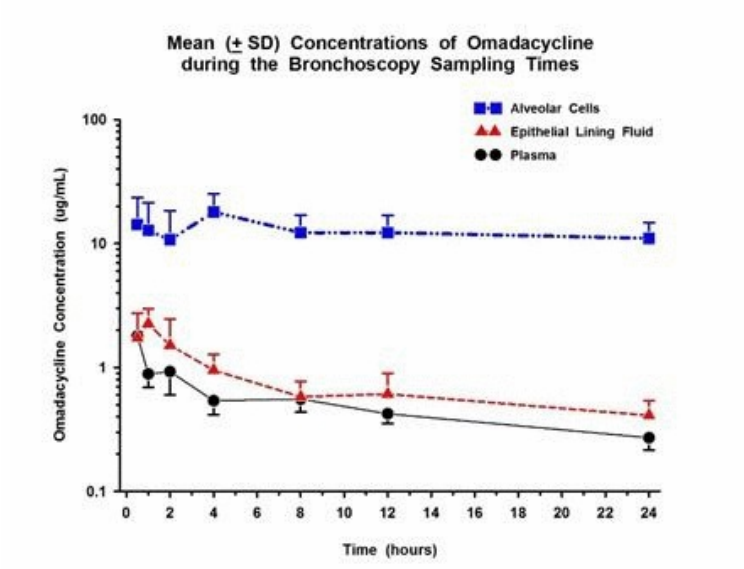
Study Design. The objectives of the study were to determine concentrations of omadacycline in pulmonary epithelial lining fluid, or ELF, and alveolar macrophages, or AM, define time course of pulmonary distribution relative to plasma PK, and determine PK of omadacycline in pulmonary and plasma compartments compared to tigecycline. 62 subjects were randomized in this open-label study to multiple IV doses (four days) of omadacycline (100 mg IV at 0, 12, 24, 48, and 72 hours) or tigecycline (100 mg IV, then 50 mg IV at 12, 24, 36, 48, 60, and 72 hours). After the last dose, bronchoscopy with BAL was performed at 1 of 7 time points (n=6 per time point) for omadacycline or at 1 of 4 time points (n=5 per time point) for tigecycline.

Study PK Results. 42 subjects received omadacycline (69% male, median age 36 y, median BMI 27 kg/m2). Of these 42 subjects, six subjects had BAL at each of the 7 time points. One subject had a BAL sampling error and was not included in BAL analyses. Mean (± SD) plasma pharmacokinetic parameters after the fifth omadacycline dose included maximum concentration of 2.12 ± 0.68 µg/mL, volume of distribution of 190 ± 53 L, clearance of 8.79 ± 2.21 L/h, and elimination half-life of 16.0 ± 3.5 h. Mean (± SD) omadacycline concentrations (µg/mL) at time of bronchoscopy and BAL were:

Sampling Time	Plasma	ELF	AM
0.5 h	1.80 ± 0.13	1.73 ± 1.01	14.26 ± 9.30
1 h	0.89 ± 0.19	2.25 ± 0.72	12.80 ± 8.48
2 h	0.93 ± 0.33	1.51 ± 0.94	10.77 ± 7.59
4 h	0.54 ± 0.12	0.95 ± 0.33	17.99 ± 7.17
8 h	0.56 ± 0.12	0.58 ± 0.19	12.27 ± 4.70
12 h	0.42 ± 0.07	0.61 ± 0.29	12.29 ± 4.61
24 h	0.27 ± 0.05	0.41 ± 0.13	11.06 ± 3.72

Figure F-5 depicts the mean concentration time curves for the Alveolar Cell, ELF, and plasma.

Figure F-5 Mean (± SD) Concentrations of Omadacycline versus Time (PK Population) for Plasma, ELF, and AM



Penetration ratios based on AUC0-24 values of mean and median ELF and plasma concentrations were 1.47 and 1.42, respectively, whereas ratios of AM to plasma concentrations were 25.8 and 24.8, respectively.

Study Safety Results. TEAEs were reported in 29% of omadacycline subjects. The most common TEAE in omadacycline subjects was headache (12%). No severe or serious TEAEs and no discontinuations due to TEAEs were reported in omadacycline

subjects. There were no clinically significant changes in vital signs, laboratory or ECG parameters. Omadacycline demonstrated a favorable tolerability profile for gastrointestinal, or GI, events such as nausea and vomiting compared to tigecycline.

Study Conclusions - The in vitro activity against common typical and atypical pathogens and the sustained ELF and AM concentrations for 24 hours suggest that omadacycline has the potential to be a useful antibacterial agent for the treatment of lower respiratory tract bacterial infections caused by susceptible pathogens.

Phase 1 Clinical Study to Evaluate the Safety and Pharmacokinetics of Omadacycline in Female Adults with Cystitis (uUTI):

Study Design. The primary objectives were to evaluate the urine and plasma concentrations of omadacycline, or OMC. The secondary objectives were to evaluate the safety and efficacy of omadacycline in female adults with cystitis. This study was a randomized (1:1:1), open-label, parallel-designed Phase 1b study evaluating three dosing regimens of omadacycline in the treatment of female adults with cystitis. Following a Screening period of up to 48 hours, eligible subjects were randomly assigned to 1 of 3 groups and received dosing regimens of omadacycline. Dosing was as follows:

Dose Time	Study Day	Group 1 OMC IV Load, Oral Daily	Group 2 OMC Oral Load, Oral Daily	Group 3 OMC High oral Load, High oral Daily
t = 0 h	1	200 mg iv	300 mg po	450 mg po
t = 12 h	1	—	300 mg po	450 mg po
t = 24 h	2	300 mg po	300 mg po	450 mg po
t = 48 h	3	300 mg po	300 mg po	450 mg po
t = 72 h	4	300 mg po	300 mg po	450 mg po
t = 96 h	5	300 mg po	300 mg po	450 mg po

Study Results. Overall, 31 subjects (11 in Group 1 and 10 in each of Groups 2 and 3) were randomized and received the study drug at three study sites. All but one subject completed the intended five days of study treatment (1 subject in Group 1 withdrew consent). Subjects were females and they ranged in age from 19 to 75 years (mean 42 years overall). Plasma PK results on Day 1 showed the highest omadacycline exposure following the 200-mg IV dose in Group 1 (geometric mean AUC_{0-24} 15557 h*ng/mL). The Day 1 geometric mean AUC_{0-12} value for Group 2 was 6152 h*ng/mL (following the first 300 mg po dose) and, for Group 3, the value was 6686 h*ng/mL (following the first 450 mg po dose). By Day 5 the geometric mean AUC_{0-24} values for Groups 1 and 2 were 9555 h*ng/mL and 12375 h*ng/mL, respectively following 300 mg po doses, and for Group 3 the value was 18693 h*ng/mL following the 450 mg po dose. At steady state (Day 5), the geometric mean cumulative amount of drug excreted in urine from time t0 to t24 (Ae0-24) values for Groups 1, 2, and 3 were 21.72 mg, 31.46 mg, and 43.60 mg, respectively. Relative to the absorbed amount of omadacycline, this corresponds to geometric mean fraction of the dose excreted unchanged in urine from 0 to 24 hours after dosing (Fe0-24) for Groups 1, 2, and 3 on Day 5 of 20.7%, 30.0%, and 27.7%, respectively. The highest mean omadacycline urine concentration value (65360 ng/mL [65.4 µg/mL]) was observed in Group 1 over 0 to 4 hours after the 200 mg IV dose on Day 1. The mean values across all other intervals/Groups ranged from 11699 to 48117 ng/mL (ie, 11.7 to 48.1 µg/mL). The most common TEAEs in all groups were gastrointestinal, most notably nausea (60% to 73% per group) and vomiting (20% to 40% per group), all of which were of mild or moderate intensity. No subjects in the study discontinued study treatment because of these TEAEs. No subjects in this study experienced severe TEAEs or SAEs, leading to premature discontinuation of the study drug.

Figure F-6 Mean (± SD) Plasma Concentrations of Omadacycline Three Dose Levels on Days 1 (Left Panel) and 5 (Right Panel)

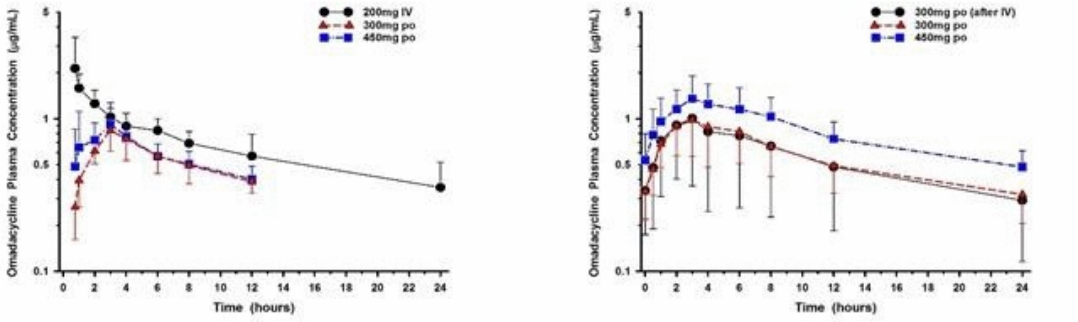
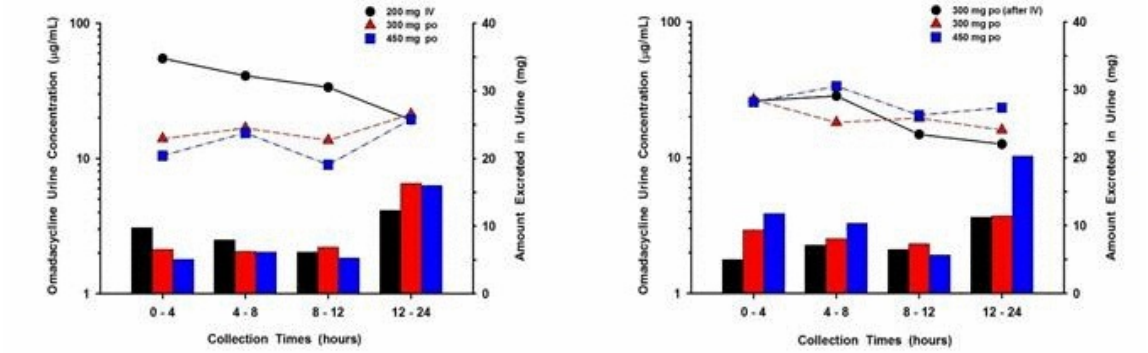


Figure F-7 Mean (± SD) Urine Concentrations of Omadacycline Three Dose Levels on Days 1 (Left Panel) and 5 (Right Panel)



Study Conclusions. Omadacycline is partially excreted in urine in adult female subjects with cystitis. With the treatment regimens studied, observed urine concentrations of omadacycline compared favorably with minimum inhibitory concentration values for common UTI pathogens, and a high percentage of subjects achieved clinical success and favorable microbiological response. There was a higher than expected incidence of GI, TEAEs (particularly nausea and vomiting), which contrasts with the notably lower rates of nausea and vomiting observed in other clinical studies using comparable dosing regimens. Omadacycline may be a useful treatment for certain UTIs and warrants evaluation in larger controlled studies, with continued close monitoring of GI tolerability.

We believe that the results of the recently and previously completed Phase 1 clinical studies appeared to show that omadacycline:

- was well tolerated, without significant complaints of nausea or vomiting in subjects treated with the commercial ready IV or oral formulations being used in Phase 3 clinical studies at the planned therapeutic dose;
- was bioequivalent in both oral and IV formulations;
- was without induction or inhibition of cytochrome proteins enzymes;
- had PK properties sufficient to support once-daily dosing regimens;

- had minimal variations in bioavailability among men and women and patients at varying weights and sizes, supporting fixed dose oral and IV formulations;
- would not require dosage adjustment in patients with hepatic or renal impairment;
- has reduced oral bioavailability by food if tablets are taken too close after a meal or if a meal is eaten too soon after taking a tablet (currently requiring oral dosing six hours after a meal and no food for two hours after oral dosing to minimize any potential PK interference by food);
- was excreted as active drug (unchanged parent compound without any metabolites) with sufficient concentrations in urine to contemplate development for UTI.
- was associated with asymptomatic increases in heart rate in healthy volunteer subjects; but mean heart rate increases were small in the completed Phase 3 ABSSSI study in patients. Refer to Figure F-1.
- did not affect the QTc interval as demonstrated in a thorough QTc study;
- was associated with mild reversible increases in alanine aminotransferase, a liver enzyme, at doses above the therapeutic doses used in Phase 2 and Phase 3 cSSSI non-registration clinical studies and in the Phase 3 ABSSSI and CABP registration clinical studies; and
- achieves lung and pulmonary macrophage concentration levels in humans in excess of plasma concentrations, strengthening the rationale for the potential use in CABP

From our End-of-Phase 2 meeting with the FDA regarding omadacycline, the FDA stated that our anticipated preclinical package for this product candidate could be acceptable to support the submission and review of an NDA. We have initiated the normal pre-NDA activities to confirm with the FDA the completeness of our preclinical, clinical, and CMC package to be included in the NDA submission. Based on preliminary discussions with the FDA, we believe that as a result of the implementation of new pregnancy labeling guidelines at the FDA, additional preclinical studies may need to be conducted to ensure complete data is available for the pregnancy section of label. We also intend to initiate a pediatric PK study following the submission of the omadacycline NDA in order to meet Pediatric Research Equity Act, or PREA, requirements. On February 16, 2016 we reached agreement with the FDA on the terms of the pediatric program associated with PREA. FDA has granted Paratek a waiver from conducting studies with omadacycline in children less than 8 years old and a deferral in conducting studies in children 8 years and older until safety and efficacy is established in adults.

Preclinical Studies

We have conducted preclinical studies to assess the safety of omadacycline, including 13-week IV and oral studies in rats and monkeys to assess for efficacy in animal models of bacterial infections. *In vitro* and *in vivo* testing indicated the potential clinical utility of omadacycline in ABSSSI, CABP and UTI. The following table in the Microbiology sections shows the *in vitro* activity of omadacycline against a broad range of bacterial pathogens found in ABSSSI, CABP and UTI, as assessed in independent laboratories using bacteria isolated from clinical specimens.

Clinical bacterial isolate minimum inhibitory concentration, or MIC, data from Phase 3 clinical trials will determine the susceptibility or resistance breakpoint levels of omadacycline for the bacteria noted in the following tables in the Microbiology sections. MIC values are indicative of a bacterium's susceptibility or resistance to a particular antibiotic. A lower MIC value indicates potentially greater potency *in vitro*. Susceptibility and resistance data from other tetracycline-like compounds provide some guidance with regard to expected results for omadacycline. Historically, with older tetracyclines, MIC values for gram-positive bacteria were considered susceptible up to two micrograms per milliliter, or μg/mL, and for most gram-negative bacteria up to four μg/mL. Traditionally, bacteria considered resistant had MIC values for gram-positive bacteria of eight μg/mL and above, while gram-negative bacteria were considered resistant with MIC values of 16 μg/mL and higher.

Pharmacodynamic Characteristics Supporting Omadacycline Clinical Development in CABP

The microbiologic attributes of omadacycline, its effectiveness in non-neutropenic animal infection models, and its human pharmacokinetics suggest that omadacycline will be efficacious in CABP. Omadacycline has demonstrated in vitro activity against the most common bacterial pathogen, *Streptococcus pneumoniae* (MIC90=0.06 to 0.12 μg/ml) and against *H. influenzae* (MIC90= 1.0 μg/ml) and *Legionella pneumophila* (MIC90= 0.25 μg/ml). Based on pharmacodynamics modeling using animal infection models, and taking into consideration an intact immune system, the projected efficacious plasma area under the curve, or AUC, to be attained in pneumonia would be between 0.5 and 1.1 μg*hr/ml. This would correspond to an AUC/MIC ratio between 4.3-8.9. In humans, omadacycline has been shown to have a steady-state plasma AUC of approximately 10 μg*hr/ml. Utilizing a MIC90 of 0.125 μg/ml for *S. pneumoniae* (the principle pathogen in CABP), the calculated AUC/MIC ratio is approximately 80 —well above the expected

AUC required for projected clinical efficacy based upon these animal models. Other factors may also contribute to efficacy, including low protein binding (< 20% in humans) and high lung tissue concentrations (in rats, omadacycline concentrations are 5.8 times greater than plasma concentrations). Finally, the BAL ELF levels in humans further amplified the projected exposure of omadacycline in human lung.

The microbiologic and pharmacokinetic attributes of omadacycline also compare favorably to tigecycline, which was approved for the treatment of moderate to severe CABP (IV-only) with robust clinical efficacy in two pivotal Phase 3 registration CABP studies. Whereas the activity of omadacycline against *S. pneumoniae* is similar (0.06-0.125 µg/ml compared to 0.06 for tigecycline), the human plasma AUC (approximately 4.7 µg*hr/ml for tigecycline versus approximately 10 µg*hr/ml for omadacycline) and human protein binding (>80% for tigecycline and <20% for omadacycline) suggests greater free drug concentrations of omadacycline in human plasma. Human lung concentration ratios above plasma for tigecycline are approximately similar to the human lung concentration ratios above plasma of omadacycline. These data, in totality, suggest that the pharmacodynamics characteristics of omadacycline compare favorably to tigecycline and support the clinical development of omadacycline in CABP.

In Vitro Microbiology Studies

In the tables below, the column labeled "Number of Isolates" indicates the number of patients from whom an isolate of the organism was obtained. MIC**90** indicates the concentration of drug that inhibits 90% of the pathogens *in vitro*, while MIC**50** indicates the concentration of drug that inhibits 50% of the pathogens *in vitro*.

Class	Organism	Number of Isolates	MIC50 (µg / mL)	MIC90 (µg / mL)
Gram-positive pathogens[a]	*Staphylococcus aureus* (MSSA)	1206	0.12	0.12
	Staphylococcus aureus (MRSA)	942	0.12	0.12
	Coagulase-negative staphylococci	320	0.12	0.50
	Enterococcus faecalis (VSE)(1)	607	0.06	0.12
	Enterococcus faecalis (VRE)(2)	29	0.06	0.12
	Enterococcus faecium (VSE)	74	0.06	0.12
	Enterococcus faecium (VRE)	167	0.06	0.25
	Streptococcus pneumoniae	1012	0.06	0.12
	Streptococcus pneumoniae (PRSP)(3)	86	0.06	0.12
	Streptococcus pyogenes	286	0.06	0.06
	Streptococcus agalactiae	261	0.12	0.12
Gram-negative pathogens[b]	*Haemophilus influenzae*	2000	1.00	1.00
	Moraxella catarrhalis	639	0.12	0.12
	Escherichia coli	4348	0.50	2.00
	Klebsiella pneumoniae	675	2.00	8.00
	Acinetobacter baumannii	165	2.00	4.00
Anaerobic pathogens[c]	*Bacteroides fragilis*	21	0.50	4.00
	Clostridium perfringens	22	4.00	16.00
Atypical pathogens[d]	*Legionella pneumophila*[d]	90	0.25	0.25
	Mycoplasma pneumoniae[e]	20	0.125	0.25

(1) Vancomycin-sensitive enterococcus, or VSE
(2) Vancomycin-resistant enterococcus, or VRE
(3) Penicillin-resistant *S. pneumonia*, or PRSP
a Jones et al. Surveillance 2015. Data on file.
b Jones et al. Surveillance 2011. Data on file
c Micromyx report (Anaerobic Bacterial Pathogens) 2016.
d DuBois, J. et al. 2016. In vitro Bacterial and Intracellular Activity of Omadacycline Against *Legionella pneumophila*. 26th ECCMID. Poster P1323
e Waites, K. In Vitro Activities of Paratek Investigational Compound Omadacycline (PTK 0796) and Other Antimicrobial Agents Against Human Mycoplasmas. 2016

The tables below compare the *in vitro* activity of omadacycline and various antibiotics for ABSSSI, CABP and UTI pathogens against various strains of bacteria, including those resistant to current antibiotics.

Key Pathogens—ABSSSI

Organism (Number of Isolates)	MIC90 (µg/ml) Omadacycline	Ceftriaxone	Linezolid	Levofloxacin	Vancomycin	TMP-SMX(1)	Azithromycin
Staphylococcus aureus (MRSA) (942)	0.12	>8 (2)	1	>4	1	≤0.5	N/A
Staphylococcus aureus (MSSA) (1206)	0.12	4	1	4	1	≤0.5	N/A
Streptococcus pyogenes (286)	0.06	≤0.03	1	1	0.25	N/A	N/A

(1) Trimethroprim-sulfamethoxazole.
(2) ">" indicates the highest concentration tested.
"N/A" indicates that the antibiotic was not tested against this organism and/or has no useful therapeutic activity

Key Anaerobe Pathogens—ABSSSI

Organism (Number of Isolates)	MIC90 (µg/ml) Omadacycline	Cefotaxime	Metronidazole	Clindamycin	Amox-Clav
Anaerobic gram-positive *cocci* (101)	0.5	16	>64 (1)	8	16

(1) ">" indicates the highest concentration tested.

Key Typical Pathogens—CABP

Organism (Number of Isolates)	MIC90 (µg/ml) Omadacycline	Ceftriaxone	Linezolid	Levofloxacin	Vancomycin	Amox-Clav	Azithromycin
Staphylococcus aureus (MRSA) (942)	0.12	>8 (1)	1	>4 (1)	1	N/A	N/A
Streptococcus pneumoniae, PRSP (86)	0.12	2	1	1	0.25	>4 (1)	N/A
Haemophilus influenzae (2000)	1	≤0.06	N/A	≤0.12	N/A	2	2
Moraxella catarrhalis (639)	0.12	0.5	8	≤0.12	N/A	≤1	≤0.03

(1) ">" indicates the highest concentration tested.
"N/A" indicates that the antibiotic was not tested against this organism and/or has no useful therapeutic activity

Key Atypical Pathogens—CABP

Organism (Number of Isolates)	MIC90 (µg/ml) Omadacycline	Ceftriaxone	Linezolid	Moxifloxacin	Vancomycin	Amox-Clav	Azithromycin
Legionella pneumophila (90)	0.25	N/A	N/A	0.016 (1)	N/A	N/A	0.5

"N/A" indicates that the antibiotic was not tested against this organism and/or has no useful therapeutic activity.
(1) DuBois, J. et al. 2016. In vitro Bacterial and Intracellular Activity of Omadacycline Against *Legionella pneumophila*. 26th ECCMID. Poster P1323

Key Pathogens—UTI

Organism (Number of Isolates)	MIC90 (µg/ml) Omadacycline	Ceftriaxone	Linezolid	Levofloxacin	Vancomycin	Amox-clav
Escherichia coli ESBL pos. (1152)	2	>8	N/A	>4	N/A	>8
Staphylococcus aureus (MRSA) (942)	0.12	>8 (2)	1	>4	1	N/A
CoNS, MR (843)(1)	1	>8	1	>4	2	>8
Enterococcus species (897)	0.12	N/A	1	>4	>16	N/A

(1) CoNS, MR: Coagulase-negative Staphylococcus species (not Staphylococcus aureus), methicillin resistant.
(2) ">" indicates the highest concentration tested.
"N/A" indicates that the antibiotic was not tested against this organism and/or has no useful therapeutic activity.

In a U.S. Medacorp survey issued in 2013, 97.1% of the 103 surveyed physicians believed that their patients with a resistant *E.coli* could benefit from a new well tolerated bioequivalent IV/oral antibiotic. Furthermore, surveyed physicians suspected high levels of multi-drug resistant *E*-coli, or MDR-E, resistant to oral antibiotics in community UTIs. Almost half of the physicians surveyed suspected a MDR-E in 10-20% of community UTIs and 12% suspect MDR-E in greater than 20% of community UTIs. The U.S. Medacorp survey confirmed MDR-E resistant to oral antibiotics in the treatment of community UTIs is high, with 19% resistance to trimethoprim/sulfamethoxazole, 16% to beta-lactams (ESBL +ve) only, 18% to quinolones only, 14% to at least two of the three traditional classes, and 10% resistant to all three classes of antibiotic.

Omadacycline may provide a potential treatment option in patients with MDR-E. Further clinical trial investigation is planned given omadacycline's renal clearance >40% with parent compound and potentially well-tolerated once-daily IV/oral profile.

Ongoing Studies

Phase 3 Oral-Only ABSSSI Study

The Phase 3 clinical trial of omadacycline for the treatment of ABSSSI is designed to be a randomized, controlled and double-blinded multi-center study targeting the enrollment of approximately 700 patients in the United States, in which we will compare oral omadacycline to oral linezolid. The clinical trial design contemplates two days of 450mg once daily of omadacycline, followed by one 300 mg orally of omadacycline every 24 hours on subsequent days, compared to one 600 mg oral dose of linezolid every 12 hours. All subjects may be treated for up to 14 days. All medications will follow a double-blinded and double-dummy blinding design.

The primary endpoint for this clinical trial is non-inferiority of omadacycline compared to linezolid in the mITT population using a 10% non-inferiority margin. The mITT population refers to all randomized subjects without a potentially causative gram-negative causative pathogen at baseline. The primary endpoint for FDA purposes in this clinical trial will be ECR, which, according to the most recent FDA guidance issued in October 2013, refers to a greater than or equal to 20% reduction in lesion size compared to baseline assessed at 48 to 72 hours after initiation of treatment. For European Medicines Agency, or EMA, purposes, the primary endpoint will be clinical response at TOC, determined 16 to 20 days after the initial dose. Secondary endpoints include microbiological response and safety. In addition, drug levels in plasma will be assessed in a subset of the patients enrolled in the clinical trial. Major skin infection subclasses that will be allowed in the study include cellulitis, wound and major abscesses, all with a minimum infection lesion total surface area of contiguous involvement of greater than or equal to 75 square centimeters, or cm. The proportion of patients enrolled with major abscesses will not exceed 30% of the total enrolled population. Patients who have previously taken effective long half-life (24 hours or greater) antibiotics for the treatment of an infection within 72 hours of receiving the first dose of study medication will be excluded from enrollment.

Clinically Completed Phase 3 CABP Study

The Phase 3 clinical trial of omadacycline for the treatment of CABP, pursuant to our SPA agreement with the FDA, is designed to be a randomized, controlled and double-blinded multi-center study targeting the enrollment of approximately 750 patients globally, in which we compare IV and oral forms of omadacycline to moxifloxacin. The clinical trial design contemplates two 100 mg IV doses of omadacycline (dosed at a 12 hour interval) on the first day of treatment, followed by one 100 mg IV dose of omadacycline every 24 hours on subsequent days, with a potential switch to one 300 mg oral dose (two 150 mg tablets) of omadacycline every 24 hours, compared to one 400 mg IV dose of moxifloxacin every 24 hours, with a potential switch to one 400 mg oral dose every 24 hours. All subjects may be treated for up to 14 days. All medications will follow a double-blind and double-dummy blinding design.

The primary endpoint for this study is non-inferiority of omadacycline compared to moxifloxacin in the ITT population using a 10% non-inferiority margin. The ITT population in this clinical trial refers to all randomized patients. The primary endpoint for FDA purposes in this clinical trial will be the improvement in at least two of four patient-reported symptoms (cough, sputum production, chest pain and shortness of breath) without deterioration in any of the four symptoms at 72 to 120 hours after initiation of treatment, which is referred to as ECR in relation to CABP. For EMA purposes, the primary endpoint will be clinical response at TOC, determined 16 to 20 days after the initial dose. Key secondary endpoints include microbiological response, safety and all-cause mortality. At least 85% of the patients in the study will be required to have moderate-to-severe CABP, as defined by the protocol. Patients who have previously taken a dose of a short acting, potentially effective antibiotic for the treatment of an infection within 72 hours of receiving the first dose of study medication will be allowed for enrollment but only up to 25% of the total ITT population. While we anticipate that all patients will be initiated on IV treatment in a hospital setting, depending on physician assessment, patients may be subsequently discharged to oral therapy for both treatment arms.

Sarecycline

Sarecycline is a novel, next-generation tetracycline that we designed specifically for dermatological use. We exclusively licensed the U.S. rights to sarecycline for the treatment of acne to Allergan, who funds all U.S. development costs for this program. In exchange for license rights, we earn milestone payments upon the achievement of development and regulatory progress, of which a $4.0 million payment for the initiation of the Phase 3 acne vulgaris clinical studies in December 2014, and was received in January 2015, with $17.0 million remaining to be achieved, and a royalty on eventual net sales, if any. The next milestone is $5.0 million upon NDA submission. Allergan has recently reported that they expect top-line data from the Phase 3 studies in the first half of 2017. We retain development and commercialization rights outside of the United States, which are available for licensing to other partners in key international markets, such as the European Union, Japan, the rest of Asia, Canada, and Latin America. Allergan completed a Phase 2 clinical trial in early 2013 of sarecycline for the treatment of acne, the results of which were presented at an Allergan investor day conference in February 2015. In addition, we granted Allergan an exclusive license to develop and commercialize sarecycline for the treatment of rosacea in the United States, which converted to a non-exclusive license in December 2014 after Allergan did not exercise its development option with respect to rosacea. There are currently no clinical trials in rosacea underway.

Market

Both acne and rosacea can be disfiguring conditions with significant social and medical costs. According to IMS sales data, over $3.0 billion was spent on treatments for acne in 2013. In excess of $1.3 billion was spent in 2011 on various oral formulations of doxycycline or minocycline to treat these conditions. Periostat, reformulated doxycycline, and Solodyn, reformulated minocycline, recorded peak sales of approximately $300 million in 2012 and $750 million in 2011, respectively. In November 2015, at an investor day conference, Allergan estimated peak U.S. revenue for sarecycline to potentially reach $250 to $300 million.

The most common oral treatments prescribed by dermatologists are tetracycline derivatives, which dermatologists widely accept as a therapy for moderate to severe acne. A common side effect associated with the use of any broad-spectrum antibacterial agent is gastrointestinal upset and antibiotic-associated infections caused by the destruction of the normal bacterial flora. In addition, we believe there is a growing concern and awareness of the development of antibiotic-resistant bacteria from the heavy use of broader-spectrum antibiotics, such as the older-generation tetracyclines, when broad-spectrum antibacterial therapy is not necessary. Similarly, for patients with severe acne, we believe that oral retinoid drugs are the leading option, but these drugs are not universally effective and also can carry potentially serious side effects. Therefore, we believe there is an unmet need for an improved tetracycline for this market.

Development

In the treatment of acne, we believe a new product that targets a narrower spectrum of bacterial types, including *Propionibacterium acnes*, a key bacterium associated with acne, would offer advantages over the existing therapies, including older tetracycline derivatives. As compared to existing tetracyclines being used for the treatment of acne, preclinical studies suggest that sarecycline may have an improved profile that includes a narrow spectrum of antibacterial activity, oral bioavailability, anti-inflammatory activity, favorable GI tolerability, and favorable PK properties.

Other Product Candidates

We also have discovered and developed a series of product candidates through to proof-of-concept stage in animal models. Some of these tetracycline-derived, novel molecular entities were designed to utilize the recognized immune-modulation, anti-inflammatory and other beneficial properties of the tetracycline class. These research stage programs include potential product candidates for multiple sclerosis, spinal muscular atrophy, systemic inflammatory diseases such as rheumatoid arthritis and inflammatory bowel diseases, and an oral, narrow-spectrum, tetracycline-derived compound with activity against *Clostridium difficile in vitro* and in a rodent model of *Clostridium difficile-associated diarrhea*. We are currently evaluating which of these programs, if any, we may elect to develop further.

Commercialization Strategy

Assuming approval from regulatory authorities, we currently intend to market omadacycline as an empiric monotherapy that will be commercialized worldwide for the treatment of serious, community-acquired bacterial infections. We retain worldwide commercial rights to omadacycline. In the United States and Europe, we continue to reserve the right to either commercialize omadacycline alone, through one or more pharmaceutical companies that have established commercial capabilities, or some combination thereof.

We believe that there is a similar rapidly growing need in other markets throughout the world, including established Asian markets such as Japan, Korea and Taiwan, as well as emerging markets, such as China, Russia, South America and India. We plan to pursue expansion of omadacycline to these markets through partnerships.

We exclusively licensed U.S. rights to Allergan to develop and commercialize sarecycline for the treatment of acne. In addition, we granted Allergan an exclusive license to develop and commercialize sarecycline for the treatment of rosacea in the United States, which converted to a non-exclusive license in December 2014 after Allergan did not exercise its development option with respect to rosacea. There are currently no clinical trials in rosacea under way. We retain development and commercialization rights to sarecycline in all other regions of the globe. We plan to leverage the existing development and commercialization infrastructure of one or more potential partners to advance sarecycline through registration and commercialization outside of the U.S.

Competition

Our potential competitors include large pharmaceutical and biotechnology companies, specialty pharmaceutical companies and generic drug companies. We believe that our product candidates offer key potential advantages over competitive products that could enable our product candidates, if approved, to capture meaningful market share from our competitors.

If approved by the FDA, omadacycline will compete with other antibiotics in the serious bacterial skin infection market. These include, but are not limited to, vancomycin, marketed as a generic by Abbott Laboratories and others; linezolid, marketed as Zyvox by Pfizer Inc. and available as a generic; daptomycin, marketed as Cubicin by Merck Pharmaceuticals, Inc. and available as a generic; dalbavancin, approved in May 2014 and marketed as Dalvance by Allergan; tedizolid, marketed as Sivextro by Merck Pharmaceuticals, Inc.; oritavancin, approved in August 2014 and marketed as Orbactiv by The Medicines Company; quinupristin/dalfopristin, marketed as Synercid by Pfizer, Inc.; tigecycline, marketed as Tygacil by Pfizer Inc. and available as a generic; telavancin, marketed as Vibativ by Theravance, Inc.; ceftaroline, marketed as Teflaro by Allergan; and generic trimethoprim/sulfamethoxazole and clindamycin.

Further, we expect that product candidates currently in review with the FDA, or in Phase 3 clinical development, or that could enter Phase 3 clinical development in the near future, may represent significant competition if approved. These include, but are not limited to, delafloxacin, submitted for FDA review in October 2016 by Melinta Therapeutics; CG-400549, under development by Crystal Genomics; GSK2140944, under development by GSK; nemonoxacin, under development by TaiGen Biotechnology; avarofloxacin, under development by Allergan; brilacidin, under development by Cellceutix; and radezolid, under development by Melinta Therapeutics

If approved by the FDA, omadacycline will also compete with other antibiotics in the community-acquired pneumonia market. These include azithromycin, marketed as Zithromax and Z-PAK by Pfizer Inc. and available as a generic; clarithromycin, marketed as Biaxin by Abbott Laboratories and available as a generic; moxifloxacin, marketed as Avelox by Bayer AG and available as a generic; levofloxacin, marketed as Levaquin by Johnson & Johnson and available as a generic; tigecycline, marketed as Tygacil by Pfizer Inc. and available as a generic; linezolid, marketed as Zyvox by Pfizer Inc. and available as a generic; ceftriaxone, marketed as Rocephin by F. Hoffman-La Roche Ltd and available as a generic; and ceftaroline, marketed as Teflaro by Allergan. We are also aware of various drugs that are or may eventually be under development for the treatment of CABP, delafloxacin and radezolid, under development by Melinta Therapeutics; solithromycin, under development by Cempra, Inc.; GSK2140944, under development by GSK; lefamulin, under development by NabrivaTherapeutics; nemanoxacin, under development by TaiGen Biotechnology; and avarofloxacin, under development by Allergan.

A number of competitors exist in the UTI indication. Generic potential competitors include levofloxacin, ciprofloxacin, trimethoprim/sulfamethoxazole, ceftriaxone and amoxicillin/clavulanic acid. Several branded and generic injectable-only antibiotics are also used in hospitals, including imipenem/cilastatin, piperacillin/tazobactam and gentamicin brands. A limited number of companies are developing new oral antibiotics for the treatment of UTI infections, including eravacycline by Tetraphase Pharmaceuticals and finafloxacin by MerLion Pharmaceuticals and sulopenem by Iterum Therapeutics.

Many of our potential competitors have substantially greater financial, technical and human resources than we do, as well as greater experience in the discovery and development of product candidates, obtaining FDA and other regulatory approvals of products and the commercialization of those products. Our competitors' drugs may be more effective, or more effectively marketed and sold, than any product candidate we may commercialize and may render our product candidates obsolete or non-competitive before we can recover the expenses of our development and commercialization. We anticipate that we will face intense and increasing competition as new drugs enter the market and advanced technologies become available. Finally, the development of new treatment methods for the diseases we are targeting could render our product candidates non-competitive or obsolete.

Manufacturing

We do not own or operate current Good Manufacturing Practices, or cGMP, manufacturing facilities for the production of any of our product candidates, nor do we have plans to develop our own manufacturing operations in the foreseeable future. We generally develop the initial synthesis routes for our compounds and partner with third-party manufacturers to scale-up and develop these processes, analytical methods and formulations. Our product candidates have to date been organic compounds of low molecular weight, commonly referred to as small molecules. They are manufactured in synthetic processes from starting materials that have to date been generally available. We currently rely on a small number of third-party contract manufacturers for all of our required raw materials, drug substance and finished product for our preclinical research and clinical trials. We have entered into agreements with third-party contract manufacturers for the commercial production of those product candidates to ensure that commercial supply is available should those product candidates be approved.

For omadacycline, the manufacturing process has been refined to commercial scale. The active pharmaceutical ingredient manufacturing process is an efficient three-step synthesis followed by purification and salt formation. The starting material is minocycline, which is a well characterized generic active ingredient. We have produced stable IV and oral drug product formulations. Clinical production of omadacycline has yielded room temperature stability through at least three years. In 2016 we completed three registration batches each for the IV and oral formulations of omadacycline, which have subsequently been put on stability testing. We have entered into commercial supply agreements with qualified commercial manufacturers that also provided omadacycline for phase 3 clinical use, and we intend to use these manufacturers to complete process validation in support of potential market authorization filing, approval and launch.

CIPAN

In November 2016, we entered into a manufacturing and services agreement with CIPAN – Companhia Industrial Produtora de Antibióticos, or CIPAN. The agreement provides the terms and conditions under which CIPAN will manufacture and supply to us increased quantities of minocycline starting material and crude omadacycline, or the CIPAN Products, for purification into omadacycline and, subsequently, for use in our products that contain omadacycline as the active pharmaceutical ingredient. Under this agreement, we are obligated to pay a CIPAN Product price in the high three-digit U.S. Dollar range per kilogram for minocycline starting material and in the four-digit or five-digit U.S. Dollar range per kilogram for crude omadacycline, based on the annual volume of crude omadacycline that we order, subject to adjustments as set forth in the agreement. CIPAN will also perform certain services related to development, technology transfer and manufacturing of the CIPAN Products as provided in one or more statements of work, which shall set forth the fees payable by us to CIPAN for such services.

Our agreement with CIPAN will remain in effect for a fixed initial term, after which the agreement will continue, with respect to each CIPAN Product, for successive renewal terms unless either we or CIPAN have given written notice of termination within a certain period prior to the expiration of either the initial or then-current renewal term. The agreement may also be terminated under certain other circumstances, including by either party due to a material uncured breach by the other party or the other party's insolvency.

Carbogen

In December 2016, we entered into an outsourcing agreement with CARBOGEN AMCIS AG, or Carbogen. The agreement provides for the terms and conditions under which Carbogen will manufacture and supply to us the active pharmaceutical ingredient for our omadacycline product in bulk quantities, or the Carbogen Product. Under this agreement, we are responsible for the cost and supply of crude omadacycline that Carbogen requires to manufacture the Carbogen Products and perform related services. We are obligated to initially pay Carbogen an amount in the low seven-digit U.S. Dollar range per batch of Carbogen Product that we order, depending on the size of the campaign, and the price may be adjusted in accordance with the terms of the agreement. We may also request that Carbogen perform certain services related to the Carbogen Product, for which we will pay reasonable compensation to Carbogen.

Our agreement with Carbogen will remain in effect for a fixed initial term and both parties are obligated to use diligent efforts to come to a subsequent long-term agreement to replace this agreement no later than the end of such initial term. If we have not executed a replacement agreement with Carbogen by such time, this agreement will automatically be extended for a fixed period of time. We may terminate this agreement by delivering notice of termination to Carbogen prior to the expiration of the initial or subsequent term. The agreement may also be terminated under certain other circumstances, including by either party due to a material uncured breach by the other party or the other party's insolvency.

Almac

In December 2016, we entered into a manufacturing and services agreement with Almac Pharma Services Limited, or Almac. The agreement provides for the terms and conditions under which Almac will manufacture, package and supply to us omadacycline oral solid dosage tablets in bulk form, or the Almac Products. Under this agreement, we are required to use commercially reasonable efforts to timely provide Almac with the active pharmaceutical ingredient needed to manufacture the Almac Products and perform related services. We are obligated to pay a supply price in the five-digit range in Great Britain Pounds per batch of the Almac Products, subject to adjustments as provided in the agreement. We will also negotiate with Almac, as part of each individual scope of work, the reasonable costs for the services to be performed for us by Almac.

Our agreement with Almac will remain in effect for a fixed initial term, after which the agreement will continue for successive renewal terms unless either we or Almac have given written notice of termination within a certain period prior to the expiration of the initial or then-current renewal term. The agreement may also be terminated under certain other circumstances, including by either party due to a material uncured breach of the other party or the other party's insolvency.

Research and Development

We have and will continue to make substantial investments in research and development. Our research and development expenses totaled $83.5 million, $50.8 million and $5.0 million in 2016, 2015 and 2014, respectively.

In the ordinary course of business, we enter into agreements with third parties, such as contract research organizations, medical institutions, clinical investigators and contract laboratories, to conduct our clinical trials and aspects of our research and preclinical testing. These third parties provide project management and monitoring services and regulatory consulting and investigative services.

Intellectual Property

The proprietary nature of, and protection for, our proprietary drug development platform, our product candidates and our discovery programs, processes and know-how are important to our business. We seek patent protection in the United States and internationally for areas such as composition of matter and the chemistries that allow for the synthesis of novel, substituted tetracycline compounds that exhibit significant antibacterial and/or anti-inflammatory activity, and any other technology to which we have rights, where available and when appropriate. Our policy is to pursue, maintain and defend patent rights, whether developed internally or licensed from third parties, and to protect the technology, inventions and improvements that are commercially important to the development of our business. We also rely on trade secrets that may be important to the development of our business.

Our commercial success will depend in part on obtaining and maintaining patent protection and trade secret protection of our proprietary technologies and compounds, our current and future product candidates and the methods used to develop and manufacture them, as well as successfully defending these patents against third-party challenges. Our ability to prevent third parties from making, using, selling, offering to sell or importing our products and technology depends on the extent to which we have rights under valid and enforceable patents or trade secrets that cover these activities. We cannot be sure that patents will be granted with respect to any of our pending patent applications or with respect to any patent applications filed by us in the future, nor can we be sure that any of our existing patents or any patents that may be granted to us in the future will be commercially useful in protecting our technology.

As of December 31, 2016, our patent portfolio of owned or exclusively licensed patents and applications includes 61 issued U.S. patents, 32 pending U.S. patent applications and corresponding foreign national or regional counterpart patents or applications. We expect that the patents and patent applications in this portfolio, if issued, and if the appropriate maintenance, renewal, annuity or other government fees are paid, would expire between 2020 and 2037, excluding any additional terms from patent term adjustments or patent term extensions under the Hatch-Waxman Amendments.

Omadacycline

The patent portfolio for omadacycline is directed to cover compositions of matter, formulations, salts and polymorphs, manufacturing methods and methods of use. The patents and patent applications covering omadacycline include patents and patent applications owned by us. In some corresponding foreign patents and patent applications, omadacycline is covered along with other compounds in patents and patent applications that are owned jointly by us and Tufts University that are subject to a license agreement we have with Tufts University. The issued composition of matter patent in the United States (U.S. Patent No. 7,553,828), if the appropriate maintenance, renewal, annuity, or other governmental fees are paid, is expected to expire in 2023. We believe that an additional term of potentially up to five years for one of our omadacycline patents may result from the patent term extension provision of the Hatch-Waxman Amendments of 1984. Omadacycline has received QIDP designation under the Generating Antibiotic Incentives Now Act, or the GAIN Act. This may provide up to an additional five years of market exclusivity layered with protection provided by the Hatch-Waxman Amendments, which enables exclusivity to 2028. We expect that the other patents and patent applications in this portfolio, if issued, and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, would expire between 2021 and 2037, excluding any additional terms from patent term adjustments or patent term extensions under the Hatch-Waxman Amendments.

Sarecycline

The patent portfolio for our acne and rosacea program is directed to cover compositions of matter, methods of use, as well as salts and polymorphs of sarecycline. As of December 31, 2016, our patent portfolio includes issued U.S. Patent No. 8,318,706, or the '706 Patent, which covers composition of matter of sarecycline and issued U.S. Patent No. 8,513,223, or the '223 Patent, and corresponding foreign national or regional counterpart applications. The '706 Patent is expected to expire in 2031, and the '223 Patent is expected to expire in 2029, if the appropriate maintenance, renewal, annuity or other governmental fees are paid. We may also be entitled to an extension of the patent term for one of the patents covering sarecycline pursuant to the patent term extension provision of the Hatch-Waxman Amendments, as described in the section "U.S. Government Regulation – Patent Term Restoration and Marketing Exclusivity."

Intermezzo

As of December 31, 2016, our patent portfolio of owned or exclusively licensed patents and applications includes four issued U.S. patents, two pending U.S. patent applications and corresponding foreign national or regional counterpart patents and applications which are directed to formulations and methods of use. The issued U.S. patents expire between 2025 and 2029.

Trade Secrets

In addition to patents, we rely on trade secrets and know-how to develop and maintain our competitive position. Trade secrets and know-how can be difficult to protect. We seek to protect our proprietary technology and processes, in part, by confidentiality agreements and invention assignment agreements with our employees, consultants, scientific advisors, contractors and commercial partners. These agreements are designed to protect our proprietary information and, in the case of the invention assignment agreements, to grant us ownership of technologies that are developed through a relationship with a third party. We also seek to preserve the integrity and confidentiality of our data, trade secrets and know-how by maintaining physical security of our premises and physical and electronic security of our information technology systems.

Trademarks

We have registered trademarks and service marks for PARATEK and PARATEK & HEXAGON DESIGN, which we presently use or may use in connection with our pharmaceutical research and development as well as with our product candidates, in the United States, European Union, Japan, Korea, Taiwan, and Singapore, and pending applications in other international jurisdictions. In addition, we have registered the trademark and service mark PARATEK POSITIVE PATIENT STORIES in the European Union, Japan, Korea, and Australia, and pending applications in the United States and other international jurisdictions, which we presently use or may use in connection with the research and development of pharmaceuticals, drugs and antibiotics and the test, evaluation research and development of antibiotics and other pharmaceutical products, respectively. In connection with the ongoing development and advancement of our products and services in the United States and in various international jurisdictions, we routinely seek to create protection for our marks and enhance their value by pursuing trademarks and service marks where available and when appropriate.

Collaborations and License Agreements

Our commercial strategy is to partner with established pharmaceutical companies to develop and market products for the larger community markets, while retaining certain rights to products aimed at concentrated markets, such as hospital-based products, where we may seek to participate in development and commercialization.

Allergan plc

In July 2007, we and Warner Chilcott Company, Inc. (now part of Allergan), entered into a collaborative research and license agreement, or the Allergan Collaboration Agreement, under which we granted Allergan an exclusive license to research, develop and commercialize tetracycline products for use in the United States for the treatment of acne and rosacea. Since Allergan did not exercise its development option with respect to the treatment of rosacea prior to initiation of a Phase 3 trial for the product, the license grant to Allergan converted to a non-exclusive license for the treatment of rosacea as of December 2014. Under the terms of the Allergan Collaboration Agreement, we and Allergan are responsible for, and are obligated to use, commercially reasonable efforts to conduct specified development activities for the treatment of acne and, if requested by Allergan, we may conduct certain additional development activities to the extent we determine in good faith that we have the necessary resources available for such activities. Allergan has agreed to reimburse us for its costs and expenses, including third-party costs, incurred in conducting any such development activities.

Under the terms of the Allergan Collaboration Agreement, Allergan is responsible for and is obligated to use commercially reasonable efforts to develop and commercialize tetracycline compounds that are specified in the agreement for the treatment of acne. Allergan failed to elect to advance the development of sarecycline for the treatment of rosacea in accordance with the terms of the agreement so the license granted to Allergan was converted to a non-exclusive license for the treatment of rosacea We have agreed during the term of the Allergan Collaboration Agreement not to directly or indirectly develop or commercialize any tetracycline compounds in the United States for the treatment of acne and rosacea, and Allergan has agreed during the term of the Allergan Collaboration Agreement not to directly or indirectly develop or commercialize any tetracycline compound included as part of the agreement for any use other than as provided in the agreement.

We earned an upfront fee in the amount of $4.0 million upon the execution of the Allergan Collaboration Agreement, $1.0 million upon filing of an Investigational New Drug Application, or IND, in 2010, and $2.5 million upon initiation of Phase 2 trials in 2012. In December 2014, we also earned $4.0 million upon initiation of Phase 3 trials associated with the Allergan Collaboration Agreement. In addition, Allergan may be required to pay us an aggregate of approximately $17.0 million upon the achievement of specified future regulatory milestones, the next being $5.0 million upon acceptance by the FDA, of a NDA submission. Allergan is also obligated to pay us tiered royalties, ranging from the mid-single digits to the low double digits, based on net sales of tetracycline compounds developed under the Allergan Collaboration Agreement, with a standard royalty reduction post patent expiration for such product for the remainder of the royalty term. Allergan's obligation to pay us royalties for each tetracycline compound it commercializes under the Allergan Collaboration Agreement expires on the later of the expiration of the last to expire patent that covers the tetracycline compound in the United States and the date on which generic drugs that compete with the tetracycline compound reach a certain threshold market share in the United States.

Either we or Allergan may terminate the Allergan Collaboration Agreement for certain specified reasons at any time after Allergan has commenced development of any tetracycline compound, including if Allergan determines that it would not be commercially viable to continue to develop or commercialize the tetracycline compound and/or that it is unlikely to obtain regulatory approval of the tetracycline compound, and, in any case, no backup tetracycline compound is in development or ready to be developed and the parties are unable to agree on an extension of the development program or an alternative course of action. Either we or Allergan may terminate the Allergan Collaboration Agreement for the other party's uncured breach of a material term of the agreement on 60 days' notice (unless the breach relates to a payment term, which requires a 30-day notice) or upon the bankruptcy of the other party that is not discharged within 60 days. Upon the termination of the Allergan Collaboration Agreement by Allergan for our breach, Allergan's license will continue following the effective date of termination, subject to the payment by Allergan of the applicable milestone and royalty payments specified in the agreement unless our breach was with respect to certain specified obligations, in which event the obligation of Allergan to pay us any further royalty or milestone payments will terminate. Upon the termination of the Allergan Collaboration Agreement by us for Allergan's breach or the voluntary termination of the agreement by Allergan, Allergan's license under the agreement will terminate.

Tufts University

In February 1997, we and Tufts University, or Tufts, entered into a license agreement under which we acquired an exclusive license to certain patent applications and other intellectual property of Tufts related to the drug resistance field to develop and commercialize products for the treatment or prevention of bacterial or microbial diseases or medical conditions in humans or animals

or for agriculture. We subsequently entered into nine amendments to that agreement, or collectively the Tufts License Agreement, to include patent applications filed after the effective date of the original license agreement, to exclusively license additional technology from Tufts, to expand the field of the agreement to include disinfectant applications, and to change the royalty rate and percentage of sublicense income paid by us to Tufts under sublicense agreements with specified sublicensees. We are obligated under the Tufts License Agreement to provide Tufts with annual diligence reports and a business plan and to meet certain other diligence milestones. We have the right to grant sublicenses of the licensed rights to third parties, which will be subject to the prior approval of Tufts unless the proposed sublicensee meets a certain net worth or market capitalization threshold. We are primarily responsible for the preparation, filing, prosecution and maintenance of all patent applications and patents covering the intellectual property licensed under the Tufts License Agreement at our sole expense. We have the first right, but not the obligation, to enforce the licensed intellectual property against infringement by third parties.

We issued Tufts 1,024 shares of our common stock on the date of execution of the original license agreement, and we may be required to make certain payments of up to $0.3 million to Tufts upon the achievement by products developed under the agreement of specified development and regulatory approval milestones. We have already made a payment of $50,000 to Tufts for achieving the first milestone following commencement of the Phase 3 clinical trial for omadacycline. We are also obligated to pay Tufts a minimum royalty payment in the amount of $25,000 per year. In addition, we are obligated to pay Tufts royalties based on gross sales of products, as defined in the agreement, ranging in the low single digits depending on the applicable field of use for such product sale. If we enter into a sublicense under the Tufts License Agreement, based on the applicable field of use for such product, we will be obligated to pay Tufts a percentage, ranging from 10% to 14% (ten percent to fourteen percent) of that portion of any sublicense issue fees or maintenance fees received by us that are reasonably attributable to the sublicense of the rights granted to us under the Tufts License Agreement. and the lesser of a percentage, ranging from the low tens to the high twenties based on the applicable field of use for such product, of the royalty payments made to us by the sublicensee or the amount of royalty payments that would have been paid by us to Tufts if we had sold the products.

Unless terminated earlier, the Tufts License Agreement will expire at the same time as the last-to-expire patent in the patent rights licensed to us under the agreement and after any such expiration we will continue to have an exclusive, fully-paid-up license to such intellectual property licensed from Tufts. Tufts has the right to terminate the agreement upon 30 days' notice should we fail to make a material payment under the Tufts License Agreement or commit a material breach of the agreement and not cure such failure or breach within such 30-day period, or if, after we have started to commercialize a product under the Tufts License Agreement, we cease to carry on its business for a period of 90 consecutive days. We have the right to terminate the Tufts License Agreement at any time upon 180 days' notice. Tufts has the right to convert our exclusive license to a non-exclusive license if we do not commercialize a product licensed under the agreement within a specified time period.

Purdue Pharma L.P.

In July 2009, we and Purdue Pharma L.P., or Purdue Pharma, entered into a collaboration agreement, or the Purdue Collaboration Agreement, that grants an exclusive license to Purdue Pharma to commercialize Intermezzo in the United States and pursuant to which:

- Purdue Pharma paid us a $25.0 million non-refundable license fee in August 2009;
- Purdue Pharma paid us a $10.0 million non-refundable intellectual property milestone in December 2011 when the first of two issued formulation patents was listed in the FDA's Approved Drug Products with Therapeutic Equivalence Evaluations, or Orange Book;
- Purdue Pharma paid us a $10.0 million non-refundable intellectual property milestone in August 2012 when the first of two issued methods of use patents was listed in the FDA's Orange Book;
- We transferred the Intermezzo NDA to Purdue Pharma, and Purdue Pharma is obligated to assume the expense associated with maintaining the NDA and further development of Intermezzo in the United States, including any expense associated with post-approval studies;
- Purdue Pharma is obligated to commercialize Intermezzo in the United States at its expense using commercially reasonable efforts;

- Purdue Pharma is obligated to pay us tiered base royalties on net sales of Intermezzo in the United States ranging from the mid-teens up to the mid-20% level, with each such royalty tiers subject to an increase by a percentage in the low single digits upon a specified anniversary of regulatory approval of Intermezzo. The base royalty is tiered depending upon the achievement of certain fixed net sales thresholds by Purdue Pharma, which net sales levels reset each year for the purpose of calculating the royalty. The royalty tiers are subject to reductions upon generic entry and patent expiration. Purdue Pharma is obligated to pay royalties until the later of 15 years from the date of first commercial sale in the United States or the expiration of patent claims related to Intermezzo; and
- Purdue Pharma is obligated to pay us up to an additional $70.0 million upon the achievement of certain net sales targets for Intermezzo in the United States.

We had an option to co-promote Intermezzo to psychiatrists in the United States and such option was terminated as a result of the Merger.

The Purdue Collaboration Agreement expires on the expiration of Purdue Pharma's royalty obligations. Purdue Pharma has the right to terminate the Purdue Collaboration Agreement at any time upon advance notice of 180 days. The Purdue Collaboration Agreement is also subject to termination by Purdue Pharma in the event of FDA or governmental action that materially impairs Purdue Pharma's ability to commercialize Intermezzo or the occurrence of a serious event with respect to the safety of Intermezzo. The Purdue Collaboration Agreement may also be terminated by us upon Purdue Pharma commencing an action that challenges the validity of Intermezzo related patents. We also have the right to terminate the Purdue Collaboration Agreement immediately if Purdue Pharma is excluded from participation in federal healthcare programs. The Purdue Collaboration Agreement may also be terminated by either party in the event of a material breach by or insolvency of the other party.

We also granted Purdue Pharma and an associated company the right to negotiate for the commercialization of Intermezzo in Mexico in 2013 but retained the rights to commercialize Intermezzo in the rest of the world.

In December 2013, Purdue Pharma notified us that it intended to discontinue use of the Purdue Pharma sales force to actively market Intermezzo to healthcare professionals during the first quarter of 2014.

In October 2014, we announced that our Board of Directors had approved a special dividend of, among other things, the right to receive, on a pro rata basis, 100% of any royalty income received by us pursuant to the Purdue Collaboration Agreement and 90% of any cash proceeds from a sale or disposition of Intermezzo, less fees and expenses incurred in connection with such activity, to the extent that either occurred prior to the second anniversary of the closing date of the Merger. On October 28, 2016, in satisfaction of our payment obligation of the proceeds of sale or disposition of the Intermezzo assets to the former Transcept stockholders under the Merger Agreement, we executed a royalty sharing agreement, or the Royalty Sharing Agreement, with the Special Committee of the Company's Board of Directors, or the Special Committee, a committee established in connection with the Merger. Under the Royalty Sharing Agreement, we agreed to pay to the former Transcept stockholders fifty percent of all royalty income received by us pursuant to the Purdue Collaboration Agreement, net of all costs, fees and expenses incurred by the Company in connection with the Purdue Collaboration Agreement, related agreements, the Intermezzo product and the administration of the royalty income to the Transcept stockholders.

Shin Nippon Biomedical Laboratories Ltd.

In September 2013, we and Shin Nippon Biomedical Laboratories Ltd., or SNBL, entered into a License Agreement, or SNBL License Agreement, pursuant to which SNBL granted us an exclusive worldwide license to commercialize SNBL's proprietary nasal drug delivery technology to develop TO-2070. We were developing TO-2070 as a treatment for acute migraine using SNBL's proprietary nasal powder drug delivery system. Under the SNBL License Agreement, we were required to fund all development and regulatory approval with respect to TO-2070. Pursuant to the SNBL License Agreement, we paid an upfront nonrefundable technology license fee of $1.0 million, and we were also obligated to pay up to an aggregate of $41.5 million upon the achievement of certain development, regulatory and sales milestones, and tiered, low double-digit royalties on annual net sales of TO-2070.

In September 2014, we and SNBL entered into a Termination Agreement and Release, or the SNBL Termination Agreement, pursuant to which, among other things, the SNBL License Agreement was terminated and we assigned all of our rights, interest and title to the TO-2070 license rights to SNBL in exchange for a portion of certain future net revenue received by SNBL as set forth in the SNBL Termination Agreement, up to an aggregate of $2.0 million.

Past Collaborations

Novartis International Pharmaceutical Ltd.

In September 2009, we and Novartis International Pharmaceutical Ltd., or Novartis, entered into a Collaborative Development, Manufacture and Commercialization License Agreement, or the Novartis Agreement, for the co-development and commercialization of omadacycline, which included a $70 million upfront payment from Novartis to us, future development and sales milestone payments and future royalty payments, depending on the success of omadacycline. Under the agreement, Novartis was to have led development activities for omadacycline, and we were to have co-developed omadacycline and contributed a share of our development expense.

The Novartis Agreement provided that Novartis would bear the majority of all direct development costs incurred in connection with omadacycline and would assume all responsibility for the manufacturing of omadacycline. The agreement provided Novartis with a global, exclusive patent license for the development, manufacturing and marketing of omadacycline.

Novartis had the right to terminate the agreement without cause upon providing 60 days' advance written notice. Novartis provided us with a notice of intent to terminate the agreement on June 29, 2011, and the termination became effective 60 days later. While Novartis terminated the agreement without cause, Novartis indicated that it elected to terminate the agreement due to the then-existing delays and uncertainties experienced in connection with the regulatory pathway for approval of omadacycline in two core indications, ABSSSI and CABP.

In January 2012, we and Novartis entered into a letter agreement, or the Novartis Letter Agreement, in which we reconciled shared development costs and expenses and granted Novartis a right of first negotiation with respect to commercialization rights of omadacycline following approval of omadacycline from the FDA, the EMA, or any regulatory agency, but only to the extent that we have not previously granted such commercialization rights for omadacycline to another third party as of any such approval.

Under the Novartis Letter Agreement, we agreed to pay Novartis $2.9 million as reconciliation of development costs and expenses. In June 2014, we amended the Novartis Letter Agreement, as amended, and Novartis agreed to convert the full amount of development cost share plus any accrued interest into a 0.25% royalty, to be paid from net sales received by us in any country following the launch of omadacycline in that country and continuing until the later of expiration of the last active valid patent claim covering such product in the country of sale and 10 years from the date of first commercial sale in such country. The amended Novartis Letter Agreement resulted in a long-term liability in the amount of $3.6 million for the year ended December 31, 2016 and 2015 included within "Other Long Term Liabilities" on our consolidated balance sheet. There are no other payment obligations to Novartis under the Novartis Agreement or the Novartis Letter Agreement.

Global Animal Health Provider

In May 2014, we and a leading global animal health provider terminated an existing collaborative research, license and commercialization agreement. We have no future obligations under this agreement, and the leading global animal health company retains no rights to our technology. As a result of this termination, in 2014, we recognized the remaining $0.3 million of deferred revenue related to the upfront and milestone payments received in 2007 and 2008.

Government Regulation

Government authorities in the United States, at the federal, state and local level, and other countries extensively regulate, among other things, the research, development, testing, manufacture, labeling, packaging, promotion, storage, advertising, distribution, marketing and export and import of products such as those we are developing. Our drugs must be approved by the FDA through the NDA process before they may be legally marketed in the United States.

U.S. Government Regulation

NDA Approval Processes

In the United States, the FDA regulates drugs under the Federal Food, Drug and Cosmetic Act, or the FDCA, and implementing regulations. The process of obtaining regulatory approvals and the subsequent compliance with applicable federal, state, local and foreign statutes and regulation require the expenditure of substantial time and financial resources. Failure to comply with the FDCA and other applicable U.S. requirements at any time during the product development process, approval process or after approval may subject us to a variety of administrative or judicial sanctions, any of which could have a material adverse effect on us. These sanctions could include:

- refusal to approve pending applications;
- withdrawal of an approval;
- imposition of a clinical hold;
- warning letters, untitled letters and similar communications;
- product seizures or recalls;
- total or partial suspension of production or distribution; or
- injunctions, fines, restitution, disgorgement of profits or civil or criminal investigations and penalties brought by the FDA and the Department of Justice, or DOJ, or other governmental entities.

The process required by the FDA before a drug may be marketed in the United States generally involves the following:

- completion of preclinical laboratory tests, animal studies and formulation studies conducted according to Good Laboratory Practices or other applicable regulations;
- submission to the FDA of an IND application, which must become effective before human clinical trials may begin;
- approval by an independent institutional review board, or IRB, representing each clinical site before each clinical trial may be initiated;
- performance of adequate and well-controlled human clinical trials to establish the safety and efficacy of the proposed drug for its intended use, conducted in accordance with current Good Clinical Practices, or cGCP, which are ethical and scientific quality standards and FDA requirements for conducting, recording and reporting clinical trials to assure that the rights, safety and well-being of trial participants are protected;
- preparation and submission to the FDA of an NDA;
- satisfactory completion of one or more FDA inspections of the manufacturing facility or facilities at which the product is produced to assess compliance with cGMP, requirements to assure that the facilities, methods and controls are adequate to preserve the drug's safety, identity, strength, quality and purity; and
- FDA review and approval of the NDA.

Once a pharmaceutical candidate is identified for development, it enters the preclinical testing stage. Preclinical tests include laboratory evaluations of product chemistry, toxicity and formulation, as well as animal studies. An IND sponsor must submit the results of the preclinical tests, together with manufacturing information and analytical data, to the FDA as part of the IND. Some preclinical or nonclinical testing may continue even after the IND is submitted. In addition to including the results of the preclinical studies, the IND will also include a protocol detailing, among other things, the objectives of the clinical trial, the parameters to be used in monitoring safety and the effectiveness criteria to be evaluated if the first phase lends itself to an efficacy determination. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA, within the 30-day time period, places the IND on clinical hold. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before clinical trials can begin. A clinical hold may occur at any time during the life of an IND and may affect one or more specific studies or all studies conducted under the IND.

All clinical trials must be conducted under the supervision of one or more qualified investigators in accordance with cGCP. They must be conducted under protocols detailing the objectives of the trial, dosing procedures, subject selection and exclusion criteria and the safety and effectiveness criteria to be evaluated. Each protocol and any amendments must be submitted to the FDA as part of the IND, and progress reports detailing the results of the clinical trials must be submitted at least annually to the FDA and more frequently in other situations, including the occurrence of serious adverse events. An IRB at each institution participating in the clinical trial must review and approve the protocol and any amendments before a clinical trial commences or continues at that institution, approve the information regarding the clinical trial and the informed consent form that must be provided to each trial subject or his or her legal representative, monitor the study until completed and otherwise comply with IRB regulations. Information about certain clinical trials must be submitted within specific timeframes to the National Institutes of Health for public dissemination on their ClinicalTrials.gov website.

Human clinical trials are typically conducted in three sequential phases that may overlap or be combined:

- *Phase 1.* The drug is initially introduced into healthy human subjects and tested for safety, dosage tolerance, absorption, metabolism, distribution and elimination. In the case of some products for severe or life-threatening diseases, such as cancer, especially when the product may be inherently too toxic to ethically administer to healthy volunteers, the initial human testing is often conducted in patients with the target disease or condition.
- *Phase 2.* Clinical trials are initiated in a limited patient population intended to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product for specific targeted diseases and to determine dosage tolerance and optimal dosage.
- *Phase 3.* Clinical trials are undertaken to further evaluate dosage, clinical efficacy and safety in an expanded patient population at geographically dispersed clinical study sites. These studies are intended to establish the overall risk-benefit ratio of the product and provide an adequate basis for regulatory approval and product labeling.

Phase 1, Phase 2 and Phase 3 testing may not be completed successfully within any specified period, if at all. The FDA or the sponsor may suspend or terminate a clinical trial at any time for a variety of reasons, including a finding that the research subjects or patients are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution if the clinical trial is not being conducted in accordance with the IRB's requirements or if the drug has been associated with unexpected serious harm to patients.

During the development of a new drug, sponsors are given opportunities to meet with the FDA at certain points. These points may be prior to submission of an IND, at the end of Phase 2 and before an NDA is submitted. Meetings at other times may be requested. These meetings can provide an opportunity for the sponsor to share information about the data gathered to date, for the FDA to provide advice and for the sponsor and the FDA to reach agreement on the next phase of development. Sponsors typically use the End-of-Phase 2 meeting to discuss their Phase 2 clinical results and present their plans for the pivotal Phase 3 clinical trial that they believe will support approval of the new drug. If this type of discussion occurred, a sponsor may be able to request an SPA agreement, the purpose of which is to reach agreement with the FDA on the design of the Phase 3 clinical trial protocol and analysis that will form the primary basis of an efficacy claim.

According to FDA guidance for industry on the SPA agreement process, a sponsor that meets the prerequisites may make a specific request for a special protocol assessment and provide information regarding the design and size of the proposed clinical trial. The FDA has a goal of evaluating the protocol within 45 days of the request to assess whether the proposed trial is adequate and that evaluation may result in discussions and a request for additional information. An SPA agreement request must be made before the proposed clinical trial begins, and all open issues must be resolved before the clinical trial begins. If an agreement is reached, it will be documented in writing and made part of the record. The agreement may not be changed by the sponsor or the FDA after the trial begins, except with the documented written agreement of the sponsor and the FDA or if the FDA determines that a substantial scientific issue essential to determining the safety or efficacy of the drug was identified after the testing began. Also, if the sponsor makes any unilateral changes to the approved protocol, the agreement will be invalidated. An SPA agreement is intended to provide greater assurance that if the agreed upon clinical trial protocols are followed, the clinical trial endpoints are achieved, and there is a favorable risk-benefit profile, the data may serve as the primary basis for an efficacy claim in support of NDA approval. However, SPA agreements are not a guarantee of an approval of a product candidate or any permissible claims about the product candidate, and final determinations of approvability will not be made until the FDA completes its review of the entire NDA.

The PREA requires a sponsor to conduct pediatric studies for most drugs and biologic, for a new active ingredient, new indication, new dosage form, new dosing regimen or new route of administration. Under PREA, original NDAs, biologics license applications, or BLAs and supplements thereto must contain a pediatric assessment unless the sponsor has received a deferral or waiver. The required assessment must assess the safety and effectiveness of the product for the claimed indications in all relevant pediatric subpopulations and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The sponsor or the FDA may request a deferral of pediatric studies for some or all of the pediatric subpopulations. A deferral may be granted for several reasons, including a finding that the drug or biologic is ready for approval for use in adults before pediatric studies are complete or that additional safety or effectiveness data needs to be collected before the pediatric studies begin. The FDA must send a non-compliance letter to any sponsor that fails to submit the required assessment, keep a deferral current or submit a request for approval of a pediatric formulation. On February 16, 2016 we reached agreement with the FDA on the terms of the pediatric program associated with PREA. The FDA has granted Paratek a waiver from conducting studies with omadacycline in children less than 8 years old and a deferral in conducting studies in children 8 years and older until safety and efficacy is established in adults.

Concurrent with clinical trials, companies usually complete additional animal safety studies and must also develop additional information about the chemistry and physical characteristics of the drug and finalize a process for manufacturing the product in accordance with cGMP requirements. The manufacturing process must be capable of consistently producing quality batches of the drug candidate and the manufacturer must develop methods for testing the quality, purity and potency of the final drugs. Additionally, appropriate packaging must be selected and tested and stability studies must be conducted to demonstrate that the drug candidate does not undergo unacceptable deterioration over its shelf-life.

The results of product development, preclinical studies and clinical trials, along with descriptions of the manufacturing process, analytical tests conducted on the chemistry of the drug, proposed labeling and other relevant information are submitted to the FDA as part of an NDA requesting approval to market the product for one or more indications. The submission of an NDA is subject to the payment of user fees, but a waiver of such fees may be obtained under specified circumstances. The FDA reviews all NDAs submitted to ensure that they are sufficiently complete for substantive review before it accepts them for filing. It may request additional information rather than accept an NDA for filing. In this event, the NDA must be resubmitted with the additional information. The resubmitted application also is subject to review before the FDA accepts it for filing.

Once the submission is accepted for filing, the FDA begins an in-depth review. NDAs receive either standard or priority review. A drug representing a significant improvement in treatment, prevention or diagnosis of disease may receive priority review. The FDA has agreed to specified performance goals in the review process of NDAs. Under that agreement, 90% of applications seeking approval of New Molecular Entities, or NMEs, are meant to be reviewed within ten months from the date on which FDA accepts the NDA for filing, and 90% of applications for NMEs that have been designated for "priority review" are meant to be reviewed within six months of the filing date. For applications seeking approval of drugs that are not NMEs, the ten-month and six-month review periods run from the date that FDA receives the application. The review process may be extended by the FDA for three additional months to consider new information or clarification provided by the applicant to address an outstanding deficiency identified by the FDA following the original submission.

The FDA reviews an NDA to determine, among other things, whether a product is safe and effective for its intended use and whether its manufacturing complies with cGMP requirements to assure and preserve the product's safety, identity, strength, quality and purity. The FDA may refer the NDA to an advisory committee for review and recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendation of an advisory committee, but it generally follows such recommendation.

Before approving an NDA, the FDA will typically inspect the facility or facilities where the product is manufactured and tested. These pre-approval inspections cover all facilities associated with NDA submission, including drug component manufacturing (such as active pharmaceutical ingredients), finished drug product manufacturing, and control testing laboratories. Additionally, before approving an NDA, the FDA will typically inspect one or more clinical sites to assure compliance with cGCP. In addition, the FDA may require, as a condition of approval, Risk Evaluation and Mitigation Strategies, or REMS, restricted distribution and use, enhanced labeling, special packaging or labeling, expedited reporting of certain adverse events, pre-approval of promotional materials, restrictions on direct-to-consumer advertising or commitments to conduct additional research post-approval.

On the basis of the FDA's evaluation of the NDA and accompanying information, the FDA may issue an approval letter or a complete response letter. An approval letter authorizes commercial marketing of the product with specific prescribing information for specific indications. The FDA may refuse to approve an NDA if the applicable regulatory criteria are not satisfied or may require additional clinical or other data. Even if such data are submitted, the FDA may ultimately decide that the NDA does not satisfy the criteria for approval and issue a complete response letter to indicate that the agency will not approve the NDA in its present form. The complete response letter usually describes all of the specific deficiencies in the NDA identified by the FDA. If a complete response letter is issued, the applicant may either resubmit the NDA, addressing all of the deficiencies identified in the letter, or withdraw the application.

Expedited Review and Approval

The FDA has various programs, including Fast Track and priority review, which are intended to expedite or simplify the process for reviewing drugs. Even if a drug qualifies for one or more of these programs, the FDA may later decide that the drug no longer meets the conditions for qualification or that the time period for FDA review or approval will not be shortened. Generally, drugs that may be eligible for these programs are those for serious or life-threatening conditions, those with the potential to address unmet medical needs and those that offer meaningful benefits over existing treatments. For example, Fast Track is a process designed to facilitate the development and expedite the review of drugs to treat serious diseases and fill an unmet medical need. Priority review is designed to give drugs that offer major advances in treatment, or provide a treatment where no adequate therapy exists, an expedited review within six months as compared to a standard review time of ten months for a standard new molecular entity NDA. Although Fast Track and priority review do not affect the standards for approval, the FDA will attempt to facilitate early and frequent meetings with a sponsor of a Fast Track-designated drug and expedite review of the application for a drug designated for priority review.

The GAIN Act is intended to provide incentives for the development of new QIDPs. A new drug that is designated as a QIDP after a request by the sponsor that is made before an NDA is submitted will be eligible, if approved, for an additional five years of exclusivity beyond any period of exclusivity to which it would have previously been eligible. In addition, a QIDP will receive priority review and qualify for a Fast Track designation. QIDPs are defined as antibacterial or antifungal drugs intended to treat serious or life-threatening infections that are resistant to treatment, or that treat qualifying resistant pathogens identified by the FDA. Examples of pathogens that may be designated as a qualifying pathogen include MRSA, vancomycin-resistant *Enterococcus* and multi-drug resistant gram-negative bacteria. Omadacycline (both IV and oral formulations) has been designated as a QIDP for cUTI, ABSSSI and CABP.

Beyond GAIN Act

In addition to the GAIN Act, the United States Congress has initiated a significant number of legislative proposals to provide further incentives in anti-infective development. Such legislation includes the following:

- The Antibiotic Development to Advance Patient Treatment Act of 2013, or ADAPT Act, was introduced in July 2014 to provide an accelerated antibiotic development pathway;
- The Developing an Innovative Strategy for Antimicrobial Resistant Microorganisms Act of 2014, or DISARM Act, was introduced in January 2015 to provide a new antibiotics reimbursement framework; and
- The 21st Century Cures Act, signed into law in December 2016, established a new FDA limited population pathway for antimicrobial drugs that treat serious or life-threatening infections for which there are unmet medical needs.

Patent Term Restoration and Data Exclusivity

Depending upon the timing, duration and specifics of FDA approval of the use of our drugs, some of our U.S. patents may be eligible for limited patent term extension under the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent restoration term of up to five years for a patent covering an approved product as compensation for patent term lost during product development and the FDA regulatory review process. However, patent term restoration cannot extend the remaining term of a patent beyond a total of 14 years from the product's approval date. The patent term restoration period is generally one-half the time between the effective date of an IND, and the submission date of an NDA, plus the time between the submission date of an NDA and the approval of that application. Only one patent applicable to an approved drug is eligible for the extension, and the extension must be applied for prior to expiration of the patent and within applicable deadlines. The U.S. Patent and Trademark Office, or the USPTO, in consultation with the FDA, reviews and approves the application for any patent term extension or restoration. In the future, we intend to apply for restoration of patent term for omadacycline beyond its current composition of matter expiration date, depending on the expected length of clinical trials and other factors involved in the submission of the omadacycline NDA.

Data exclusivity provisions under the FDCA also can delay the submission or the approval of certain applications. The FDCA provides a five-year period of non-patent data exclusivity within the United States to the first applicant to gain approval of an NDA for a new chemical entity. A drug is a new chemical entity if the FDA has not previously approved any other new drug containing the same active moiety, which is the molecule or ion responsible for the action of the drug substance. During the exclusivity period, the FDA may not accept for review an Abbreviated New Drug Application, or ANDA, or a 505(b)(2) NDA submitted by another company for another version of such drug where the applicant does not own or have a legal right of reference to all the data required for approval. However, an application may be submitted after four years if it contains a certification of patent invalidity or non-infringement. The FDCA also provides three years of data exclusivity for an NDA, 505(b) (2) NDA or supplement to an existing NDA if new clinical investigations, other than bioavailability studies, that were conducted or sponsored by the applicant are deemed by the FDA to be essential to the approval of the application, for example, for new indications, dosages or strengths of an existing drug. This three-year exclusivity covers only the conditions associated with the new clinical investigations and does not prohibit the FDA from approving ANDAs for drugs containing the original active agent. Five-year and three-year exclusivity will not delay the submission or approval of a full NDA. However, an applicant submitting a full NDA would be required to conduct or obtain a right of reference to all of the preclinical studies and adequate and well-controlled clinical trials necessary to demonstrate safety and effectiveness.

Pediatric Exclusivity

The Best Pharmaceuticals for Children Act provides for an additional six months of exclusivity, which is added on to patent and exclusivity periods in effect at the time the pediatric exclusivity aware is granted, if a sponsor conducts clinical trials in children in response to a written request from the FDA, or a Written Request. If the Written Request does not include studies in neonates, the FDA is required to include its rationale for not requesting those studies. The FDA may request studies on approved indications in separate Written Requests. The issuance of a Written Request does not require the sponsor to undertake the described studies. To date, we have not received any Written Requests.

Post-approval Requirements

Once an approval is granted, the FDA may withdraw the approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product may result in restrictions on the product or even complete withdrawal of the product from the market. After approval, some types of changes to the approved product, such as adding new indications, manufacturing changes and additional labeling claims, are subject to further FDA review and approval. In addition, the FDA may require testing and surveillance programs to monitor the effect of approved products that have been commercialized, and the FDA has the power to prevent or limit further marketing of a product based on the results of these post-marketing programs. The FDA and other authorities also strictly regulate the promotional claims that may be made about prescription products, and our product labeling, advertising, and promotion will be subject to continuing regulatory review. If approved, physicians nevertheless may prescribe our products to their patients in a manner that is inconsistent with the approved label or that is off-label. Positive clinical trial results for any approved products that are also subject to further review for additional indications increase the risk that the approved product may be used off-label. If we are found to have promoted off-label uses, we may be subject to significant liability, including sanctions, civil and criminal fines, and injunctions prohibiting us from engaging in specified promotional conduct.

Moreover, any drug products manufactured or distributed pursuant to FDA approvals are subject to continuing regulation by the FDA, including, among other things:

- record-keeping requirements;
- reporting of adverse experiences with the drug;
- providing the FDA with updated safety and efficacy information;
- drug sampling and distribution requirements;
- notifying the FDA and gaining its approval of specified manufacturing or labeling changes;
- complying with certain electronic records and signature requirements; and
- complying with FDA promotion and advertising requirements.

Drug manufacturers and other entities involved in the manufacture and distribution of approved drugs are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and some state agencies for compliance with cGMP requirements and other laws.

From time to time, legislation is drafted, introduced and passed in Congress that could significantly change the statutory provisions governing the approval, manufacturing and marketing of products regulated by the FDA. In addition, FDA regulations and guidance are often revised or reinterpreted by the agency in ways that may significantly affect our business and our products. It is impossible to predict whether legislative changes will be enacted, or FDA regulations, guidance or interpretations changed or what the impact of such changes, if any, may be.

Other Healthcare Laws

We may be subject to additional healthcare regulation and enforcement by the federal government and by authorities in the states and foreign jurisdictions in which we conduct our business. Such laws include, without limitation, state and federal anti-kickback, false claims, false statements, civil monetary penalties, privacy and security and physician payment transparency laws.

The number and complexity of both federal and state laws continues to increase, and additional governmental resources are being added to enforce these laws and to prosecute companies and individuals who are believed to be violating them. While it is too early to predict what effect these changes will have on our business, we anticipate that government scrutiny of pharmaceutical sales and marketing practices will continue for the foreseeable future and subject us to the risk of government investigations and enforcement actions. If our operations are found to be in violation of any of such laws or any other governmental regulations that apply to us, we may be subject to penalties, including, without limitation, administrative, civil and criminal penalties, damages, fines, the curtailment or restructuring of our operations, exclusion from participation in federal and state healthcare programs and imprisonment, any of which could adversely affect our ability to operate our business and financial results.

Foreign Regulation

In addition to regulations in the United States, we will be subject to a variety of foreign regulations governing clinical trials and commercial sales and distribution of our products. Whether or not we obtain FDA approval for a product, we must obtain approval by the comparable regulatory authorities of foreign countries or economic areas, such as the European Union, before we may commence clinical trials or market products in those countries or areas. The approval process and requirements governing the conduct of clinical trials, product licensing, pricing and reimbursement vary greatly from place to place, and the time may be longer or shorter than that required for FDA approval.

Under European Union regulatory systems, a company may submit marketing authorization applications under the centralized, decentralized or mutual recognition procedures, or under the purely national route of approval. The centralized procedure is compulsory for medicinal products produced by biotechnology or those medicinal products containing new active substances for specific indications such as the treatment of AIDS, cancer, neurodegenerative disorders, diabetes, viral diseases, and designated orphan medicines, and is optional for other medicines that are highly innovative. Under the centralized procedure, a marketing application is submitted to the EMA, where it will be evaluated by the relevant scientific committee, in most cases the Committee for Medicinal Products for Human Use, and a favorable opinion typically results in the grant by the European Commission of a single marketing authorization that is valid for all European Union member states and, by extension (after national implementing measures), in Norway, Iceland and Liechtenstein. In general, an initial marketing authorization is valid for five years, but once renewed is usually valid for an unlimited period. The decentralized procedure allows marketing authorization applications to be submitted simultaneously in two or more EU member states, whereas the mutual recognition procedure must be used if the product has already been authorized in at least one other EU member state. Both the decentralized and mutual recognition procedures provide for approval by one or more "concerned" member states based on an assessment of an application performed by one-member state, known as the "reference" member state. Under the decentralized approval procedure, an applicant submits an application, or dossier, and related materials to the reference member state and concerned member states. The reference member state prepares a draft assessment and drafts of the related materials within 120 days after receipt of a valid application. Within 90 days of receiving the reference member state's assessment report, each concerned member state must approve the assessment report and related materials, unless they identify a serious risk to public health. Under the mutual recognition procedure, the concerned member states have the same 90-day period to recognize the marketing authorization in the reference member state. In either case, concerns about serious risks to public health escalate through the relevant EMA scientific committees, and the disputed points may eventually result in a consensus opinion from the Committee for Medicinal Products for Human Use that is referred to the European Commission, whose decision is binding on all member states. The purely national procedure results in a marketing authorization in a single EU member state.

In light of the United Kingdom's vote in 2016 to leave the European Union, the so-called Brexit vote, there may be changes forthcoming in the scope of the EU marketing authorization approval procedure, as well as changes to the UK's national medicines laws, as the terms of that exit are negotiated between the United Kingdom and the European Union.

Coverage and Reimbursement

Significant uncertainty exists regarding the coverage and reimbursement status of products approved by the FDA and other government authorities. Sales of our products will depend, in part, on the extent to which our products will be covered by third-party payors, such as government health programs, commercial insurance and managed healthcare organizations. The process for determining whether a third-party payor will provide coverage for a drug product typically is separate from the process for setting the price of a drug product or for establishing the reimbursement rate that the payor will pay for the drug product once coverage is approved. Third-party payors may limit coverage to specific drug products on an approved list, also known as a formulary, which might not include all of the FDA-approved drugs for a particular indication. A decision by a third-party payor not to cover Intermezzo or our product candidates could reduce physician utilization of our products once approved. Moreover, a third-party payor's decision to provide coverage for a drug product does not imply that an adequate reimbursement rate will be approved. Adequate third-party reimbursement may not be available to enable us to maintain price levels sufficient to realize an appropriate return on our investment in product development. Additionally, coverage and reimbursement for drug products can differ significantly from payor to payor. One third-party payor's decision to cover a particular drug product or service does not ensure that other payors will also provide coverage for the medical product or service, or will provide coverage at an adequate reimbursement rate. As a result, the coverage determination process will require us to provide scientific and clinical support for the use of our products to each payor separately and will be a time-consuming process.

These third-party payors are increasingly reducing reimbursements for medical products and services. Additionally, the containment of healthcare costs has become a priority of federal and state governments, and the prices of drugs have been a focus in this effort. The U.S. government, state legislatures and foreign governments have shown significant interest in implementing cost-containment programs, including price controls, restrictions on reimbursement and requirements for substitution of generic products. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit our net revenue and results. Decreases in third-party reimbursement for our product candidates or a decision by a third-party payor to not cover our product candidates could reduce physician usage of the product candidate and have a material adverse effect on our sales, results of operations and financial condition. We expect that the pharmaceutical industry will experience pricing pressures due to the increasing influence of managed care (and related implementation of managed care strategies to control utilization), additional federal and state legislative and regulatory proposals to regulate pricing of drugs, limit coverage of drugs or reduce reimbursement for drugs, public scrutiny and the Trump administration's agenda to control the price of pharmaceuticals through government negotiations of drug prices in Medicare Part D and importation of cheaper products from abroad. While we cannot predict what executive, legislative and regulatory proposals will be adopted or other actions will occur, such events could have a material adverse effect on our business, financial condition and profitability.

In addition, in some foreign countries, the proposed pricing for a drug must be approved before it may be lawfully marketed. The requirements governing drug pricing vary widely from country to country. For example, the European Union provides options for its member states to restrict the range of medicinal products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. A member state may approve a specific price for the medicinal product or it may instead adopt a system of direct or indirect controls on the profitability of the company placing the medicinal product on the market. There can be no assurance that any country that has price controls or reimbursement limitations for pharmaceutical products will allow favorable reimbursement and pricing arrangements for any of our products. Historically, products launched in the European Union do not follow price structures of the United States and generally tend to be significantly lower.

Health Care Reform

In the United States, there have been and continue to be a number of significant legislative initiatives to contain healthcare costs. The Medicare Prescription Drug, Improvement, and Modernization Act of 2003, or MMA, established the Part D to provide a voluntary prescription drug benefit to Medicare beneficiaries. Under Part D, Medicare beneficiaries may enroll in prescription drug plans offered by private entities that will provide coverage of certain outpatient prescription drugs. Unlike the Medicare Part A and Part B programs, Part D coverage is not standardized. Part D prescription drug plan sponsors are not required to pay for all covered Part D drugs, and each drug plan can develop its own drug formulary that identifies which drugs it will cover and at what tier or level. However, Part D prescription drug formularies must include drugs within each therapeutic category and class of covered Part D drugs, though not necessarily all the drugs in each category or class. Any formulary used by a Part D prescription drug plan must be developed and reviewed by a pharmacy and therapeutic committee. Government payment for some of the costs of prescription drugs may increase demand for products for which we receive marketing approval. However, any negotiated prices for Intermezzo or our products covered by a Part D prescription drug plan will likely be lower than the prices we might otherwise obtain. Alternatively, Medicare beneficiaries may obtain prescription drug coverage under a Medicare Advantage plan, administered by a commercial health plan under a contract with the Centers for Medicare & Medicaid Services, or CMS. Moreover, while the MMA applies only to drug benefits for Medicare beneficiaries, private payors often follow Medicare coverage policy and payment limitations in setting their own

payment rates. Any reduction in payment that results from the MMA may result in a similar reduction in payments from non-governmental payors.

The American Recovery and Reinvestment Act of 2009 provided funding for the federal government to compare the effectiveness of different treatments for the same illness. A plan for the research is developed by the U.S. Department of Health & Human Services, the Agency for Healthcare Research and Quality and the National Institutes for Health, and periodic reports on the status of the research and related expenditures are made to Congress. Although the results of the comparative effectiveness studies are not intended to mandate coverage policies for public or private payors, it is not clear what effect, if any, the research will have on the sales of our product candidates if any such products or the conditions that they are intended to treat are the subject of a study. It is also possible that comparative effectiveness research demonstrating benefits in a competitor's product could adversely affect the sales of Intermezzo or our product candidates. If third-party payors do not consider our products to be cost-effective compared to other available therapies, they may not cover our products after approval as a benefit under their plans or, if they do, the level of payment may not be sufficient to allow us to sell our products on a profitable basis.

The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, or collectively, the ACA, continues to have a significant impact on the healthcare industry. The ACA requires certain manufacturers to disclose their financial relationships with physicians (and their family members) and teaching hospitals and expands coverage for the uninsured while at the same time containing overall healthcare costs. With regard to pharmaceutical products, among other things, the ACA expanded and increased industry rebates for drugs covered under Medicaid programs and made changes to the coverage requirements under Part D.

Modifications to or repeal of all or certain provisions of the ACA are expected as a result of the outcome of the recent presidential election and Republicans maintaining control of Congress, consistent with statements made by Donald Trump and members of Congress during the presidential campaign and following the election. We cannot predict the ultimate content, timing or effect of any changes to the ACA or other federal and state reform efforts. There is no assurance that federal or state health care reform will not adversely affect our business and financial results, and we cannot predict how future federal or state legislative, judicial or administrative changes relating to healthcare reform will affect our business.

Other legislative changes have been proposed and adopted in the United States since ACA was enacted. In August 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This included aggregate reductions of Medicare payments to providers of 2% per fiscal year, which went into effect in April 2013 and, due to legislative amendments, will remain in effect through 2024 unless additional Congressional action is taken. In addition, the American Taxpayer Relief Act of 2012 further reduced Medicare payments to several categories of healthcare providers and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

Employees

As of February 28, 2017, we had 50 total employees, 48 of whom are full-time employees, 24 of whom were primarily engaged in research and development activities. A total of 8 employees have an M.D. or Ph.D. degree. None of our employees are represented by a labor union, and we consider our employee relations to be good.

Financial and Segment Information

We operate our business as a single segment, as defined by generally accepted accounting principles. Our financial information is included in the consolidated financial statements and the related notes.

Available Information

We are a reporting company under the Securities Exchange Act of 1934, as amended, or the Exchange Act, and file reports, proxy statements and other information with the Securities and Exchange Commission, or the SEC. The public may read and copy any of our filings at the SEC's Public Reference Room at 100 F Street N.E., Washington, D.C. 20549. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. Because we make filings with the SEC electronically, you may access this information at the SEC's Internet site: www.sec.gov. This site contains reports, proxies and information statements and other information regarding issuers that file electronically with the SEC.

Our internet web site address is *www.paratekpharma.com*. We make available, free of charge at the "Investors" portion of our web site, annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those

reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. Reports of beneficial ownership filed pursuant to Section 16(a) of the Exchange Act are also available on our web site. Information in, or that can be accessed through, this web site is not part of this Annual Report on Form 10-K.

Item 1A. Risk Factors

Investing in our common stock involves a high degree of risk. You should carefully consider the risks and uncertainties described below and all information contained in this report before you decide to purchase our common stock. If any of the possible adverse events described below actually occurs, we may be unable to conduct our business as currently planned and our financial condition and operating results could be harmed. In addition, the trading price of our common stock could decline due to the occurrence of any of the events described below, and you may lose all or part of your investment. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also impair our business.

Risk Related to Financial Condition

We have incurred significant losses since inception and anticipate that we will incur losses for the foreseeable future. We have no products approved for commercial sale, and to date we have not generated any revenue or profit from product sales. We may never achieve or sustain profitability.

We are a clinical stage biopharmaceutical company and we have not generated any revenue or profit from product sales. We have not yet submitted any product candidates for approval by regulatory authorities, and we do not currently have rights to any products that have been approved for marketing in any territory. Our net loss for the year ended December 31, 2016 was $111.6 million. As of December 31, 2016, our accumulated deficit was $380.4 million. We expect to continue to incur losses for the foreseeable future as we continue our clinical development of, and seek regulatory approvals for, our product candidates, prepare to commercialize any approved products and add infrastructure and personnel to support our product development efforts and operations. The net losses and negative operating cash flows incurred to date, together with expected future losses, have had, and likely will continue to have, an adverse effect on our stockholders' equity and working capital. The amount of future net losses will depend, in part, on the rate of future growth of our expenses and our ability to generate revenue.

Because of the numerous risks and uncertainties associated with pharmaceutical product development, we are unable to accurately predict the timing or amount of increased expenses or when, or if, we will be able to generate any revenues or achieve profitability. For example, our expenses could increase if we are required by the FDA, or other regulatory agencies outside the United States, to perform studies in addition to those that we currently expect to perform, or if there are any delays in completing our currently planned clinical trials or in the development of any of our product candidates.

To become and remain profitable, we must succeed in developing and commercializing products with significant market potential. This will require us to be successful in a range of challenging activities for which we are only in the pre-registration, pre-clinical and clinical stages, including developing product candidates, obtaining regulatory approval for them and manufacturing, marketing and commercializing approved products. We may never succeed in these activities and may never generate revenue from product sales that is significant enough to achieve profitability. Even if we achieve profitability in the future, we may not be able to sustain profitability in subsequent periods. Our failure to become or remain profitable would depress the market value of our common stock, could impair our ability to raise capital, expand our business, develop other product candidates or continue our operations and could cause investors to lose all or part of their investments.

We will require substantial additional funding, which may not be available to us on acceptable terms, or at all, and, if not available, may require us to delay, scale back or cease our product development programs or operations.

As of December 31, 2016, our cash, cash equivalents and marketable securities were $128.0 million. We believe we will expend substantial resources advancing our lead product candidate, omadacycline, through clinical development, and we may, in the future, expend additional resources to advance other product candidates into clinical development. Developing pharmaceutical products, including conducting preclinical studies and clinical trials, is expensive. We currently plan to seek regulatory approval of omadacycline in two indications. In order to obtain such regulatory approval, we will require additional funding to complete the registration and commercialization of these two indications, fund the development of omadacycline in other indications, initiate commercialization of omadacycline, and to continue to advance the development of our other product candidates, and such funding may not be available on favorable terms or at all. Although it is difficult to predict our liquidity requirements, based upon our current operating plan, we anticipate that our existing cash, cash equivalents and marketable securities will enable us to fund our operating expenses and capital expenditure requirements through the first half of 2018. Because successful development of our product

candidates is uncertain, we are unable to estimate the actual funds we will require to complete research and development and to commercialize our product candidates.

Our future funding requirements will depend on many factors, including but not limited to:

- the progress of clinical development of omadacycline;
- the scope, progress, timing, cost and results of research, preclinical development and clinical trials;
- the costs, timing and outcome of seeking and obtaining FDA and non-U.S. regulatory approvals;
- the costs associated with manufacturing and establishing sales, marketing and distribution capabilities;
- the number and characteristics of other product candidates that we may pursue; our ability to maintain, expand and defend the scope of our intellectual property portfolio, including the amount and timing of any payments we may be required to make in connection with the licensing, filing, defense and enforcement of any patents or other intellectual property rights;
- our need to hire additional management, scientific, operations and medical personnel;
- the effect of competing products that may limit market penetration of our product candidates;
- our need to implement additional internal systems and infrastructure, including financial and reporting systems; and
- the economic and other terms, timing and success of our existing licensing arrangements and any collaboration, licensing, or other arrangements into which we may enter in the future, including the timing of receipt of any milestone or royalty payments under these agreements.

Until we generate a sufficient amount of product revenue to finance our cash requirements, which we may never do, we expect to finance future cash needs primarily through a combination of public or private equity offerings, debt or other structured financings, strategic collaborations and grant funding. There can be no assurance that we would be successful in securing additional funds on acceptable terms. If additional funds are not available, we may be forced to cease operations, significantly reduce operating expenses or delay, curtail or eliminate one or more of our development programs or our business operations.

Raising additional capital may cause dilution to our stockholders, restrict our operations or require us to relinquish rights.

Until such time, if ever, as we can generate substantial product revenue, we expect to finance our cash needs through the sale of equity or convertible debt securities, which would dilute shareholder ownership interest. Additionally, the terms of these new securities may include liquidation or other preferences that adversely affect shareholders' rights as common stockholders. Debt financing, if available at all, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we raise additional funds through collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, product candidates or future revenue streams or grant licenses on terms that are not favorable to us. We cannot assure you that we will be able to obtain additional funding if and when necessary. If we are unable to obtain adequate financing on a timely basis, we could be required to grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

Our level of indebtedness and debt service obligations could adversely affect our financial condition, and may make it more difficult for us to fund our operations.

In September 2015, we entered into a Loan and Security Agreement, or the Loan Agreement, with Hercules Technology II, L.P., Hercules Technology III, L.P., or together, Hercules, certain other lenders, and Hercules Technology Growth Capital, Inc. (as agent). Under the Loan Agreement, Hercules will provide access to term loans with an aggregate principal amount of up to $40.0 million, or collectively, the Term Loan. We initially drew a principal amount of $20.0 million on September 30, 2015. On December 12, 2016, we entered into an amendment, or the Loan Agreement Amendment, to the Loan Agreement. The Loan Agreement Amendment increased the amount that we may borrow by $10.0 million, from up to $40.0 million to up to $50.0 million, in multiple tranches. The additional $10.0 million tranche, or the Additional Tranche, is available at our option through September 15, 2017, but conditioned upon the completion of either a second Phase 3 clinical evaluation of omadacycline in patients with ABSSSI or in patients with CABP that is supportive of us making a NDA filing with the FDA. If drawn, the Additional Tranche shall bear interest and have the same maturity as all other loans outstanding under the Loan Agreement. Concurrently with the closing of the Loan Agreement Amendment, we borrowed an additional $20.0 million under the Loan Agreement

All obligations under the Loan Agreement and Loan Agreement Amendment are secured by substantially all of our existing property and assets, excluding our intellectual property. This indebtedness may create additional financing risk for us, particularly if

our business or prevailing financial market conditions are not conducive to paying off or refinancing our outstanding debt obligations at maturity. This indebtedness could also have important negative consequences, including:

- we will need to repay our indebtedness by making payments of interest and principal, which will reduce the amount of money available to finance our operations, our research and development efforts and other general corporate activities; and
- our failure to comply with the restrictive covenants in the Loan Agreement and Loan Agreement Amendment could result in an event of default that, if not cured or waived, would accelerate our obligation to repay this indebtedness, and Hercules could seek to enforce its security interest in the assets securing such indebtedness.

To the extent additional debt is added to our current debt levels, the risks described above could increase.

We may not have cash available to us in an amount sufficient to enable us to make interest or principal payments on our indebtedness when due.

Failure to satisfy our current and future debt obligations under the Loan Agreement and Loan Agreement Amendment could result in an event of default and, as a result, Hercules could accelerate all of the amounts due. In the event of an acceleration of amounts due under the Loan Agreement and Loan Agreement Amendment as a result of an event of default, we may not have sufficient funds or may be unable to arrange for additional financing to repay our indebtedness. In addition, Hercules could seek to enforce its security interests in the assets securing such indebtedness.

We are subject to certain restrictive covenants which, if breached, could have a material adverse effect on our business and prospects.

The Loan Agreement and Loan Agreement Amendment imposes operating and other restrictions on us. Such restrictions will affect, and in many respects limit or prohibit, our ability and the ability of any future subsidiary to, among other things:

- dispose of certain assets;
- change our lines of business;
- engage in mergers or consolidations;
- incur additional indebtedness;
- create liens on assets;
- pay dividends and make distributions or repurchase our capital stock; and
- engage in certain transactions with affiliates.

Risks Related to Regulatory Review and Approval of Our Product Candidates

If we fail to obtain FDA approval of and to commercialize our most advanced product candidate, omadacycline, our business would be materially harmed.

We have invested a significant portion of our time, financial resources and collaboration efforts in the development of our most advanced product candidate, omadacycline. Accordingly, our ability to generate revenue and our future success depend substantially on our ability to successfully obtain regulatory approval for and commercialize omadacycline. In order to successfully obtain regulatory approval for omadacycline, we conducted one Phase 3 clinical study in ABSSSI, which was completed in June 2016. We are also currently conducting one Phase 3 clinical study in oral-only ABSSSI and one in CABP, which we initiated dosing in August 2016 and November 2015, respectively. Prior to the FDA's issuance of guidance in March 2010 for clinical trials of antibiotics for the treatment of serious bacterial skin infections, the initial disease indication we were targeting was cSSSI, which was revised as a result of the FDA's guidance to be ABSSSI.

Except for our collaboration with Allergan for our product candidate, sarecycline, we are not currently developing any of the other product candidates in our portfolio.

Product candidates in later stages of clinical trials may fail to show the desired safety and efficacy despite having progressed through preclinical studies and initial clinical trials. If we are unable to obtain FDA approval for and successfully commercialize omadacycline for ABSSSI, CABP or any other indication, we may never realize revenue from our most advanced product candidate. As a result, our business, financial condition and results of operations would be materially harmed.

Although we have obtained SPA agreements for our Phase 3 clinical trials of omadacycline, these SPA agreements do not guarantee any particular outcome from regulatory review of these trials of omadacycline.

Although we have SPA agreements with the FDA with respect to our Phase 3 clinical trial designs for omadacycline in both ABSSSI and CABP, SPA agreements are not a guarantee of approval of a product candidate or any permissible claims about the product candidate, and final determinations of approvability will not be made until the FDA completes its review of the entire NDA. Therefore, even if all the conditions of our SPA agreements appear to be met, we cannot predict whether the FDA will interpret the data and results in the same way that we do, nor whether the agency will ultimately approve omadacycline for the treatment of ABSSSI and/or CABP. In addition, the FDA is afforded the ability to modify and ignore a SPA agreement, in light of other factors not necessarily related to omadacycline.

If clinical trials for our product candidate, omadacycline, are prolonged, delayed or stopped, we may be unable to obtain regulatory approval and commercialize omadacycline on a timely basis, which would require us to incur additional costs, raise additional capital and delay our receipt of any product revenue.

We completed the clinical trial of omadacycline for the treatment of ABSSSI in June 2016 and are currently conducting a Phase 3 study in CABP. We expect to report top-line data for CABP during the early second quarter of 2017. We are also conducting a Phase 3 study of oral-only omadacycline in the treatment of ABSSSI, which began in August 2016. Should at least two of the ongoing Phase 3 clinical trials successfully meet their endpoints, we plan on submitting an NDA for omadacycline for the treatment of ABSSSI and/or CABP in the first half of 2018. However, we do not know whether the remaining clinical trials will be completed on schedule, if at all. The commencement of these planned clinical trials could be substantially delayed or prevented by several factors, including:

- delay or failure to obtain sufficient supplies of the product candidate for our clinical trials;
- delay or failure to obtain sufficient supplies of the comparator antibiotic for our clinical trials;
- changes in the regulatory guidance for development in ABSSSI and CABP by the FDA or other regulatory agencies regarding the scope or design of our clinical trials;
- the limited number of, and competition for, suitable sites to conduct our clinical trials, many of which may already be engaged in other clinical trial programs, including some that may be for the same indication as our product candidates;
- any delay or failure to obtain regulatory approval or agreement to commence a clinical trial in any of the countries where enrollment is planned;
- clinical holds on, or other regulatory objections to, a new or ongoing clinical trial;
- delay or failure to reach agreement on acceptable clinical trial agreement terms or clinical trial protocols with prospective sites or clinical research organizations, or CROs, or local regulatory authorities, the terms of which can be subject to extensive negotiation and may vary significantly among different sites or CROs; and
- delay or failure to obtain IRB/ethics committee approval to conduct a clinical trial at a prospective site or within a specific region or country.

The completion of our clinical trials could also be substantially delayed or prevented by several factors, including:

- slower than expected rates of patient recruitment and enrollment;
- failure of patients to complete the clinical trial;
- unforeseen safety issues, including severe or unexpected drug-related adverse effects experienced by patients;
- lack of omadacycline efficacy evidenced during clinical trials;
- termination of our clinical trials by one or more clinical trial sites;
- inability or unwillingness of patients or clinical investigators to follow our clinical trial protocols;
- inability to monitor patients adequately during or after treatment by us and/or our CROs;
- the need to repeat or terminate clinical trials as a result of inconclusive or negative results or unforeseen complications during clinical trial testing;
- delay or failure to obtain sufficient supplies of the product candidate for our clinical trials; and
- delay or failure to obtain sufficient supplies of the comparator antibiotic for our clinical trials.

In particular, our ability to enroll patients in our clinical trials in sufficient numbers and on a timely basis will be subject to a number of factors, including the size of the patient population needed, the nature of the protocol, the proximity of patients to clinical sites, the severity of the pneumonia season, the availability of effective treatments for the relevant indication and the eligibility criteria for the clinical trial. For example, in the Phase 3 clinical trials of omadacycline in ABSSSI and CABP patients who have previously taken potentially effective antibiotics for the treatment of an infection within 72 hours of receiving the first dose of study medication will be excluded from the ABSSSI clinical trial and limited to no more than 25% of the total enrollment for the CABP clinical trial. Depending upon a region's or a clinical site's standard of care for the administration of antibiotics, this could affect our ability to enroll patients in these clinical trials in a timely fashion. Also, our enrollment of our CABP clinical trial may be impacted by the severity of the pneumonia season.

Changes in regulatory requirements and guidance may also occur, and we may need to amend clinical trial protocols to reflect these changes with appropriate regulatory authorities. Amendments may require us to resubmit clinical trial protocols to regulatory agencies/IRBs/ethics committees for re-examination, which may impact the costs, timing or successful completion of a clinical trial. For example, we stopped our previous Phase 3 clinical trial of omadacycline after the FDA notified us that its guidance relating to the conduct of studies in cSSSI would be modified to change the eligibility criteria, revise the disease indication from cSSSI to ABSSSI and change the primary efficacy endpoint for clinical trials in this indication from a TOC assessment to an ECR assessment. As a result of these changes, we chose to terminate enrollment in the previous Phase 3 clinical trial and, following discussion with the FDA, design two new Phase 3 clinical trials, one for ABSSSI and one for CABP, taking into account the revised FDA regulatory guidance. Our clinical trials may be suspended or terminated at any time by the FDA, other regulatory authorities, the IRB overseeing the clinical trial at issue, any of our clinical trial sites with respect to that site or us due to a number of factors, including:

- failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols;
- unforeseen safety issues or any determination that a clinical trial presents unacceptable health risks;
- lack of adequate funding to continue the clinical trial due to unforeseen costs or other business decisions; and
- upon a breach or pursuant to the terms of any agreement with, or for any other reason by, current or future collaborators that have responsibility for the clinical development of any of our product candidates.

In addition, clinical practices vary globally, and there is a lack of harmonization among the guidance provided by various regulatory bodies of different regions and countries with respect to the data that is required to receive marketing approval, which makes designing global trials increasingly complex. Differing regulatory approval requirements in different countries also make it more difficult for us to conduct unified global trials, which can lead to increased development costs and marketing delays or non-viability of our clinical trials. The approval procedure and the time required to obtain approval also varies among countries. Furthermore, regulatory agencies may have varying interpretations of the same data, and approval by one regulatory authority does not ensure approval by regulatory authorities in other jurisdictions.

Any failure or significant delay in completing clinical trials for our product candidates would adversely affect our ability to obtain regulatory approval and our commercial prospects and ability to generate product revenue will be diminished.

The results of previous clinical trials may not be predictive of future results, and the results of our current and planned clinical trials may not satisfy the requirements of the FDA or non-U.S. regulatory authorities.

We currently have no products approved for sale, and we may not ever have marketable products. Clinical failure can occur at any stage of clinical development. Clinical trials may produce negative or inconclusive results, and we or any future partners may decide, or regulators may require us, to conduct additional clinical or preclinical testing which would delay submission of an NDA and regulatory approval. We will be required to demonstrate with substantial evidence through well-controlled clinical trials that our product candidates are safe and effective for use in a diverse population before we can seek regulatory approvals for their commercial sale. Success in early stage clinical trials does not mean that future larger registration clinical trials will be successful, because product candidates in later-stage clinical trials may fail to demonstrate sufficient safety and efficacy to the satisfaction of the FDA and non-U.S. regulatory authorities despite having progressed through early stage clinical trials. Product candidates that have shown promising results in early-stage (pre-Phase 3) clinical trials may still suffer significant setbacks in subsequent registration clinical trials.

In addition, the design of a clinical trial can determine whether its results will support approval of a product and flaws in the design of a clinical trial may not become apparent until the clinical trial is underway, well advanced or completed. Further, if omadacycline, sarecycline or our other potential product candidates are found to be unsafe or lack efficacy, we will not be able to obtain regulatory approval for them and our business would be harmed. A number of companies in the pharmaceutical industry, including those with greater resources and experience than us, have suffered significant setbacks in advanced clinical trials, even after obtaining promising results in earlier stage clinical trials.

Results in our randomized Phase 2 and Phase 3 clinical trials of omadacycline in cSSSI and ABSSSI evaluated omadacycline in serious skin infections, and may not be predictive of the results to be obtained in our on-going Phase 3 clinical trials of oral-only omadacycline in ABSSSI or in any other indications such as CABP or UTI. In some instances, there can be significant variability in safety and/or efficacy results between different clinical trials of the same product candidate due to numerous factors, including changes in clinical trial protocols, differences in size, type and geographic distribution of the patient populations, adherence to the dosing regimen and other clinical trial protocols and the rate of dropout among clinical trial participants. We do not know whether any Phase 2, Phase 3 or other clinical trials we or any of our collaborators may conduct, or have conducted in the past, will demonstrate consistent or adequate efficacy and safety to obtain regulatory approval to market our product candidates.

Further, our and our partners' product candidates may not be approved even if they achieve their primary endpoints in Phase 3 clinical trials or registration trials. The FDA or other non-U.S. regulatory authorities may disagree with our clinical trial design and our interpretation of data from preclinical studies and clinical trials even when we have SPA agreements. In addition, any of these regulatory authorities may change requirements for the approval of a product candidate even after reviewing and providing comments or advice on a protocol for a pivotal Phase 3 clinical trial that has the potential to result in FDA or other agencies' approval. In addition, any of these regulatory authorities may also approve a product candidate for fewer or more limited indications than we request or may grant approval contingent on the performance of costly post-marketing clinical trials. In addition, the FDA or other non-U.S. regulatory authorities may not approve the labeling claims that we believe would be supported by the clinical data, or be necessary or desirable for the successful commercialization of our product candidates. If an unforeseen safety issue arises, the FDA always has the option to initiate a REMS or add additional warnings to the product label upon approval.

The regulatory approval process is expensive, time consuming and uncertain and may prevent us or our partners from obtaining approvals for the commercialization of our product candidates.

The research, testing, manufacturing, labeling, approval, selling, marketing and distribution of drug products are subject to extensive regulation by the FDA and other U.S. and non-U.S. regulatory authorities. Regulations differ from country to country, which will require us to expend additional resources in each market for which a separate regulatory approval is required. We are not permitted to market our product candidates in the United States or in other countries until we receive approval of an NDA from the FDA or marketing approval from applicable regulatory authorities outside the United States. Our primary product candidates, omadacycline and sarecycline, are still in development and are subject to the risks of failure inherent in drug development. Neither we nor our partners have submitted an application for or received marketing approval for any of our product candidates. Obtaining approval of an NDA can be a lengthy, expensive and uncertain process. In addition, failure to comply with FDA and non-U.S. regulatory requirements may, either before or after product approval, if any, subject us to administrative or judicially imposed sanctions, including:

- restrictions on the products, manufacturers or manufacturing process;
- warning letters;
- civil and criminal penalties;
- injunctions;
- suspension or withdrawal of regulatory approvals;
- product seizures, detentions or import bans;
- voluntary or mandatory product recalls and publicity requirements;
- total or partial suspension of production;
- imposition of restrictions on operations, including costly new manufacturing requirements; and
- refusal to approve pending NDAs or supplements to approved NDAs.

The FDA and foreign regulatory authorities also have substantial discretion in the drug approval process. The number of preclinical studies and clinical trials that will be required for regulatory approval varies depending on the product candidate, the disease or condition that the product candidate is designed to address, and the regulations applicable to any particular drug candidate. Regulatory agencies can delay, limit or deny approval of a product candidate for many reasons, including:

- a product candidate may not be deemed safe or effective;
- the results may not confirm the positive results from earlier preclinical studies or earlier stage clinical trials;
- regulatory agencies may not find the data from preclinical studies and clinical trials sufficient;

- regulatory agencies might not approve our third-party manufacturer's processes or facilities; or
- regulatory agencies may change their approval policies or adopt new regulations.

Any delay in obtaining or failure to obtain required approvals could materially adversely affect our ability to generate revenue from omadacycline or any other particular product candidate, which likely would result in significant harm to our financial position. Furthermore, any regulatory approval to market a product may be subject to limitations on the indicated uses for which we may market the product. These limitations may limit the size of the market opportunity for the product.

Even if we or our partners obtain regulatory approvals for our product candidates, the terms of approvals and ongoing regulation of our products may limit how we manufacture and market our product candidates, which could materially impair our ability to generate revenue.

Once regulatory approval has been granted, an approved product and its manufacturer and marketer are subject to ongoing review and regulation. Any approved product may only be promoted for its approved uses. In addition, if the FDA and/or non-U.S. regulatory authorities approve any of our product candidates, among other things, the labeling, packaging, adverse event reporting, storage, advertising and promotion for the product will be subject to extensive regulatory requirements. In addition, approved products, manufacturers and manufacturers' facilities are required to comply with extensive FDA requirements, including ensuring that quality control and manufacturing procedures conform to cGMP regulations, which include requirements relating to quality control and quality assurance as well as the corresponding maintenance of records and documentation and reporting requirements. As such, we and our contract manufacturers will be subject to ongoing review and periodic inspections to assess compliance with cGMPs.

Accordingly, assuming regulatory approval for one or more of our product candidates, we and others with whom we work will continue to expend time, money and effort in all areas of regulatory compliance, including manufacturing, production and quality control. Further, regulatory agencies must approve these manufacturing facilities before they can be used to manufacture our products. We and our partners will also be required to report adverse reactions and production problems, if any, to the FDA and to comply with requirements concerning, among other things, advertising and promotion for our products. Promotional communications with respect to prescription drugs are subject to a variety of legal and regulatory restrictions and must be consistent with the information in the product's approved label. Accordingly, we will not be able to promote our products for indications or uses for which they are not approved. If a regulatory agency discovers previously unknown problems with a product, such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, or disagrees with the promotion, marketing or labeling of a product, it may impose restrictions on that product, us or our partners, including requiring withdrawal of the product from the market. If we fail to comply with the regulatory requirements of the FDA and other U.S. and non-U.S. regulatory authorities, or if previously unknown problems with our products, manufacturers or manufacturing processes are discovered, we could be subject to significant penalties.

If we are not able to maintain regulatory compliance, we would likely not be permitted to manufacture and market any future product candidates and may not achieve or sustain profitability. Further, the cost of compliance with post-approval regulations may have a negative effect on our operating results and financial condition.

Our product candidates may have undesirable side effects that may delay or prevent marketing approval, or, if approval is received, require them to be taken off the market, include safety warnings or otherwise limit their sales.

Although our product candidates, omadacycline and sarecycline, have undergone or will undergo safety testing in humans and in laboratory animals, not all adverse effects of drugs can be predicted or anticipated from these preclinical safety and toxicology studies. Unforeseen side effects from either of our product candidates could arise either during clinical development or, if approved by regulatory authorities, after the approved product has been marketed. Each of omadacycline and sarecycline are still in clinical development, and our other product candidates, which are in the pre-clinical phase, are not currently being further developed. Many of the most widely used antibiotics are associated with treatment-limiting adverse events, including in some instances, kidney damage, allergic reactions or sudden cardiovascular death due to cardiac arrhythmia. Although, not tested statistically due to the typically small trial size for Phase 1 and Phase 2 trials, these clinical trials to date for omadacycline and sarecycline appear to have shown a favorable safety profile. The results from the Phase 3 registration clinical trials may not confirm these preliminary observations. The results of future clinical trials may show that our product candidates, including omadacycline and sarecycline, cause undesirable or unacceptable side effects, which could interrupt, delay or halt clinical trials, and result in delay of, or failure to obtain, marketing approval from the FDA and other regulatory authorities, or result in marketing approval from the FDA and other regulatory authorities with restrictive label warnings or potential product liability claims. If any of our product candidates receive marketing approval and we or others later identify undesirable or unacceptable side effects caused by such products:

- regulatory authorities may require the addition of labeling statements, specific warnings, a contraindication or field alerts to physicians and pharmacies;
- we may be required to change the way the product is administered, conduct additional clinical trials or change the labeling of the product;
- we may be subject to limitations on how we may promote the product;
- sales of the product may decrease significantly;
- regulatory authorities may require us or our partners to take our approved product off the market;
- we may be subject to litigation or product liability claims; and
- our reputation may suffer.

Any of these events could prevent us, our current partners or our potential future partners from achieving or maintaining market acceptance of the affected product or could substantially increase commercialization costs and expenses, which in turn could delay or prevent us from generating significant revenue from the sale of our products.

Coverage and reimbursement decisions by third-party payors may have an adverse effect on pricing and market acceptance. If there is not sufficient reimbursement for our products, it is less likely that our products will be widely used.

Even if our product candidates are approved for sale by the appropriate regulatory authorities, market acceptance and sales of these products and our partners' products will depend on coverage and reimbursement policies. Government authorities and third- party payors, such as private health insurers and health maintenance organizations, decide which drugs they will cover and establish reimbursement levels. Coverage may not be available and reimbursement may not be adequate for any products that we or our partners develop and commercialize. Also, coverage and reimbursement policies may not reduce the demand for, or the price paid for, our or our partners' products. Patients who are prescribed medications for the treatment of their conditions, and their prescribing physicians, generally rely on third-party payors to reimburse all or part of the costs associated with their prescription drugs. Patients are unlikely to use our or our partners' products unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost of such products. Therefore, if coverage is not available or reimbursement is limited, we and our partners may not be able to successfully commercialize any of our approved products.

The process for determining whether a third-party payor will provide coverage for a drug product typically is separate from the process for setting the price of a drug product or for establishing the reimbursement rate that the payor will pay for the drug product once coverage is approved. Third-party payors may limit coverage to specific drug products on an approved list, also known as a formulary, which might not include all of the FDA-approved drugs for a particular indication. A decision by a third-party payor not to cover our product candidates could reduce physician utilization of our products once approved. Moreover, a third-party payor's decision to provide coverage for a drug product does not imply that an adequate reimbursement rate will be approved. Adequate third-party reimbursement may not be available to enable us to maintain price levels sufficient to realize an appropriate return on our investment in product development. Additionally, coverage and reimbursement for drug products can differ significantly from payor to payor. One third-party payor's decision to cover a particular drug product or service does not ensure that other payors will also provide coverage for the medical product or service, or will provide coverage at an adequate reimbursement rate. As a result, the coverage determination process will require us to provide scientific and clinical support for the use of our products to each payor separately and will be a time-consuming process. Furthermore, some countries, other than the United States, have single-payer healthcare systems. In countries with such systems, a positive reimbursement determination is essential to the commercial viability of a drug product.

Healthcare legislative reform measures may have a material adverse effect on our business and results of operations.

The United States and several foreign jurisdictions are considering, or have already enacted, a number of legislative and regulatory proposals to change the healthcare system in ways that could affect our or our partners' ability to sell any of our future approved products profitably. Among policymakers and payors in the United States and elsewhere, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and/or expanding access to healthcare. In the United States, the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives. We expect to experience pricing pressures in connection with the sale of any products that we or our partners develop due to the trend toward managed healthcare, the increasing influence of health maintenance organizations and additional legislative proposals.

In March 2010, the ACA became law in the United States. The stated goal of the ACA is to reduce the cost of healthcare and substantially change the way healthcare is financed by both governmental and private insurers. The ACA, among other things, addressed a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted or injected, increased the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program and extended the rebate program to individuals enrolled in Medicaid managed care organizations, established annual fees and taxes on manufacturers of certain branded prescription drugs. The ACA also established a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D. While we cannot predict what impact on federal reimbursement policies this legislation will have in general or on our business specifically, the ACA may result in downward pressure on pharmaceutical reimbursement, which could negatively affect market acceptance of, and the price we may charge for, any products that we or our partners develop that receive regulatory approval. We also cannot predict the impact of the ACA on us as many of the ACA's reforms require the promulgation of detailed regulations implementing the statutory provisions, some of which have not yet been finalized.

Modifications to, or repeal of, all or certain provisions of the ACA are expected as a result of the outcome of the recent presidential election and Republicans maintaining control of Congress, consistent with statements made by President Trump and members of Congress. We cannot predict the ultimate content, timing or effect of any changes to the ACA or other federal and state reform efforts. There is no assurance that federal or state health care reform will not adversely affect our business and financial results, and we cannot predict how future federal or state legislative, judicial or administrative changes relating to healthcare reform will affect our business.

Other legislative changes have been proposed and adopted in the United States since the ACA was enacted. The Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers of 2% per fiscal year, which went into effect in April 2013 and, due to legislative amendments, will remain in effect through 2024 unless additional Congressional action is taken. In addition, the American Taxpayer Relief Act of 2012, which, among other things, further reduced Medicare payments to several categories of healthcare providers and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. If we or our partner Allergan ever obtain regulatory approval and commercialize omadacycline or sarecycline these new laws may result in additional reductions in Medicare and other healthcare funding, which could harm our customers and accordingly, our financial operations.

If we or our partners market products in a manner that violates fraud and abuse and other healthcare laws, or if we or our partners violate government price reporting laws, we or our partners may be subject to administrative civil and/or criminal penalties.

In addition to FDA restrictions on marketing of pharmaceutical products, several other types of state and federal healthcare laws, including those commonly referred to as "fraud and abuse" laws have been applied in recent years to restrict certain marketing practices in the pharmaceutical industry. These laws include, among others, false claims and anti-kickback statutes. At such time, if ever, as we or any of our partners market any of our future approved products, it is possible that some of our or our partner's business activities could be subject to challenge under one or more of these laws. The laws that may affect our ability to operate include:

- federal false claims, false statements and civil monetary penalties laws prohibiting, among other things, any person from knowingly presenting, or causing to be presented, a false claim for payment of government funds or knowingly making, or causing to be made, a false statement to get a false claim paid;
- the federal Anti-Kickback Statute prohibits, among other things, knowingly and willfully offering, paying, soliciting or receiving remuneration directly or indirectly, in cash or in kind, to induce or reward the purchasing, leasing, ordering or arranging for the purchase, lease or order of any healthcare item or service reimbursable under Medicare, Medicaid or other federally financed healthcare programs. This statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on the one hand and prescribers, purchasers and formulary managers on the other. Although there are several statutory exceptions and regulatory safe harbors protecting certain common activities from prosecution, the exceptions and safe harbors are drawn narrowly, and practices that involve remuneration intended to induce prescribing, purchasing or recommending may be subject to scrutiny if they do not qualify for an exception or safe harbor. In addition, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it to have committed a violation. Moreover, the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act;
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which created federal criminal statutes that prohibit knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program or obtain, by means of false or fraudulent pretenses, representations or promises, any of the money or property owned by, or under the custody or control of, any healthcare benefit program, regardless of the payor (e.g., public or private), knowingly and willfully embezzling or stealing from a health care benefit program, willfully obstructing a criminal investigation of a healthcare offense and knowingly and willfully falsifying, concealing or covering up by any trick or device a material fact or making any materially false statements in connection with the delivery of, or payment for, healthcare benefits, items or services relating to healthcare matters. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it to have committed a violation;
- federal data privacy and security regulation, including HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, and their respective implementing regulations, which impose specified requirements relating to the privacy, security and transmission of individually identifiable health information;
- the federal Physician Payments Sunshine Act and its implementing regulations, which imposed annual reporting requirements for certain manufacturers of drugs, devices, biologics and medical supplies for payments and "transfers of value" provided to physicians and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members; and
- analogous state and foreign laws, such as state anti-kickback and false claims laws, which may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third- party payors, including private insurers; state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government or otherwise restrict payments that may be made to healthcare providers; state and foreign laws that require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures; and state and foreign laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Efforts to ensure that our and our partners' business arrangements with third parties will comply with applicable healthcare laws and regulations may involve substantial costs. It is possible that governmental authorities will conclude that our or our partners' business practices may not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws.

Pharmaceutical and other healthcare companies have been prosecuted under these laws for a variety of promotional and marketing activities, such as: providing free trips, free goods, sham consulting fees and grants and other monetary benefits to prescribers; reporting to pricing services inflated average wholesale prices that were then used by federal programs to set reimbursement rates; engaging in off-label promotion; and submitting inflated best price information to the Medicaid Rebate Program to reduce liability for Medicaid rebates. If our or our partners' operations are found to be in violation of any of these laws or any other governmental regulations that may apply to us, we or our partners may be subject to significant civil, criminal and administrative penalties, including, without limitation, damages, fines, imprisonment, exclusion from participation in government healthcare programs, such as Medicare and Medicaid, and the curtailment or restructuring of our operations, which could significantly harm our business.

Risks Related to Our Business

We face significant competition and if our competitors develop and market products that are more effective, safer or less expensive than our product candidates, our commercial opportunities will be negatively impacted.

The life sciences industry is highly competitive and subject to rapid and significant technological change. We are currently developing products that, if approved, will compete with other drugs and therapies that currently exist or are being developed. Products that we may develop in the future are also likely to face competition from other drugs and therapies, some of which we may not currently be aware. We have competitors both in the United States and internationally, including major multinational pharmaceutical companies, established biotechnology companies, specialty pharmaceutical companies, universities and other research institutions. Many of our competitors have significantly greater financial, manufacturing, marketing, drug development, technical and human resources than we do. Large pharmaceutical companies, in particular, have extensive experience in clinical testing, obtaining regulatory approvals, recruiting patients and manufacturing pharmaceutical products. These companies also have significantly greater research, development and marketing capabilities than we do and may also have products that have been approved or are in late stages of development, and collaborative arrangements in our target markets with leading companies and research institutions. Established pharmaceutical companies may also invest heavily to accelerate discovery and development of novel compounds or to in-license novel compounds that could make the product candidates that we develop obsolete or less competitive. As a result of all of these factors, our competitors may succeed in obtaining patent protection and/or FDA approval or discovering, developing and commercializing antibiotics before we do so for any of our product candidates.

The GAIN Act is intended to provide incentives for the development of new QIDPs. These incentives may result in more competition in the market for new antibiotics and may cause pharmaceutical and biotechnology companies with more resources than we have to shift their efforts toward the development of products that could be competitive with our product candidates.

The competition in the market for antibiotics such as omadacycline is intense. If approved, omadacycline will face competition from commercially available antibiotics such as vancomycin, marketed as a generic by Abbott Laboratories and others; linezolid, sold under the brand name Zyvox by Pfizer Inc. and available as a generic; daptomycin, sold under the brand name Cubicin by Merck and available as a generic; dalbavancin, approved in May 2014 and marketed by Allergan as Dalvance; tedizolid, marketed as Sivextro by Merck; oritavancin, approved in August 2014 and marketed by The Medicines Company as Orbactiv; quinupristin/dalfopristin, sold under the brand name Synercid by Pfizer, Inc. and available as a generic; tigecycline, sold under the brand name Tygacil by Pfizer Inc. and available as a generic; telavancin, sold as Vibativ by Theravance, Inc.; ceftaroline, sold under the brand name Teflaro by Allergan; and generic trimethoprim/sulfamethoxazole and clindamycin.

Vancomycin has been a widely used and well known antibiotic for over 40 years and is sold in a relatively inexpensive generic IV form. Vancomycin, daptomycin, quinupristin/dalfopristin, trimethoprim/sulfamethoxazole, ceftaroline, tigecycline, linezolid and telavancin are all approved treatments for serious gram-positive infections such as ABSSSI. Additionally, ceftaroline is approved for CABP; moxifloxacin is approved for CABP, intra-abdominal infections, acute exacerbations of chronic bronchitis and acute bacterial sinusitis; levofloxacin and ceftriaxone are approved for many of the same uses as moxifloxacin as well as for urinary tract infections; azithromycin and clarithromycin are primarily approved for upper and lower respiratory tract infections, including CABP; daptomycin is an approved treatment for cSSSI and bacteremia; tigecycline is an approved treatment for cSSSI, CABP and intra-abdominal infections; linezolid is an approved treatment for pneumonia; and vancomycin is an approved treatment for both bacteremia and pneumonia. If we are unable to obtain regulatory approval of omadacycline for some or all of the indications for which our competitors are approved, we may not be able to compete effectively with such antibiotics.

In addition, if approved, omadacycline may face additional competition from antibiotics currently in clinical development. Other antibiotics currently in development include, but are not limited to, ceftobiprole, under development by Basilea Pharmaceutica AG and approved in 13 European countries; solithromycin, under development by Cempra, Inc.; eravacycline, under development by Tetraphase Pharmaceuticals, Inc.; delafloxacin and radezolid, under development by Melinta Pharmaceuticals, Inc.; and Lefamulin under development by Nabriva Therapeutics AG, which, if approved, would compete in the antibiotic market. In addition, our product

candidates may each face competition from product candidates that could receive regulatory approval before our product candidates in countries outside the United States and the European Union. If we are unable to demonstrate points of differentiation between our product candidates and competing products, we may not be able to successfully commercialize our product candidates, our commercial opportunities will be negatively impacted and our results of operations will suffer.

We and our partner, Allergan, will also face competition in the acne markets where generic tetracyclines such as doxycycline and minocycline are available in every market around the world. Branded generic versions of tetracycline derivatives are sold by several companies.

In addition, many universities and private and public research institutes may become active in our target indications. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large, established companies.

We believe that our ability to successfully compete will depend on, among other things:

- the results of our registration clinical trials, in particular our two Phase 3 registration clinical trials for omadacycline—one in ABSSSI and one in CABP;
- our and our partners' ability to recruit and enroll patients for our and our partners' clinical trials;
- the efficacy, safety and reliability of our and our partners' product candidates;
- our and our partners' ability to reliably manufacture any of our formulations;
- the speed at which we and our partners develop our product candidates;
- our and our partners' ability to commercialize and market, or find partners to help or exclusively commercialize and market, any of our product candidates that receive regulatory approval;
- our and our partners' ability to design and successfully execute appropriate clinical trials;
- our and our partners' ability to maintain a productive relationship with regulatory authorities;
- the timing and scope of regulatory approvals;
- the effectiveness of our, our current partners' or any future partners' marketing and sales capabilities;
- the price of our products;
- coverage and adequate levels of reimbursement under private and governmental health insurance plans, including Medicare;
- our and our partners' ability to protect and maintain intellectual property rights related to our product candidates;
- our and our partners' ability to manufacture and sell commercial quantities at a reasonable cost of any approved products to the market; and
- acceptance of any approved products by physicians and other healthcare providers.

If our competitors market products that are more effective, safer or less expensive than, or that reach the market sooner than, our or any of our partners' future products, if any, we may not achieve commercial success. In addition, the biopharmaceutical industry is characterized by rapid technological change. If we fail to stay at the forefront of technological change, we may be unable to compete effectively. Technological advances or products developed by our competitors may render our technologies or product candidates obsolete, less competitive or not economical.

In addition, in the event that our or any of our partners' products receives regulatory approval, price competition may inhibit the acceptance of our products, physicians may be reluctant to switch from existing products to our products, physicians may switch to other newly approved drug products, or physicians may choose to reserve our products for use in limited circumstances.

We rely and will continue to rely on outsourcing arrangements for manufacturing of our product candidates. Reliance on third- party manufacturers could delay approval or commercialization of our products.

We do not currently own or operate manufacturing facilities for the production of any of our product candidates, nor do we intend to manufacture the pharmaceutical products that we plan to sell. We currently depend on third-party contract manufacturers for the supply of the active pharmaceutical ingredients for our product candidates, including drug substance for our preclinical research

and clinical trials. We recently entered into certain long-term manufacturing and supply agreements. These include (i) a manufacturing and services agreement with CIPAN for the supply of starting materials for our supply of omadacycline and crude omadacycline, (ii) an outsourcing agreement with Carbogen for the supply of active pharmaceutical ingredient for our omadacycline products, and (iii) a manufacturing and services agreement with Almac for the supply of omadacycline oral solid dosage tablets. We are currently in discussions with other third-party manufacturers for clinical trial and commercial supplies and intend to enter into additional long-term supply agreements with them. We may not be able to reach agreement with some of these contract manufacturers, or to identify and reach arrangement on satisfactory terms with other contract manufacturers, to manufacture omadacycline or any of our other product candidates. Additionally, we anticipate that the facilities used by any contract manufacturer to manufacture any of our product candidates will be the subject of inspections by regulatory agencies before the FDA and other regulatory authorities that approve an NDA or marketing authorization for the product candidate manufactured at that facility. We will depend on these third-party manufacturing partners for compliance with the FDA's manufacturing requirements for finished products. If our manufacturers cannot successfully manufacture material that conforms to our specifications and the FDA and other regulatory authorities' cGMP requirements, our product candidates will not be approved or, if already approved, may be subject to delays in release and/or product recalls. While third-party manufacturers of our product candidates, including omadacycline, have previously passed FDA and other regulatory agency inspections, we cannot provide assurance that they will pass such inspections in the future.

Reliance on third-party manufacturers entails risks to which we would not be subject if we manufactured the product candidates itself, including:

- the possibility of a breach of the manufacturing agreements by the third parties because of factors beyond our control;
- the possibility of termination or nonrenewal of the agreements by the third parties before we are able to arrange for a qualified replacement third-party manufacturer;
- the possibility that we may not be able to secure a manufacturer or manufacturing capacity in a timely manner and on satisfactory terms in order to meet our manufacturing needs; and
- the possibility that the third parties may not be able to respond adequately to unexpected changes in demand forecasts that may result in either lost revenue or excessive inventory with decreasing shelf-life.

Any of these factors could cause the delay of approval or commercialization of our products, cause us to incur higher costs or prevent us from commercializing our product candidates successfully. Furthermore, if any of our product candidates are approved and contract manufacturers fail to continuously meet FDA compliance standards or fail to deliver the required commercial quantities of finished product on a timely basis and at commercially reasonable prices, and we are unable to find one or more replacement manufacturers capable of production at a substantially equivalent cost, in substantially equivalent volumes and quality and on a timely basis, we would likely be unable to meet demand for our products and could lose potential revenue. It may take one or more years to establish an alternative source of supply for our product candidates and to have any such new source approved by the FDA or any other relevant regulatory authorities.

If the FDA or other applicable regulatory authorities approve generic products that compete with any of our or any of our partners' product candidates, or if existing generic antibiotics are viewed as being equally effective to our or any of our partners' product candidates, the sales of our product candidates would be adversely affected.

Once an NDA or marketing authorization application outside the United States is approved, the product covered thereby becomes a "listed drug" that can, in turn, be cited by potential competitors in support of approval of an ANDA in the United States. Agency regulations and other applicable regulations and policies provide incentives to manufacturers to create modified, non- infringing versions of a drug to facilitate the approval of an ANDA or other application for generic substitutes in the United States and in nearly every pharmaceutical market around the world. These manufacturers might only be required to conduct a relatively inexpensive study to show that their product has the same active ingredient(s), dosage form, strength, route of administration and conditions of use, or labeling, as our product candidate and that the generic product is bioequivalent to ours, meaning it is absorbed in the body at the same rate and to the same extent as our product candidate. These generic equivalents, which must meet the same quality standards as branded pharmaceuticals, would be significantly less costly than ours to bring to market, and companies that produce generic equivalents are generally able to offer their products at lower prices. Thus, after the introduction of a generic competitor, a significant percentage of the sales of any branded product is typically lost to the generic product. Accordingly, competition from generic equivalents to ours or any of our partners' future products, if any, would materially adversely impact our future revenue, profitability and cash flows and substantially limit our ability to obtain a return on the investments we have made in our or any of our partners' product candidates, including omadacycline. For example, vancomycin has been available in generic form for many years, and Zyvox (linezolid) is expected to become available in generic form when certain patents covering it expire in 2015. We cannot yet ascertain what impact these generic products and any future approved generic products will have on any sales of our products, if approved.

The success of our business may be dependent on the actions of our collaborative partners.

An element of our business and funding strategy is to enter into collaborative arrangements with established pharmaceutical and biotechnology companies who will finance or otherwise assist in the development, manufacture and marketing of products incorporating our technology, and who also provide us with funding in the form of milestone payments for progress in clinical development or regulatory approval. For example, we have exclusively licensed rights to sarecycline for the treatment of acne in the United States to Allergan, and Allergan is responsible for all clinical development, registration and commercialization in the United States of sarecycline for the treatment of acne. In addition, we have granted Allergan an exclusive license to develop and commercialize sarecycline for the treatment of rosacea in the United States, which converted to a non-exclusive license in December 2014 after Allergan did not exercise its development option with respect to rosacea. There are currently no clinical trials in rosacea underway.

Accordingly, our prospects will depend in part upon our ability to attract and retain collaborative partners and to develop technologies and products that achieve the criteria for milestone payments. When we collaborate with a third party for development and commercialization of a product candidate, we can expect to relinquish some or all of the control over the future success of that product candidate to the third party. In addition, our collaborative partners may have the right to abandon research or development projects and terminate applicable agreements, including funding obligations, prior to or upon the expiration of the agreed upon terms. We may not be successful in establishing or maintaining collaborative arrangements on acceptable terms or at all, collaborative partners may terminate funding before completion of projects, our product candidates may not achieve the criteria for milestone payments, our collaborative arrangements may not result in successful product commercialization, and we may not derive any revenue from such arrangements. For example, we previously entered into a license and collaboration agreement with Novartis for the development of omadacycline, which was terminated. To the extent that we are not able to develop and maintain collaborative arrangements, we would need substantial additional capital to undertake research, development and commercialization activities on our own, we may be forced to limit the number of our product candidates we can commercially develop or the territories in which we commercialize them, and we might fail to commercialize products or programs for which a suitable collaborator cannot be found.

Reliance on collaborative relationships poses a number of risks, including the following:

- our collaborators may not perform their obligations as expected or in compliance with applicable laws;
- the prioritization, amount and timing of resources dedicated by our collaborators to their respective collaborations with us is not under our control;
- some product candidates discovered in collaboration with us may be viewed by our collaborators as competitive with their own product candidates or products;
- our collaborators may elect not to proceed with the development of product candidates that we believe to be promising;
- disagreements with collaborators, including disagreements over proprietary rights, contract interpretation or the preferred course of development, might cause delays or termination of the research, development or commercialization of product candidates, might lead to additional responsibilities for us with respect to product candidates, or might result in litigation or arbitration, any of which would be time-consuming and expensive;
- some of our collaborators might develop independently, or with others, products that could compete with our products;
- a delay in the development timelines for sarecycline would result in a potential loss of development milestones and future royalties (if any) from the partnership; and
- if the rights to sarecycline are returned to us, we will need to establish a new development partnership to further sarecycline development internally. There can be no assurance that we would be able to find such a partner.

If we are not able to establish and sustain additional partnerships, we may have to alter our development and commercialization plans, which could harm our business.

We anticipate that we will require additional funding to complete the NDA and the EMA Market Authorization Application registration filings and commercialization of omadacycline and to continue the development of any of our other product candidates. For some of our product candidates, we may decide to collaborate with pharmaceutical and biotechnology companies for the development and potential commercialization of those product candidates, as we have done with Allergan for sarecycline.

We face significant competition in seeking appropriate collaborators. Whether or not we reach a definitive agreement for a collaboration will depend, among other things, upon our assessment of the collaborator's resources and expertise, the terms and conditions of the proposed collaboration and the proposed collaborator's evaluation of a number of factors. Those factors may include the design or results of clinical trials, the likelihood of approval by the FDA or similar regulatory authorities outside the United States, the potential market for the product candidate, the costs and complexities of manufacturing and delivering such product candidate to patients, the patent position protecting the product candidate, the potential of competing products, the need to seek licenses or sub-licenses to third-party intellectual property and industry and market conditions generally. The collaborator may also consider alternative product candidates or technologies and whether collaboration on an alternative product could be more attractive than a collaboration with us. We may also be restricted under future license agreements from entering into agreements on certain terms with potential collaborators. Collaborations are complex and time-consuming to negotiate and document. In addition, there have been a significant number of recent business combinations among large pharmaceutical companies that have resulted in a reduced number of potential future collaborators.

We may not be able to negotiate collaborations on a timely basis, on acceptable terms or at all. If we are unable to do so, it may delay completion of development and potential commercialization of our products. If we elect to increase our expenditures to fund development, registration or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all. If we do not have sufficient funds, we may not be able to further develop our product candidates or bring them to market and generate product revenue.

Further, even if we are able to enter into collaborations, we must be able to sustain a mutually beneficial working relationship with our collaborators in order to achieve the intended benefits of those collaborations. In the past, certain of our collaborators, including Novartis, have terminated their partnering relationships with us due to delays and uncertainties in connection with the FDA regulatory pathway for approval of omadacycline for the ABSSSI and CABP indications. This past history may affect our ability to attract and enter into collaboration arrangements with future partners or collaborators for the development of omadacycline.

We currently have no sales or distribution infrastructure with respect to our product candidates. If we are unable to develop our sales, marketing and distribution capability on our own or through collaborations with marketing partners, we will not be successful in commercializing our product candidates.

We currently have no sales or distribution capabilities within our organization. If our product candidate omadacycline is approved, we intend either to establish a sales and marketing organization with technical expertise and supporting distribution capabilities to commercialize omadacycline, or to outsource this function to a third party. Either of these options would be expensive and time consuming. Some or all of these costs may be incurred in advance of any approval of omadacycline. In addition, we may not be able to hire a sales force in the United States that is large enough or has adequate expertise in the medical markets that we intend to target. Any failure or delay in the development of our internal sales, marketing and distribution capabilities would adversely impact the commercialization of omadacycline.

With respect to our existing and future product candidates, we may choose to collaborate with third parties that have direct sales forces and established distribution systems, either to augment our own sales force and distribution systems or as an alternative to our own sales force and distribution systems. To the extent that we enter into co-promotion or other licensing arrangements, our product revenue and profitability may be lower than if we directly marketed or sold any approved products. In addition, any revenue we receive will depend in whole or in part upon the efforts of these third parties, which may not be successful and are generally not within our control. If we are unable to enter into these arrangements on acceptable terms or at all, we may not be able to successfully commercialize any approved products. If we are not successful in commercializing any approved products, either on our own or through collaborations with one or more third parties, our future product revenue will suffer, and we may incur significant additional losses.

Independent clinical investigators and CROs that we engage to conduct our clinical trials may not devote sufficient time or attention to our and our partners' clinical trials or be able to repeat their past success.

We expect to depend on independent clinical investigators and CROs to participate in and conduct our clinical trials, including our ongoing Phase 3 oral-only ABSSSI clinical study and CABP Phase 3 study, in which enrollment was completed in January 2017. CROs may also assist us and our partners in the collection and analysis of data. There is a limited number of third-party service providers that specialize or have the expertise required to achieve our business objectives. Identifying, qualifying and managing performance of third-party service providers can be difficult, time consuming and cause delays in our or our partners' development programs. These investigators and CROs will not be our employees, and we will not be able to control, other than by contract, the amount of resources, including time, that they devote to our product candidates and clinical trials. If independent investigators fail to devote sufficient resources to the development of our product candidates, or if their performance is substandard, it may delay or compromise the prospects for approval and commercialization of any product candidates that we and our partners develop. In addition, the use of third-party service providers requires us to disclose our proprietary information to these parties, which could increase the risk that this information will be misappropriated. Further, the FDA requires that we and our partners comply with standards, commonly referred to as cGCP, for conducting, recording and reporting clinical trials to assure that data and reported results are credible and accurate and that the rights, safety, integrity and confidentiality of clinical trial subjects are protected. Failure of clinical investigators or CROs to meet their obligations to us or comply with cGCP could adversely affect the clinical development of our product candidates and harm our business.

Our success is currently dependent on the successful development and commercialization of our most advanced product candidates, omadacycline and sarecycline.

Our success is currently dependent on the successful development and commercialization of our most advanced product candidates, omadacycline and sarecycline, which is currently being developed by Allergan. We are not currently developing any of our other product candidates that are in the pre-clinical phase. If omadacycline and sarecycline are not successfully developed and commercialized, we will not have any product candidates under development from which we might generate revenue. We currently have no such plans to develop any other product candidates and will need additional financing to fund such development should we decide to do so in the future.

Even if approved, if omadacycline or sarecycline does not achieve broad market acceptance among physicians, patients, the medical community and third-party payors, our revenue generated from their sales will be limited.

The commercial success of our product candidates will depend upon their acceptance among physicians, patients and the medical community. The degree of market acceptance of our product candidates will depend on a number of factors, including:

- limitations or warnings contained in a product candidate's FDA or foreign regulatory approved labeling;
- changes in the standard of care for the targeted indications for any of our product candidates;
- limitations in the approved clinical indications for our product candidates;
- demonstrated clinical safety and efficacy compared to other products;
- lack of significant adverse side effects;
- sales, marketing and distribution support;
- availability of coverage and adequate reimbursement from governmental or private third-party payors, such as Medicare or managed care plans;
- timing of market introduction and perceived effectiveness of competitive products;
- the degree of cost-effectiveness of our product candidates;
- availability of alternative therapies at similar or lower cost, including generics and over-the-counter products;
- the extent to which the product candidate is approved for inclusion on formularies of hospitals, and third-party payors, including managed care organizations;
- whether the product is designated under physician treatment guidelines as a therapy for particular infections;
- adverse publicity about our product candidates or favorable publicity about competitive products;

- convenience and ease of administration of our products; and
- potential product liability claims.

If our product candidates are approved, but do not achieve an adequate level of acceptance by physicians, patients and the medical community, we and our partners may not generate sufficient revenue from these products, and we may not become or remain profitable. In addition, efforts to educate the medical community and third-party payors on the benefits of our product candidates may require significant resources and may never be successful

Even if we obtain FDA approval of our current or any future product candidates, we or our partners may never obtain approval or commercialize our products outside of the United States, which would limit our ability to realize their full market potential.

In order to market any products outside of the United States, we must establish and comply with numerous and varying regulatory requirements of other countries regarding clinical trial design, safety and efficacy. Clinical trials conducted in one country may not be accepted by regulatory authorities in other countries, and regulatory approval in one country does not mean that regulatory approval will be obtained in any other country. Approval procedures vary among countries and can involve additional product testing and validation and additional administrative review periods. Seeking foreign regulatory approvals could result in significant delays, difficulties and costs for us and may require additional preclinical studies or clinical trials. Satisfying these and other regulatory requirements is costly, time consuming, uncertain and subject to unanticipated delays. In addition, our failure to obtain regulatory approval in any country may delay or have negative effects on the process for regulatory approval in other countries. We and our partners do not have any product candidates approved for sale in any jurisdiction, including international markets, and we do not have experience in obtaining regulatory approval in international markets. If we or our partners fail to comply with regulatory requirements in international markets or to obtain and maintain required approvals, our target market will be reduced and our ability to realize the full market potential of our products will be harmed. Further, while we have obtained SPA agreements with the FDA for our Phase 3 registration clinical trial designs for omadacycline in ABSSSI and CABP, these agreements are not binding with any international regulatory authorities.

Bacteria might develop resistance to any of our antibiotic product candidates, which would decrease the efficacy and commercial viability of those product candidates.

Antibiotic resistance is primarily caused by the genetic mutation of bacteria resulting from suboptimal exposure to antibiotics where the drug does not eradicate all of the bacteria. While antibiotics have been developed to treat many of the most common infections, the extent and duration of their use worldwide has resulted in new mutated strains of bacteria resistant to current treatments. Our product candidate omadacycline is being developed to treat patients infected with drug-resistant bacteria. If physicians, rightly or wrongly, associate the resistance issues of older generations of tetracyclines with omadacycline, physicians might not prescribe omadacycline for treating a broad range of infections. In addition, bacteria might develop resistance to omadacycline if such bacteria are improperly dosed or treated repeatedly with omadacycline over multiple years, causing the efficacy of omadacycline to decline, which would negatively affect our potential to generate revenue from omadacycline.

Our business and operations would suffer in the event of computer system failures.

Despite the implementation of security measures, our internal computer systems, and those of our CROs, our partners and other third parties on which we rely, are vulnerable to damage from computer viruses, unauthorized access, natural disasters, fire, terrorism, war and telecommunication and electrical failures. In addition, our systems safeguard important confidential personal data regarding our subjects. If a computer failure were to occur and cause interruptions in our operations, it could result in a material disruption of our drug development programs. For example, the loss of clinical trial data from completed, ongoing or planned clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach results in a loss of or damage to our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability and the further development of omadacycline and other product candidates could be delayed.

If any product liability lawsuits are successfully brought against us or any of our collaborative partners, we may incur substantial liabilities and may be required to limit commercialization of our product candidates.

We face an inherent risk of product liability lawsuits related to the testing of our product candidates in seriously ill patients and will face an even greater risk if product candidates are approved by regulatory authorities and introduced commercially. Product liability claims may be brought against us or our partners by participants enrolled in our clinical trials, patients, healthcare providers or others using, administering or selling any of our future approved products. If we cannot successfully defend ourselves against any such claims, we may incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any of our future approved products;
- injury to our reputation;
- withdrawal of clinical trial participants;
- termination of clinical trial sites or entire clinical trial programs;
- significant litigation costs;
- substantial monetary awards to or costly settlements with patients or other claimants;
- product recalls or a change in the indications for which they may be used;
- loss of revenue;
- diversion of management and scientific resources from our business operations; and
- the inability to commercialize our product candidates.

If any of our product candidates are approved for commercial sale, we will be highly dependent upon consumer perceptions of us and the safety and quality of our products. We could be adversely affected if we are subject to negative publicity. We could also be adversely affected if any of our products or any similar products distributed by other companies prove to be, or are asserted to be, harmful to patients. Also, because of our dependence upon consumer perceptions, any adverse publicity associated with illness or other adverse effects resulting from patients' use or misuse of our products or any similar products distributed by other companies could have a material adverse impact on our results of operations.

We currently hold $10.0 million in product liability insurance coverage in the aggregate annually, with a per incident limit of $10.0 million, which may not be adequate to cover all liabilities that we may incur. We may need to increase our insurance coverage when we begin the commercialization of our product candidates. Insurance coverage is becoming increasingly expensive. As a result, we may be unable to maintain or obtain sufficient insurance at a reasonable cost to protect us against losses that could have a material adverse effect on its business. These liabilities could prevent or interfere with our product development and commercialization efforts. A successful product liability claim or series of claims brought against us, particularly if judgments exceed our insurance coverage, could decrease our cash resources and adversely affect our business, financial condition and results of operation.

If we fail to attract and retain key management and scientific personnel, we may be unable to successfully develop or commercialize our product candidates.

Our industry has experienced a high rate of turnover of management personnel in recent years. We are to a certain extent dependent on the members of our senior management team for our business success. The employment agreements with our senior management team can be terminated by us or them at any time, with notice. The departure of any of our executive officers could result in a significant loss in the knowledge and experience that we, as an organization, possesses and could cause significant delays, or outright failure, in the execution of our strategies and development and approval of our product candidates.

Our success depends in part on our continued ability to attract, retain and motivate highly qualified management, development and clinical personnel. We may not be able to attract or retain such qualified personnel due to the intense competition for qualified personnel among biotechnology, pharmaceutical and other businesses. If we are not able to attract and retain the necessary personnel to accomplish our business objectives, we may experience constraints that will impede significantly our development objectives and timelines, our ability to raise additional capital and our ability to implement our business strategy.

We depend on various consultants and advisors for the success and continuation of our development efforts.

We work extensively with various consultants and advisors, who provide advice and/or services in various business and development functions, including clinical development, operations and strategy, regulatory matters, legal and finance. The potential success of our drug development programs depends, in part, on continued successful collaborations with certain of these consultants and advisors. Our consultants and advisors are not our employees and may have commitments and obligations to other entities that may limit their availability to us. Typically, these advisors will not enter into non-compete agreements with us. If a conflict of interest arises between their work for us and their work for another entity, we may lose their services. We do not know if we will be able to maintain such relationships or that such consultants and advisors will not enter into other arrangements with competitors, any of which could have a detrimental impact on our development objectives and our business.

We will need to grow our organization, and we may experience difficulties in managing this growth, which could disrupt our operations.

As of February 28, 2017, we had 48 full-time employees. Assuming our development and commercialization plans and strategies develop, we expect to expand our employee base for managerial, operational, sales, marketing, financial and other resources. Future growth would impose significant added responsibilities on members of management, including the need to identify, recruit, maintain, motivate and integrate additional employees. Also, our management may need to divert a disproportionate amount of their attention away from our day-to-day activities and devote a substantial amount of time to managing these growth activities. We may not be able to effectively manage the expansion of our operations that may result in weaknesses in our infrastructure, give rise to operational mistakes, loss of business opportunities, loss of employees and reduced productivity among remaining employees. Our expected growth could require significant capital expenditures and may divert financial resources from other projects, such as the development of existing and additional product candidates. If our management is unable to effectively manage our expected growth, our expenses may increase more than expected, our ability to generate and/or grow revenue could be reduced and we may not be able to implement our business strategy. Our future financial performance and our ability to commercialize omadacycline and our other product candidates and compete effectively with others in our industry will depend, in part, on our ability to effectively manage any future growth.

Our and our partners' business may become subject to economic, political, regulatory and other risks associated with international operations.

Our business is subject to risks associated with conducting business internationally, in part due to a number of our suppliers and collaborative and clinical trial relationships being located outside the United States. Accordingly, our future results could be harmed by a variety of factors, including:

- economic weakness, including inflation or political instability, in particular foreign economies and markets;
- differing regulatory requirements for drug approvals in foreign countries;
- differing regulatory requirements for drug product pricing and reimbursement;
- potentially reduced protection for intellectual property rights;
- difficulties in compliance with non-U.S. laws and regulations;
- changes in non-U.S. regulations and customs, tariffs and trade barriers;
- changes in non-U.S. currency exchange rates and currency controls;
- changes in a specific country's or region's political or economic environment;
- trade protection measures, import or export licensing requirements or other restrictive actions by U.S. or non-U.S. governments;
- negative consequences from changes in tax laws;
- compliance with tax, employment, immigration and labor laws for employees living or traveling abroad;
- workforce uncertainty in countries where labor unrest is more common than in the United States;
- difficulties associated with staffing and managing foreign operations, including differing labor relations;
- production shortages resulting from any events affecting raw material supply or manufacturing capabilities abroad; and
- business interruptions resulting from geo-political actions, including war and terrorism, or natural disasters, including earthquakes, typhoons, floods and fires.

These risks may materially adversely affect our ability to attain or sustain profitable operations.

If we do not comply with laws regulating the protection of the environment and health and human safety, our business could be adversely affected.

Our research and development involves the use of potentially hazardous materials and chemicals. Our operations may have produced hazardous waste products. Although we believe that our safety procedures for handling and disposing of these materials comply with the standards mandated by local, state and federal laws and regulations, the risk of accidental contamination or injury from these materials cannot be eliminated. We are also subject to numerous environmental, health and workplace safety laws and regulations and fire and building codes, including those governing laboratory procedures, exposure to blood-borne pathogens, use and storage of flammable agents and the handling of biohazardous materials. Although we have always maintained workers' compensation insurance as prescribed by the Commonwealth of Massachusetts to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of these materials, this insurance may not provide adequate coverage against potential liabilities. We do not maintain insurance for environmental liability or toxic tort claims that may be asserted against us. Additional federal, state and local laws and regulations affecting our operations may be adopted in the future. We may incur substantial costs to comply with, and substantial fines or penalties if we violate, any of these laws or regulations.

Our employees, contractors, partners, principal investigators, CROs, consultants and vendors may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements.

We are exposed to the risk that our employees, contractors, partners, principal investigators, CROs, consultants and vendors may engage in fraudulent conduct or other illegal activity. Misconduct by these parties could include intentional, reckless and/or negligent conduct or disclosure of unauthorized activities to us that violates: FDA regulations, including those laws requiring the reporting of true, complete and accurate information to the FDA, federal and state healthcare fraud and abuse laws and regulations, laws that require the reporting of financial information or data timely, completely or accurately. In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, misconduct, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Third-party misconduct could also involve the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. It is not always possible to identify and deter misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. If any such actions are instituted against us resulting from this misconduct, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of significant civil, criminal and administrative penalties, including, without limitation, damages, fines, imprisonment, exclusion from participation in government healthcare programs, such as Medicare and Medicaid, and the curtailment or restructuring of our operations, which could significantly harm our business.

We enter into various contracts in the normal course of our business in which we indemnify the other party to the contract. In the event we have to perform under these indemnification provisions, it could have a material adverse effect on our business, financial condition and results of operations.

In the normal course of business, we periodically enter into academic, commercial, service, collaboration, licensing, consulting and other agreements that contain indemnification provisions. With respect to our academic and other research agreements, we typically indemnify the institution and related parties from losses arising from claims relating to the products, processes or services made, used, sold or performed pursuant to the agreements for which we have secured licenses, and from claims arising from our or our sub licensees' exercise of rights under the agreement. With respect to our commercial agreements, we indemnify our vendors from any third-party product liability claims that could result from the production, use or consumption of the product, as well as for alleged infringements of any patent or other intellectual property right by a third party. With respect to consultants, we indemnify them from claims arising from the good faith performance of their services.

Should our obligation under an indemnification provision exceed applicable insurance coverage or if we were denied insurance coverage, our business, financial condition and results of operations could be adversely affected. Similarly, if we are relying on a collaborator to indemnify us and the collaborator is denied insurance coverage or does not have assets available to indemnify us, our business, financial condition and results of operations could be adversely affected.

We may be subject to damages resulting from claims that we or our employees have wrongfully used or disclosed alleged trade secrets of former employers.

Certain of our former employees were previously employed at universities or other biotechnology or pharmaceutical companies, including competitors or potential competitors. Although no claims against us are currently pending, we may be subject to claims that these employees or we ourselves inadvertently or otherwise used or disclosed trade secrets or other proprietary information. Litigation may be necessary to defend against these claims. If we fail in defending such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. A loss of key research personnel or their work product could hamper or prevent us or a collaboration partner's ability to develop or commercialize certain potential products, which could severely harm the business. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to management.

Risks Related to Our Intellectual Property

If we are unable to obtain and enforce patent protection for our product candidates and related technology, our business could be materially harmed.

Issued patents may be challenged, invalidated or circumvented. In addition, court decisions may introduce uncertainty in the enforceability or scope of patents owned by biotechnology companies. The legal systems of certain countries do not favor the aggressive enforcement of patents, and the laws of foreign countries may not allow us to protect our inventions with patents to the same extent as do the laws of the United States. Because patent applications in the United States and many foreign jurisdictions are typically not published until 18 months after filing, or in some cases not at all, and because publications of discoveries in scientific literature lag behind actual discoveries, or may not be the first to make the inventions claimed in issued patents or pending patent applications, or may not be the first to file for protection of the inventions set forth in our patents or patent applications. As a result, we may not be able to obtain or maintain protection for certain inventions. If such inventions or related inventions are successfully patented by others, we may be required to obtain licenses under third- party patents to market our product candidates, as described in greater detail below. Therefore, enforceability and scope of our patents in the United States and in foreign countries cannot be predicted with certainty, and, as a result, any patents that we own or license may not provide sufficient protection against competitors. We may not be able to obtain or maintain patent protection from our pending patent applications, from those we may file in the future, or from those we may license from third parties. Moreover, even if we are able to obtain patent protection, such patent protection may be of insufficient scope to achieve our business objectives.

Our strategy depends on our ability to identify and seek and obtain patent protection for our discoveries. This process is expensive and time consuming, and we may not be able to file and prosecute successfully all necessary or desirable patent applications at a reasonable cost or in a timely manner or in all jurisdictions where protection may be commercially advantageous. Despite our efforts to protect our proprietary rights, unauthorized parties may be able to obtain and use information that we regard as proprietary. The issuance of a patent does not ensure that it is valid or enforceable, so even if we obtain patents, they may not be valid or enforceable against third parties. In addition, the issuance of a patent does not give us the right to practice the patented invention. Third parties may have blocking patents that could prevent us from marketing our own patented product and practicing our own patented technology. Third parties may also seek to market generic versions of any approved products by submitting ANDAs to the FDA in which they claim that patents owned or licensed by us are invalid, unenforceable and/or not infringed. Alternatively, third parties may seek approval to market their own products similar to or otherwise competitive with our products. In these circumstances, we may need to defend and/or assert our patents, including by filing lawsuits alleging patent infringement. In any of these types of proceedings, a court or other agency with jurisdiction may find our patents invalid and/or unenforceable. Even if we have valid and enforceable patents, these patents still may not provide protection against competing products or processes sufficient to achieve our business objectives.

The patent position of pharmaceutical or biotechnology companies, including ours, is generally uncertain and involves complex legal and factual considerations. The standards that the USPTO and its foreign counterparts use to grant patents are not always applied predictably or uniformly and can change. There is also no uniform, worldwide policy regarding the subject matter and scope of claims granted or allowable in pharmaceutical or biotechnology patents. The laws of some foreign countries do not protect proprietary information to the same extent as do the laws of the United States, and many companies have encountered significant problems and costs in protecting their proprietary information in these foreign countries. Outside of the United States, patent protection must be sought in individual jurisdictions, further adding to the cost and uncertainty of obtaining adequate patent protection outside of the United States. Accordingly, additional patents protecting our technology may not issue in the United States or in foreign jurisdictions, and any patents that do issue may not have claims of adequate scope to provide competitive advantage. Moreover, third parties may be able to successfully obtain claims and such claims may be broad. The allowance of broader claims may increase the incidence and cost of patent interference proceedings, opposition proceedings and/or reexamination proceedings, the risk of infringement litigation and the vulnerability of the claims to challenge. On the other hand, the allowance of narrower claims does not eliminate the potential for adversarial proceedings and may fail to provide a competitive advantage. Our issued patents may not contain claims sufficiently broad to protect us against third parties with similar technologies or products or provide us with any competitive advantage. Moreover, even after they have issued, our patents and any patent for which we have licensed or may license rights may be challenged, narrowed, invalidated or circumvented. If our patents are invalidated or otherwise limited or expire prior to the commercialization of our product candidates, other companies may be better able to develop products that compete with our products which could adversely affect our competitive business position, business prospects and financial condition. The following are examples of litigation and other adversarial proceedings or disputes that we could become a party to involving our patents or patents licensed to us:

- we or our partners may initiate litigation or other proceedings against third parties to enforce our patent rights;
- third parties may initiate litigation or other proceedings seeking to invalidate patents owned by or licensed to us or to obtain a declaratory judgment that their product or technology does not infringe our patents or patents licensed to us;
- third parties may initiate opposition or reexamination proceedings challenging the validity or scope of our patent rights, requiring us or our partners to participate in such proceedings to defend the validity and scope of our patents;
- there may be a challenge or dispute regarding inventorship or ownership of patents currently identified as being owned by or licensed to us;
- the USPTO may initiate an interference between patents or patent applications owned by or licensed to us and those of our competitors, requiring us or our collaborators to participate in an interference proceeding to determine the priority of invention, which could jeopardize our patent rights; or
- third parties may submit ANDAs to the FDA seeking approval to market generic versions of our future approved products prior to expiration of relevant patents owned by or licensed to us, requiring us to defend our patents, including by filing lawsuits alleging patent infringement.

These lawsuits and proceedings would be costly and could adversely affect our results of operations and divert the attention of our managerial and scientific personnel. A court or administrative body may decide that our patents are invalid or not infringed by a third party's activities or that the scope of certain issued claims must be further limited. An adverse outcome in a litigation or proceeding involving our own patents could limit our ability to assert our patents against these or other competitors and may curtail or preclude our ability to exclude third parties from making and selling similar or competitive products. Any of these occurrences could adversely affect our competitive business position, business prospects and financial condition. An adverse outcome in a dispute involving inventorship or ownership of our patents could, for example, subject us to additional royalty obligations and expand the number of product candidates that are subject to the royalty and other obligations of our license agreement with Tufts.

The degree of future protection for our proprietary rights is uncertain because legal means afford only limited protection and may not adequately protect our rights or permit us to gain or keep our competitive advantage. For example:

- others may be able to develop a platform that is similar to, or better than, ours in a way that is not covered by the claims of our patents;
- others may be able to make compounds that are similar to our product candidates but that are not covered by the claims of our patents;
- we might not have been the first to make the inventions covered by our pending patent applications;
- we might not have been the first to file patent applications for these inventions;
- others may independently develop similar or alternative technologies or duplicate any of our technologies;
- we may be unable to effectively protect our trade secrets;

- any patents that we obtain may not provide us with any competitive advantages or may ultimately be found invalid or unenforceable;
- we may not develop additional proprietary technologies that are patentable; or
- the patents of others may have an adverse effect on our business.

Our commercial success depends significantly on our ability to operate without infringing the patents and other proprietary rights of third parties.

Our and our partners' success will depend in part on our ability to operate without infringing the proprietary rights of third parties. Other entities may have or obtain patents or proprietary rights that could limit our ability to manufacture, use, sell, offer for sale or import our future approved products or impair our competitive position. Patents that we believe we do not infringe, but that we may ultimately be found to infringe, could be issued to third parties. In addition, to the extent that a third party develops new technology that covers our product candidates, we and our partners may be required to obtain licenses to that technology, which licenses may not be available or may not be available on commercially reasonable terms. Third parties may have or obtain valid and enforceable patents or proprietary rights that could block us from developing product candidates using our technology. Our failure to obtain a license to any technology that we require may materially harm our business, financial condition and results of operations. Moreover, our or our partners' failure to maintain a license to any technology that we requires may also materially harm our business, financial condition and results of operations. Furthermore, we would be exposed to a threat of litigation.

In the pharmaceutical industry, significant litigation and other proceedings regarding patents, patent applications, trademarks and other intellectual property rights have become commonplace. The types of situations in which we may become a party to such litigation or proceedings include:

- we or our partners may initiate litigation or other proceedings against third parties seeking to invalidate the patents held by those third parties or to obtain a judgment that our products or processes do not infringe those third parties' patents;
- if our competitors file patent applications that claim technology also claimed by us, we or our collaborators may be required to participate in interference or opposition proceedings to determine the priority of invention, which could jeopardize our patent rights and potentially provide a third party with a dominant patent position;
- if third parties initiate litigation claiming that our processes or products infringe their patent or other intellectual property rights, we and our collaborators will need to defend against such proceedings;
- if third parties initiate litigation claiming that our brand names infringe their trademarks, we and our collaborators will need to defend against such proceedings; and
- if a license to necessary technology is terminated, the licensor may initiate litigation claiming that our processes or products infringe or misappropriate their patent or other intellectual property rights and/or that we breached our obligations under the license agreement, and we and our collaborators would need to defend against such proceedings.

These lawsuits would be costly and could affect our results of operations and divert the attention of our managerial and scientific personnel. There is a risk that a court would decide that we or our partners are infringing the third party's patents and would order us or our collaborators to stop the activities covered by the patents. In that event, we or our partners may not have a viable alternative to the technology protected by the patent and may need to halt work on the affected product candidate. In addition, there is a risk that a court will order us or our partners to pay the other party damages. An adverse outcome in any litigation or other proceeding could subject us to significant liabilities to third parties and require us to cease using the technology that is at issue or to license the technology from third parties. We may not be able to obtain any required licenses on commercially acceptable terms or at all. Any of these outcomes could have a material adverse effect on our business.

The pharmaceutical and biotechnology industries have produced a significant number of patents, and it may not always be clear to industry participants, including us, which patents cover various types of products or methods of use. The coverage of patents is subject to interpretation by the courts, and the interpretation is not always uniform. If we are sued for patent infringement, we would need to demonstrate that our products or methods either do not infringe the patent claims of the relevant patent or that the patent claims are invalid, and we may not be able to do this. Proving invalidity is difficult. For example, in the United States, proving invalidity requires a showing of clear and convincing evidence to overcome the presumption of validity enjoyed by issued patents. Even if we are successful in these proceedings, we may incur substantial costs and divert management's time and attention in pursuing these proceedings, which could have a material adverse effect on us. If we are unable to avoid infringing the patent rights of others, we may be required to seek a license, defend an infringement action or challenge the validity of the patents in court. Patent litigation is costly and time consuming. We may not have sufficient resources to bring these actions to a successful conclusion. In addition, if we do not obtain a license, do not develop or obtain non-infringing technology, fail to defend an infringement action successfully or has infringed patents declared invalid, we may incur substantial monetary damages, encounter significant delays in bringing our product candidates to market and be precluded from manufacturing or selling our product candidates.

The cost of any patent litigation or other proceeding, even if resolved in our favor, could be substantial. Some of our competitors may be able to sustain the cost of such litigation and proceedings more effectively than we can because of their substantially greater resources. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could have a material adverse effect on our ability to compete in the marketplace. Patent litigation and other proceedings may also absorb significant management time.

If we or our partners fail to comply with our obligations under our intellectual property licenses with third parties, we could lose license rights that are important to our business.

We are currently party to an intellectual property license agreement with Tufts. The license agreement imposes, and we expect that future license agreements may impose, various diligence, milestone payment, royalty, insurance and other obligations on us. For example, we are required to use our best efforts to effect introduction of licensed products under the agreement into the United States commercial market. If we fail to comply with our obligations under the license, Tufts may have the right to terminate the license agreement, in which event we might not be able to market any product that is covered by the agreement, such as omadacycline. Termination of the license agreement or reduction or elimination of our licensed rights may result in us having to negotiate a new or reinstated license with less favorable terms. If Tufts were to terminate its license agreement with us for any reason, our business could be materially harmed. In the event that we are unable to maintain the Tufts license, we may lose the ability to exclude third parties from offering substantially identical products for sale and may even risk the threat of a patent infringement lawsuit from our former licensor based on our continued use of its intellectual property. Either of these events could adversely affect our competitive business position and harm our business.

Under our license agreement with Tufts, we are responsible for prosecution and maintenance of the licensed patents and patent applications, including payment of necessary government fees. In the event that any of the licensed patents or patent applications unintentionally lapse or are otherwise materially diminished in value, our relationship with Tufts could be harmed. This could result in termination of the license, loss of the rights to control prosecution of the licensed patents and patent applications and/or liability to Tufts for any loss.

If we or our partners are unable to protect the confidentiality of our proprietary information and know-how, the value of our technology and products could be adversely affected.

In addition to patent protection, we also rely on other proprietary rights, including protection of trade secrets, know-how and confidential and proprietary information. To maintain the confidentiality of trade secrets and proprietary information, our policy is to enter into confidentiality agreements with our employees, consultants, collaborators and others upon the commencement of their relationships with us. These agreements require that all confidential information developed by the individual or made known to the individual by us during the course of the individual's relationship with us be kept confidential and not disclosed to third parties. Our agreements with employees and our personnel policies also provide that any inventions conceived by the individual in the course of rendering services to us shall be our exclusive property. However, we may not obtain these agreements in all circumstances, and individuals with whom we have these agreements may not comply with their terms. In the event of unauthorized use or disclosure of our trade secrets or proprietary information, these agreements, even if obtained, may not provide meaningful protection, particularly for our trade secrets or other confidential information. To the extent that our employees, consultants or contractors use technology or know-how owned by third parties in their work for us, disputes may arise between us and those third parties as to the rights in related inventions. To the extent that an individual who is not obligated to assign rights in intellectual property to us is rightfully an inventor of intellectual property, we may need to obtain an assignment or a license to that intellectual property from that individual. Such assignment or license may not be available on commercially reasonable terms or at all.

Adequate remedies may not exist in the event of unauthorized use or disclosure of our confidential information. The disclosure of our trade secrets would impair our competitive position and may materially harm our business, financial condition and results of operations. Costly and time consuming litigation could be necessary to enforce and determine the scope of our proprietary rights, and failure to obtain or maintain trade secret protection could adversely affect our competitive business position. In addition, others may independently discover trade secrets and proprietary information, and the existence of our own trade secrets affords no protection against such independent discovery.

As is common in the biotechnology and pharmaceutical industries, we employ individuals who were previously or concurrently employed at research institutions and/or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. We may be subject to claims that these employees, or we, have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of their former employers or that patents and applications we have filed to protect inventions of these employees, even those related to one or more of our product candidates, are rightfully owned by their former or concurrent employer. Litigation may be necessary to defend against these claims. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to management.

Obtaining and maintaining our patent protection depends on compliance with various procedural, documentary, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents and/or applications will be due to the USPTO and various foreign patent offices at various points over the lifetime of the patents and/or applications. We have systems in place to remind us to pay these fees, and we rely on our outside counsel to pay these fees when due. Additionally, the USPTO and various foreign patent offices require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. We employ reputable law firms and other professionals to help us comply, and in many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with rules applicable to the particular jurisdiction. However, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. If such an event were to occur, it could have a material adverse effect on our business. In addition, we are responsible for the payment of patent fees for patent rights that we have licensed from other parties. If any licensor of these patents does not itself elect to make these payments, and we fail to do so, we may be liable to the licensor for any costs and consequences of any resulting loss of patent rights.

If we do not obtain protection under the Hatch-Waxman Amendments and similar foreign legislation by extending the term of patents covering each of our product candidates, our business may be materially harmed.

Depending upon the timing, duration and conditions of FDA marketing approval of our product candidates, one or more of our U.S. patents may be eligible for limited patent term extension under the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent term extension of up to five years for a patent covering an approved product as compensation for effective patent term lost during product development and the FDA regulatory review process. However, we may not receive an extension if we fail to apply within applicable deadlines, fail to apply prior to expiration of relevant patents or otherwise fail to satisfy applicable requirements. Moreover, the length of the extension could be less than our request. If we are unable to obtain patent term extension or the term of any such extension is less than we request, the period during which we can enforce our patent rights for that product may not extend beyond the current patent expiration dates and our competitors may obtain approval to market competing products sooner. As a result, our revenue could be reduced, possibly materially

Risks Related to Our Common Stock.

The trading price of our common stock is volatile.

The trading price of our common stock could be subject to significant fluctuations. Market prices for securities of clinical-stage pharmaceutical, biotechnology and other life sciences companies have historically been particularly volatile. Some of the factors that may cause the trading price of our common stock to fluctuate include:

- our ability to obtain regulatory approvals for omadacycline or other product candidates, and delays or failures to obtain such approvals;
- failure of any of our product candidates, if approved, to achieve commercial success;
- issues in manufacturing our approved products, if any, or product candidates;
- the results of our current and any future clinical trials of our product candidates;

- the entry into, or termination of, key agreements, including key commercial partner agreements;
- the initiation of, material developments in, or conclusion of litigation to enforce or defend any of our intellectual property rights or defend against the intellectual property rights of others;
- announcements by commercial partners or competitors of new commercial products, clinical progress or the lack thereof, significant contracts, commercial relationships or capital commitments;
- adverse publicity relating to the antibiotics market, including with respect to other products and potential products in such market;
- the introduction of technological innovations or new therapies that compete with our potential products;
- the loss of key employees;
- changes in estimates or recommendations by securities analysts, if any, who cover our common stock;
- general and industry-specific economic conditions that may affect our research and development expenditures;
- changes in the structure of healthcare payment systems; and
- period-to-period fluctuations in our financial results, including, in particular, our use of cash in operations.

Moreover, the stock markets in general have experienced substantial volatility that has often been unrelated to the operating performance of individual companies. These broad market fluctuations may also adversely affect the trading price of our common stock.

In the past, following periods of volatility in the market price of a company's securities, stockholders have often instituted class action securities litigation against those companies. Such litigation, if instituted, could result in substantial costs and diversion of management attention and resources, which could significantly harm our profitability and reputation.

We do not anticipate that we will pay any cash dividends in the foreseeable future.

On May 14, 2014, we announced that our board of directors had approved a special cash dividend of $15.96 per share. Cash was distributed for this dividend to our stockholders of record at the close of business on May 26, 2014. On October 14, 2014, we announced that our board of directors had approved a special dividend of $8.01 per share. Cash was distributed for this dividend to our stockholders of record at the close of business on October 24, 2014.

Other than future special dividends of any royalty income we may receive pursuant to the Purdue Collaboration Agreement, we expect that we will retain our future earnings to fund the development and growth of our business. As a result, capital appreciation, if any, of our common stock will be your sole source of gain, if any, for the foreseeable future.

Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of us more difficult and may prevent attempts by our stockholders to replace or remove our management.

Provisions in our certificate of incorporation and bylaws may delay or prevent an acquisition or a change in management. These provisions include a classified board of directors, a prohibition on actions by written consent of our stockholders and the ability of the board of directors to issue preferred stock without stockholder approval. In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporate Law, or DGCL, which prohibits stockholders owning in excess of 15% of our voting stock from merging or combining with us. Although we believe these provisions collectively will provide for an opportunity to receive higher bids by requiring potential acquirers to negotiate with our board of directors, they would apply even if the offer may be considered beneficial by some stockholders. In addition, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove then current management by making it more difficult for stockholders to replace members of the board of directors, which is responsible for appointing the members of management.

Future sales of shares by existing stockholders could cause the trading price of our common stock to decline.

If our existing stockholders sell, or indicate an intention to sell, substantial amounts of our common stock in the public market, the trading price of our common stock could decline. As of December 31, 2016, approximately 4.0 million shares of common stock are held by our directors, executive officers and other affiliates and are subject to volume limitations under Rule 144 under the Securities Act of 1933, as amended, or the Securities Act, and various vesting agreements. In addition, approximately 1.4 million shares of common stock that are subject to outstanding options and restricted stock units as of February 28, 2017 will become eligible for sale in the public market to the extent permitted by the provisions of various vesting agreements and Rules 144 and 701 under the Securities Act. If these additional shares are sold, or if it is perceived that they will be sold, in the public market, the trading price of our common stock could decline.

Because our merger resulted in an ownership change under Section 382 of the Internal Revenue Code for Transcept, Transcept's pre-merger net operating loss carryforwards and certain other tax attributes are subject to limitations. The net operating loss carryforwards and other tax attributes of the former Paratek entity and us may also be subject to limitations as a result of ownership changes.

If a corporation undergoes an "ownership change" within the meaning of Section 382 of the Internal Revenue Code of 1986, as amended, or Section 382, the corporation's net operating loss carryforwards and certain other tax attributes arising from before the ownership change are subject to limitations on use after the ownership change. In general, an ownership change occurs if there is a cumulative change in the corporation's equity ownership by certain stockholders that exceeds 50 percentage points over a rolling three-year period. Similar rules may apply under state tax laws. The Merger resulted in an ownership change for Transcept and, accordingly, Transcept's net operating loss carryforwards and certain other tax attributes are subject to limitations on their use after the Merger. Old Paratek's net operating loss carryforwards may also be subject to limitation as a result of prior shifts in equity ownership and/or the Merger. Additional ownership changes in the future could result in additional limitations on Transcept's, Old Paratek's and our net operating loss carryforwards. Consequently, even if we achieve profitability, we may not be able to utilize a material portion of Transcept's, Old Paratek's or our net operating loss carryforwards and other tax attributes, which could have a material adverse effect on cash flow and results of operations.

If securities or industry analysts do not publish research or reports or publish inaccurate or unfavorable research about us, the trading price and trading volume of our common stock could decline.

The trading market for our common stock is influenced by the research and reports that securities or industry analysts publish about us, our business and our common stock. As of December 31, 2016, we had research coverage by seven securities analysts. If the analysts who cover us downgrades our common stock or publishes inaccurate or unfavorable research regarding us or our business model, technology or stock performance, the trading price of our common stock would likely decline. If one or more of these analysts ceases coverage of us or fails to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause the trading price or trading volume of our common stock to decline. Moreover, the unpredictability of our financial results likely reduces the certainty, and therefore reliability, of the forecasts by securities or industry analysts of our future financial results, adding to the potential volatility of the trading price of our common stock.

Maintaining and improving our financial controls and the requirements of being a public company may strain our resources, divert management's attention and affect our ability to attract and retain qualified board members.

The trading market for our common stock is influenced by the research and reports that securities or industry analysts publish. As a public company, we are subject to the reporting requirements of the Exchange Act, the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, and The NASDAQ Global Market rules. The requirements of these rules and regulations have increased and will continue to significantly increase our legal and financial compliance costs, including costs associated with the hiring of additional personnel, making some activities more difficult, time-consuming or costly, and may also place undue strain on our personnel, systems and resources. The Exchange Act requires, among other things, that we file annual, quarterly and current reports with respect to our business and financial condition.

The Sarbanes-Oxley Act requires, among other things, that we maintain disclosure controls and procedures and internal control over financial reporting. Ensuring that we have adequate internal financial and accounting controls and procedures in place, as well as maintaining these controls and procedures, is a costly and time-consuming effort that needs to be re-evaluated frequently. Section 404 of the Sarbanes-Oxley Act, or Section 404, requires that we annually evaluate our internal control over financial reporting to enable management to report on, and our independent auditors to audit as of the end of each fiscal year, the effectiveness of those controls. In connection with the Section 404 requirements, both we and our independent registered public accounting firm test our internal controls and could, as part of that documentation and testing, identify material weaknesses, significant deficiencies or other areas for further attention or improvement.

Implementing any appropriate changes to our internal controls may require specific compliance training for our directors, officers and employees, require the hiring of additional finance, accounting and other personnel, entail substantial costs to modify our existing accounting systems, and take a significant period of time to complete. These changes may not, however, be effective in maintaining the adequacy of our internal controls, and any failure to maintain that adequacy, or consequent inability to produce accurate financial statements on a timely basis, could increase our operating costs and could materially impair our ability to operate our business. Moreover, adequate internal controls are necessary for us to produce reliable financial reports and are important to help prevent fraud. As a result, our failure to satisfy the requirements of Section 404 on a timely basis could result in the loss of investor confidence in the reliability of our financial statements, which in turn could cause the market value of our common stock to decline.

Various rules and regulations applicable to public companies make it more difficult and more expensive for us to maintain directors' and officers' liability insurance, and we may be required to accept reduced coverage or incur substantially higher costs to maintain coverage. If we are unable to maintain adequate directors' and officers' liability insurance, our ability to recruit and retain qualified officers and directors, especially those directors who may be deemed independent for purposes of The NASDAQ Global Market rules, will be significantly curtailed.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our headquarters are located in Boston, Massachusetts, where we occupy approximately 12,000 square feet of office space under a lease that expires in 2021. We also rent approximately 6,000 square feet of office space in King of Prussia, Pennsylvania on a monthly basis under a lease that expires in 2021.

Item 3. Legal Proceedings

Intermezzo Patent Litigation

In July 2012, we received notifications from three companies, Actavis Elizabeth LLC, or Actavis Elizabeth, Watson Laboratories, Inc.—Florida, or Watson, and Novel Laboratories, Inc., or Novel, in September 2012, from each of Par Pharmaceutical, Inc. and Par Formulations Private Ltd., together, the Par Entities, in February 2013 from Dr. Reddy's Laboratories, Inc. and Dr. Reddy's Laboratories, Ltd., together, Dr. Reddy's, and in July 2013 from TWi Pharmaceuticals, Inc., or Twi, stating that each has filed with the FDA an ANDA, that references Intermezzo. Refer to Item 3, *Legal Proceedings,* of our Annual Report on Form 10-K for the year ended December 31, 2015, as filed with the SEC on March 9, 2016, for a full description of the history of this litigation.

The United States District Court for the District of New Jersey, or the New Jersey District Court, held a consolidated trial between December 1, 2014 and December 15, 2014 involving Paratek, Purdue Pharma, and their patent infringement claims against Actavis Elizabeth, Novel, and Dr. Reddy's. The New Jersey District Court then received post-trial briefing and held a February 13, 2015 post-trial hearing. On March 27, 2015, the New Jersey District Court issued an order and accompanying opinion finding that: (a) the asserted claims of U.S. Patent Nos. 7,682,628, 8,242,131, and 8,252,809, are invalid as obvious; (b) Actavis Elizabeth, Novel, and Dr. Reddy's infringe the '131 patent; (c) Novel infringes the '628 patent; and (d) Novel and Dr. Reddy's infringe the '809 patent. On April 9, 2015, the New Jersey District Court entered final judgment consistent with the March 27, 2015 opinion and order referenced above. As a result of the New Jersey District Court's findings, the intangible assets representing Intermezzo product rights have been impaired and the related contingent obligation has been reduced in light of an expected decline in Intermezzo sales. Refer to Note 9, *Intangible Assets, Net*, and Note 14, *Fair Value Measurements,* for discussion of impairment and reduction in contingent obligations, respectively.

We and Purdue Pharma jointly appealed the New Jersey District Court's final judgment as to the '131 patent to the United States Court of Appeals for the Federal Circuit on May 6, 2015. On January 8, 2016 the United States Court of Appeals for the Federal Circuit affirmed the decision of the New Jersey District Court, and no opinion accompanied the judgment. On September 14, 2016, the defendants filed a warrant of satisfaction of judgment in the New Jersey District Court for the costs having been fully paid to the defendants.

On October 28, 2016, in satisfaction of our payment obligation of the proceeds of sale or disposition of the Intermezzo product rights to the former Transcept stockholders under the Merger Agreement, we executed the Royalty Sharing Agreement with the Special Committee. Under the Royalty Sharing Agreement, we agreed to pay to the former Transcept stockholders fifty percent of all royalty income received by us pursuant to the Purdue Collaboration Agreement, net of the Costs.

Patent Term Adjustment Suit

In January 2013, we filed suit in the Eastern District of Virginia against the USPTO, seeking recalculation of the patent term adjustment of the '131 Patent. Purdue Pharma has agreed to bear the costs and expenses associated with this litigation. In June 2013, the judge granted a joint motion to stay the proceedings pending a remand to the USPTO, in which the USPTO is expected to reconsider its patent term adjustment award in light of decisions in a number of appeals to the Federal Circuit, including Novartis AG v. Lee 740 F.3d 593 (Fed. Cir. 2014), or the Novartis decision. Since having issued final rules implementing the Novartis decision, the USPTO has been working through the civil action cases and issuing remand decisions. Our case was on remand until the USPTO made its decision on the recalculation of the patent term adjustment. On September 28, 2016, the USPTO issued a decision that the patent term adjustment is 1,038 days, from which the '131 Patent expiration would be March 26, 2029.

Other Legal Proceedings

From time to time we are involved in legal proceedings arising in the ordinary course of business. We believe there is no other litigation pending that could have, individually or in the aggregate, a material adverse effect on our results of operations or financial condition.

Item 4. Mine Safety Disclosures

None.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information

Our common stock is traded on The NASDAQ Global Market under the symbol "PRTK."

The following table sets forth the range of high and low sales prices of our common stock for the quarterly periods indicated as reported by The NASDAQ Global Market.

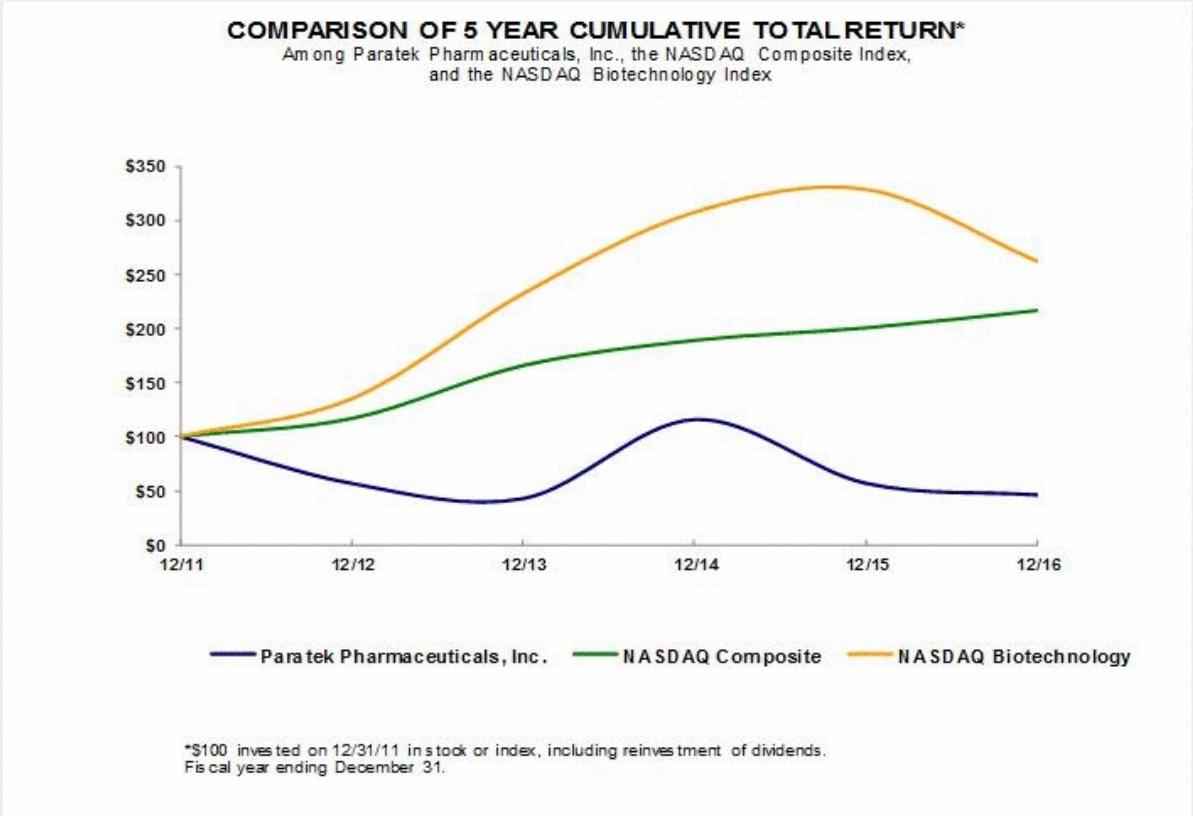
	Sales Price	
	High	Low
Year ended December 31, 2015		
First quarter	$ 38.88	$ 23.00
Second quarter	$ 32.78	$ 23.41
Third quarter	$ 28.74	$ 18.77
Fourth quarter	$ 24.00	$ 15.02
Year ended December 31, 2016		
First quarter	$ 19.45	$ 12.05
Second quarter	$ 18.92	$ 12.05
Third quarter	$ 14.34	$ 12.39
Fourth quarter	$ 15.70	$ 9.80

The closing price of our common stock as reported by The NASDAQ Global Market on February 28, 2017 was $14.95 per share. As of February 28, 2017, there were approximately 105 holders of record of our common stock.

Stock Performance Graph

The following graph compares cumulative total return of our common stock with the cumulative total return of (i) the NASDAQ Global Select Index, and (ii) the NASDAQ Biotechnology Index. The graph assumes (a) $100 was invested on December 31, 2011 in each of our Common Stock, the stocks comprising the NASDAQ Global Select Index and the stocks comprising the NASDAQ Biotechnology Index, and (b) the reinvestment of dividends. The comparisons shown in the graph are based on historical data and the stock price performance shown in the graph is not necessarily indicative of, or intended to forecast, future performance of our stock. Prior to the Reverse Merger on October 30, 2014, the stock of Transcept traded under the symbol "TSPT" on the Nasdaq Global Market and any comparison with Transcept's historical stock prices may not be meaningful.

This performance graph shall not be deemed "soliciting material" or to be "filed" with the SEC for purposes of Section 18 of the Securities and Exchange Act of 1934 or otherwise subject to the liabilities under that Section, and shall not be deemed incorporated by reference into any filing of Paratek Pharmaceuticals, Inc. under the Securities Act of 1933.



Dividend Policy

On May 14, 2014, we announced that our board of directors had approved a special cash dividend of $15.96 per share. This dividend was paid to our stockholders of record at the close of business on May 26, 2014.

On October 14, 2014, we announced that our board of directors had approved a special dividend of $8.01 per share. The dividend was paid to our stockholders of record at the close of business on October 24, 2014.

Other than future special dividends of any royalty income we may receive pursuant to the collaboration agreement, we entered into with Purdue Pharma that grants an exclusive license to Purdue Pharma to commercialize Intermezzo in the United States, or the Purdue Collaboration Agreement, we do not anticipate that we will pay any additional cash dividends on our common stock in the foreseeable future.

Recent Sales of Unregistered Securities

Set forth below is information regarding securities sold by us during 2016 that were not registered under the Securities Act of 1933, as amended, or the Securities Act. Also included is the consideration, if any, received by us for the securities and information relating to the section of the Securities Act, or rule of the Securities and Exchange Commission, or the SEC, under which exemption from registration was claimed.

On December 12, 2016, we entered into an amendment to the Loan and Security Agreement, or the Loan Agreement, with Hercules Technology II, L.P. and Hercules Technology III, L.P., together, Hercules, or the Loan Agreement Amendment. In connection with the Loan Agreement Amendment, we issued to each of Hercules Technology II, L.P. and Hercules Technology III, L.P. a warrant to purchase our common stock, the Loan Amendment Warrants. The Loan Amendment Warrants are exercisable for an aggregate of 37,148 shares of our common stock at an exercise price of $13.46 per share. The Loan Amendment Warrants' total relative fair value of $271,223 was determined using a Black-Scholes option-pricing model, as described in Note 12, *Common Stock*,

in the accompanying notes to the consolidated financial statements, and was included as a discount to the Term Loan. The exercise price and the number of shares are subject to adjustment upon a merger event, reclassification of the shares of common stock, subdivision or combination of the shares of common stock or certain dividends payments. The Loan Amendment Warrants are exercisable at any time until the earlier of five years from issuance and the consummation of a Public Acquisition, as defined in each of the Loan Amendment Warrant agreements, and will be exercised automatically on a net issuance basis if not exercised prior to the termination date and if the then-current fair market value of one share of common stock is greater than the exercise price then in effect.

No underwriters were involved in the foregoing sales of securities. The securities were issued to investors in reliance upon the exemption from the registration requirements of the Securities Act, as set forth in Section 4(a)(2), relative to transactions by an issuer not involving any public offering. Each purchaser of securities described above represented to us in connection with its purchase that it was an "accredited investor" as defined in Rule 501 of Regulation D promulgated under the Securities Act and was acquiring shares for its own account for investment purposes only and not with a view to, or for sale in connection with, any distribution thereof. The purchasers received written disclosures that the securities had not been registered under the Securities Act and that any resale must be made pursuant to a registration statement or an available exemption from such registration.

Securities authorized for issuance under equity compensation plans

The following table provides certain information with respect to all of our equity compensation plans in effect as of December 31, 2016:

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights	Weighted-Average Exercise Price of Outstanding Options ($)	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (1)
Equity compensation plans approved by stockholders	3,022,412 (2)	15.83 (3)	414,893 (4)
Equity compensation plans not approved by stockholders	286,833 (5)	22.63 (3)	73,167 (6)
Total	3,309,245	16.63	488,060

(1) The number of authorized shares under the 2015 Equity Incentive Plan, or the 2015 Plan, will automatically increase on January 1 of each year, for the period commencing on (and including) January 1, 2016 and ending on (and including) January 1, 2025, in an amount equal to 5% of the total number of shares of common stock outstanding on December 31st of the preceding calendar year. Notwithstanding the foregoing, the Board of Directors of the Company may act prior to January 1st of a given year to provide that there will be no January 1st increase in the Share Reserve for such year or that the increase in the Share Reserve for such year will be a lesser number of shares of common stock than would otherwise occur.
(2) Includes 2,493,958 shares relating to outstanding options, 454,000 relating to restricted stock units and 74,454 warrants outstanding.
(3) Represents the weighted-average exercise price of outstanding options.
(4) Includes 36,539 shares available under the 2009 Employee Stock Purchase Plan. 40,708 stock options and restricted stock units granted under the 2006 Equity Incentive Plan were cancelled or forfeited during the year ended December 31, 2016 and the shares underlying such awards became available for grant under the 2015 Plan. An additional 337,646 shares available under the 2015 Plan.
(5) All outstanding options relate to the 2015 Inducement Plan.

Issuer Purchases of Equity Securities

There were no repurchases of our common stock during the fourth quarter of 2016.

Item 6. Selected Financial Data

Prior to October 30, 2014 we were known as Transcept Pharmaceuticals, Inc., or Transcept. On October 30, 2014, Transcept completed a business combination with privately-held Paratek Pharmaceuticals, Inc., or Old Paratek, in accordance with the terms of the Agreement and Plan of Merger and Reorganization, dated as of June 30, 2014, by and among Transcept, Tigris Merger Sub, Inc.,

or Merger Sub, Tigris Acquisition Sub, LLC, or Merger LLC, and Old Paratek, or the Merger Agreement, pursuant to which Merger Sub merged with and into Old Paratek, with Old Paratek surviving as a wholly-owned subsidiary of Transcept, followed by the Merger of Old Paratek with and into Merger LLC, with Merger LLC surviving as a wholly-owned subsidiary of Transcept, these mergers together, the Merger. For accounting purposes, Transcept was deemed to be the acquired entity in the Merger, and the Merger was accounted for as a reverse acquisition. In connection with the Merger, we changed our name to Paratek Pharmaceuticals, Inc. and effected a 1-for-12 reverse stock split of our common stock. Our consolidated financial statements reflect the historical results of Old Paratek prior to the Merger and that of the combined company following the Merger, and do not include the historical results of Transcept Pharmaceuticals, Inc. prior to the completion of the Merger. All share and per share disclosures have been retroactively adjusted to reflect the exchange of shares in the Merger, and the 1-for-12 reverse split of our common stock on October 30, 2014.

The following selected financial data has been derived from our audited consolidated financial statements. The information below is not necessarily indicative of the results of future operations and should be read in conjunction with Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations," and Item 1A, "Risk Factors," of this Annual Report on Form 10-K, and the consolidated financial statements and related notes thereto included in Item 8, "Financial Statements and Supplementary Data", of this Annual Report on Form 10-K, in order to fully understand factors that may affect the comparability of the information presented below. All per share amounts reflect the conversion of Old Paratek common stock to our common stock on October 30, 2014 at the rate of 0.0675 shares of common stock, after giving effect to the 1-for-12 reverse stock split, for each share of Old Paratek common stock outstanding on October 30, 2014.

	Year Ended December 31,				
	2016	2015	2014	2013	2012
	(in thousands, except share and per share data)				
Consolidated Statements of Operations:					
Revenue	$ 29	$ -	$ 4,342	$ 478	$ 3,063
Operating expenses:					
Research and development	83,460	50,765	5,014	4,631	10,734
General and administrative	26,400	19,988	5,848	3,387	10,492
Merger-related costs	—	—	1,278	—	—
Impairment of intangible assets	—	2,860	—	—	—
Change in fair value of contingent consideration	(345)	(3,560)	-	-	-
Total operating expenses	109,515	70,053	12,140	8,018	21,226
Loss from operations	(109,486)	(70,053)	(7,798)	(7,540)	(18,163)
Non-operating (expense) income, net	(2,150)	(807)	(10,037)	2,887	(25,030)
Net loss	(111,636)	(70,860)	(17,835)	(4,653)	(43,193)
Unaccreted dividends on convertible preferred stock	—	—	(1,927)	(6,766)	(6,766)
Net loss attributable to common stockholders	$ (111,636)	$ (70,860)	$ (19,762)	$ (11,419)	$ (49,959)
Net loss per share, basic and diluted	$ (5.51)	$ (4.29)	$ (7.82)	$ (185.13)	$ (1,312.29)
Weighted average common shares outstanding, basic and diluted	20,253,082	16,501,912	2,528,595	61,680	38,070

	As of December 31,	
	2016	2015
Selected Consolidated Balance Sheet Data:		
Cash, cash equivalents and marketable securities	$ 128,038	$ 131,302
Total assets	135,732	145,918
Working capital	111,688	121,915
Current liabilities	20,412	20,502
Long-term obligations, less current portion	43,728	24,176
Common stock and additional paid-in capital	451,970	369,966
Accumulated deficit	(380,362)	(268,726)
Total stockholders' equity	71,592	101,240

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following Management's Discussion and Analysis of Financial Condition and Results of Operations contains certain statements that are not strictly historical and are "forward-looking" statements within the meaning of the Private Securities Litigation Reform Act of 1995 and involve a high degree of risk and uncertainty. Actual results may differ materially from those projected in the forward-looking statements due to other risks and uncertainties. All forward-looking statements included in this section are based on information available to us as of the date hereof, and we assume no obligation to update any such forward-looking statement, except as required by law.

Prior to October 30, 2014, we were known as Transcept Pharmaceuticals, Inc. On October 30, 2014, we completed a business combination, referred to as the Merger, with Paratek Pharmaceuticals, Inc., a private company. For accounting purposes, Transcept Pharmaceuticals was deemed to be the acquired entity in the Merger.

Company Overview

We are a clinical stage biopharmaceutical company focused on the development and commercialization of innovative therapeutics based upon tetracycline chemistry. We have used our expertise in biology and tetracycline chemistry to create chemically diverse and biologically distinct small molecules derived from the minocycline core structure. Our two lead product candidates are the antibacterials omadacycline and sarecycline. We have generated innovative small molecule therapeutic candidates based upon medicinal chemistry-based modifications, according to structure-based activity, of all positions of the core tetracycline molecule. These efforts have yielded molecules with broad-spectrum antibiotic properties and narrow-spectrum antibiotic properties, and molecules with potent anti-inflammatory properties to fit specific therapeutic applications. This proprietary chemistry platform has produced many compounds that have shown interesting characteristics in various *in vitro* and *in vivo* efficacy models. Omadacycline and sarecycline are examples of molecules that were synthesized from this chemistry discovery platform.

Omadacycline is the first in a new class of aminomethylcycline antibiotics. Omadacycline is a broad-spectrum, well-tolerated once-daily oral and intravenous, or IV, antibiotic. We believe that omadacycline has the potential to become the primary antibiotic choice of physicians for use as a broad-spectrum monotherapy antibiotic for acute bacterial skin and skin structure infections, or ABSSSI, community-acquired bacterial pneumonia, or CABP, urinary tract infection, or UTI, and other serious community-acquired bacterial infections, where resistance is of concern. We believe omadacycline, if approved, will be used in the emergency room, hospital and community care settings. We have designed omadacycline to provide potential advantages over existing antibiotics, including activity against resistant bacteria, broad spectrum antibacterial activity, oral and IV formulations with once-daily dosing, no known drug interactions, and a favorable safety and tolerability profile.

In the fall of 2013, the U.S. Food and Drug Administration, or the FDA, agreed to the design of our omadacycline Phase 3 studies for ABSSSI and CABP through the Special Protocol Assessment, or SPA, process. In addition, the FDA confirmed that positive data from the individual studies for ABSSSI and CABP would be sufficient to support approval of omadacycline for each indication and for both oral and IV formulations in the United States. In addition to Qualified Infectious Disease Product, or QIDP, designation, on November 4, 2015, the FDA granted omadacycline Fast Track designation for the development of omadacycline in ABSSSI, CABP, and complicated Urinary Tract Infections, or cUTI. Fast Track designation facilitates the development, and expedites the review of drugs that treat serious or life-threatening conditions and that fills an unmet medical need. In February 2016, we reached agreement with the FDA on the terms of a pediatric program associated with the Pediatric Research and Equity Act. The FDA has granted Paratek a waiver from conducting studies with omadacycline in children less than eight years old due the risk of teeth discoloration, a known class effects of tetracycline's. In addition, the FDA has granted a deferral on conducting studies in children eight years and older until safety and efficacy is established in adults. In May 2016, we received confirmation from the FDA that the oral-only ABSSSI study design was acceptable and consistent with the currently posted guidance for industry.

Scientific advice received through the centralized procedure in Europe confirmed general agreement on the design and choice of comparators of the Phase 3 trials for ABSSSI and CABP and noted that approval based on a single study in each indication could be possible but would be subject to more stringent statistical standards than Market Authorization Applications, or MAA, programs that conduct two pivotal Phase 3 studies per indication. We believe that the inclusion of the second Phase 3 oral-only study in ABSSSI, if positive, strengthens the data package for submission of an MAA filing for approval in the European Union, or EU.

Omadacycline entered Phase 3 clinical development in June 2015 for the treatment of ABSSSI and in November 2015 for the treatment of CABP. Both of these studies utilized initiation of IV therapy with transitions to oral based therapy on clinical response. During the conduct of these studies, an independent data safety monitoring board, or DSMB, completed multiple planned reviews of the safety data. Following each meeting, the DSMB recommended that the studies continue without modification to the protocols or study conduct. In June 2016, we announced positive top-line efficacy and safety data for the ABSSSI study, and we initiated a Phase 3 clinical study with oral-only administration of omadacycline in ABSSSI compared to oral-only linezolid in August 2016. In January

2017, we announced completion of enrollment in the CABP study, and we anticipate top-line results early in the second quarter of 2017. We anticipate top-line results for the oral-only ABSSSI study as early as the late second quarter of 2017.

We recently completed several clinical Phase 1 studies with omadacycline. In these Phase 1 studies, omadacycline was generally safe and well-tolerated, consistent with prior Phase 1 studies. In May 2016, we initiated our first oral-only and IV-to-oral study of omadacycline dosed for five days in a Phase 1b clinical study in patients with a UTI. This Phase 1b UTI study was recently completed. Data from this study showed that omadacycline achieved proof of principle, by demonstrating high concentration levels of omadacycline in urine, across IV-to-oral and oral-only dosing regimens.

We have also recently completed clinical Phase 1 studies with omadacycline that are needed for inclusion in the planned New Drug Application, or NDA, regulatory filing with the FDA. These studies include pharmacokinetic, or PK, studies in special populations (end-stage renal disease subjects, or ESRD subjects) and PK-lung penetration studies in healthy volunteers. A recently completed Phase 1 study of ESRD subjects was designed to evaluate the absorption and elimination of omadacycline compared to matched healthy control subjects. Results from this study showed that the absorption and elimination of omadacycline in ESRD subjects appears to be similar to healthy control subjects, suggesting that dose adjustments should not be required in subjects who have severe renal disease. In another recently completed Phase 1 study in healthy volunteers, which was designed to evaluate the PK relationship between human plasma concentrations and lung concentrations, omadacycline demonstrated higher concentration levels in bronchoalveolar lavage, or BAL, lung fluid when compared with plasma concentrations. This result supports the potential utility of omadacycline in the treatment of lower respiratory tract bacterial infections caused by susceptible pathogens. A third Phase 1 study in healthy volunteers has been completed that evaluated the PK exposure profile of three oral-only dosing regimens of omadacycline administered for five days in healthy volunteers. In this Phase 1 study, across three oral dosing regimens of omadacycline, PK plasma levels increased with higher doses of omadacycline, demonstrating dose proportionality. Assuming positive Phase 3 study results, we plan to include and submit these data in an NDA for the treatment of ABSSSI and CABP in the first half of 2018.

In October 2016, we announced that we entered into a Cooperative Research and Development Agreement, or CRADA, with the U.S. Army Medical Research Institute of Infectious Diseases, or USAMRIID, to study omadacycline against pathogenic agents causing infectious diseases of public health and biodefense importance. These studies are designed to confirm humanized dosing regimens of omadacycline in order to study the efficacy of omadacycline against biodefense pathogens, including Yersinia pestis, or plague, and Bacillus anthracis, or anthrax. Funding support for the trial has been made available through the Defense Threat Reduction Agency, or DTRA/ Joint Science and Technology Office and Joint Program Executive Office for Chemical and Biological Defense / Joint Project Manager Medical Countermeasure Systems / BioDefense Therapeutics.

Our second Phase 3 antibacterial product candidate, sarecycline, also known as WC3035, is a new, once-daily, tetracycline-derived compound designed for use in the treatment of acne and rosacea. We believe that, based upon the data generated to-date, sarecycline possesses favorable anti-inflammatory activity, plus narrow-spectrum antibacterial activity relative to other tetracycline-derived molecules, oral bioavailability, does not cross the blood-brain barrier, and favorable PK properties that we believe make it particularly well-suited for the treatment of inflammatory acne in the community setting. We have exclusively licensed U.S. development and commercialization rights to sarecycline for the treatment of acne to Allergan plc, or Allergan, while retaining development and commercialization rights in the rest of the world. Allergan has informed us that sarecycline entered Phase 3 clinical trials for the treatment of acne vulgaris in December 2014 and anticipates that top-line data from the Phase 3 trial of sarecycline will be available in the first half of 2017. We also granted Allergan an exclusive license to develop and commercialize sarecycline for the treatment of rosacea in the United States, which converted to a non-exclusive license in December 2014 after Allergan did not exercise its development option with respect to rosacea. There are currently no clinical trials with sarecycline in rosacea underway.

To date, we have devoted a substantial amount of our resources to research and development efforts, including conducting clinical trials for omadacycline, protecting our intellectual property and providing general and administrative support for these operations. We have not yet submitted any product candidates for approval by regulatory authorities, and we do not currently have rights to any products that have been approved for marketing in any territory. We have not generated any revenue from product sales and to date have financed our operations primarily through sale of our common and convertible preferred stock, note financings, research and development collaborations.

We have incurred significant losses since our inception in 1996. Our accumulated deficit at December 31, 2016 was $380.4 million and our net loss for the year ended December 31, 2016 was $111.6 million. A substantial amount of our net losses resulted from costs incurred in connection with our research and development programs, general and administrative costs associated with our operations. The net losses and negative operating cash flows incurred to date, together with expected future losses, have had, and likely will continue to have, an adverse effect on our stockholders' equity and working capital. The amount of future net losses will depend, in part, on the rate of future growth of our expenses and our ability to generate offsetting revenue, if any. We expect to continue to incur significant expenses and operating losses for the foreseeable future.

We do not expect to generate revenue from product sales unless and until we or our partner Allergan successfully complete development and obtain marketing approval for one or more of our product candidates. Accordingly, we anticipate that we will need to raise additional capital in order to complete the development and commercialization of omadacycline and to advance the development of our other product candidates. Until we can generate a sufficient amount of product revenue to finance our cash requirements, we expect to finance our future cash needs primarily through a combination of public and private equity offerings, debt or other structured financings, strategic collaborations and grant funding. We may be unable to raise capital when needed or on attractive terms, which would force us to delay, limit, reduce or terminate our development programs or commercialization efforts. We will need to generate significant revenue to achieve and sustain profitability, and we may never be able to do so.

Financing Activities

On January 12, 2015, we filed a registration statement on Form S-3 with the SEC, as amended on April 24, 2015 and declared effective on April 27, 2015, to sell shares of our common stock, par value $0.001 per share, in an aggregate amount of up to $200.0 million to the public in a one or more registered offerings. Under this shelf registration statement, we completed an underwritten offering on May 5, 2015 of 3,089,000 shares of common stock at a public offering price of $24.50 per share, which includes 229,000 shares of common stock issued upon the exercise, in part, by the underwriters of an option to purchase additional shares. The aggregate proceeds received by us, after underwriting discounts and commissions and other offering expenses, were $70.4 million. We completed an underwritten offering in June 2016 of 4,887,500 shares of common stock at a public offering price of $13.00 per share, which included 637,500 shares of common stock issued upon the exercise by the underwriters of an option to purchase additional shares from us. The net proceeds received by us, after underwriting discounts and commissions and other estimated offering expenses, were $59.3 million.

On September 30, 2015, we entered into the Loan Agreement with Hercules. Under the Loan Agreement, Hercules provided access to term loans with an aggregate principal amount of up to $40.0 million. We initially drew a principal amount of $20.0 million, which was funded on September 30, 2015. In connection with the Loan Agreement, we issued to each one of Hercules Technology II, L.P. and Hercules Technology III, L.P., a warrant to purchase 16,346 shares of our common stock (32,692 shares of common stock in total) at an exercise price of $24.47 per share. In addition, Hercules Technology Growth Capital, Inc. entered into a Stock Purchase Agreement with us to purchase 44,782 shares of our common stock resulting in proceeds to us of approximately $1.0 million. On December 12, 2016, we entered into the Loan Agreement Amendment. The Loan Agreement Amendment increased the amount that we may borrow by $10.0 million. The additional $10.0 million tranche, or the Additional Tranche, is available at our option through September 15, 2017, but conditioned upon the completion of either a second Phase 3 clinical evaluation of omadacycline in patients with ABSSSI or in patients with CABP that is supportive of us making a NDA filing with the FDA. If drawn, the Additional Tranche shall bear interest and have the same maturity as all other loans outstanding under the Loan Agreement. Concurrently with the closing of the Loan Agreement Amendment, we borrowed an additional $20.0 million under the Loan Agreement. In addition, we issued to each one of Hercules Technology II, L.P. and Hercules Technology III, L.P. a warrant to purchase 18,574 shares of our common stock (37,148 shares of common stock in total) at an exercise price of $13.46 per shares, or the Loan Amendment Warrants.

On October 15, 2015, we entered into a Controlled Equity Offering℠ Sales Agreement, or the 2015 Sales Agreement, with Cantor Fitzgerald & Co., or Cantor, under which we could, at our discretion, from time-to-time sell shares of our common stock, with a sales value of up to $50.0 million. We provided Cantor with customary indemnification rights, and Cantor was entitled to a commission at a fixed rate of 3% of the gross proceeds per share sold. Sales of the shares under the 2015 Sales Agreement have been and, if there are additional sales under the 2015 Sales Agreement, will be made in transactions deemed to be "at the market offerings" as defined in Rule 415 under the Securities Act of 1933, as amended. We initiated sales of shares under the 2015 Sales Agreement in March 2016, and sold an aggregate of 860,014 shares of common stock through December 31, 2016, resulting in net proceeds of $11.6 million after deducting commissions of $0.4 million. As of February 24, 2017, an additional 870,078 shares were sold under the 2015 Sales Agreement subsequent to December 31, 2016, resulting in net proceeds of $13.1 million after deducting commissions of $0.4 million, which will be recognized during the first quarter of 2017.

On February 28, 2017, we entered into a second Controlled Equity Offering℠ Sales Agreement, or the 2017 Sales Agreement, with Cantor, under which we could, at our discretion, from time-to-time sell shares of our common stock, with a sales value of up to $50.0 million. We provided Cantor with customary indemnification rights, and Cantor was entitled to a commission at a fixed rate of 3% of the gross proceeds per share sold. Any sales of the shares under the 2017 Sales Agreement will be made in transactions deemed to be "at the market offerings" as defined in Rule 415 under the Securities Act of 1933, as amended.

We have used and we intend to continue to use the net proceeds from the above offerings, as well as the Loan Agreement and Loan Agreement Amendment, together with our existing capital resources, to fund our ongoing Phase 3 oral-only study and to close out our IV-to-oral studies of omadacycline for the treatment of ABSSSI and CABP, activities required to support an NDA submission for omadacycline for the treatment of ABSSSI and CABP, the manufacture of validation batches and the potential establishment of secondary manufacturing suppliers for our active pharmaceutical ingredient, or API, and drug product, and for working capital and other general corporate purposes.

Financial Operations Overview

Revenue

We have not yet generated any revenue from product sales. All of our revenue to date has been derived from license fees, milestone payments, royalty income, reimbursements for research, development and manufacturing activities under licenses and collaborations, grant payments received from the NIH, and other non-profit organizations. We do not expect to generate revenue from product sales prior to 2018, at the earliest.

In October 2016, we executed a royalty sharing agreement, or the Royalty Sharing Agreement, with the Special Committee of the Company's Board of Directors, or the Special Committee, a committee established in connection with the Merger. Under the Royalty Sharing Agreement, we agreed to pay to the former Transcept stockholders fifty percent of all royalty income received by us pursuant to the Purdue Collaboration Agreement, net of all costs, fees and expenses incurred by us in connection with the Purdue Collaboration Agreement, related agreements, the Intermezzo product and the administration of the royalty income to the Transcept stockholders. As such, our royalty revenue stream represents fifty percent of royalty income received pursuant to the Purdue Collaboration Agreement.

Research and Development Expense

Research and development expenses consisted primarily of costs directly incurred by us for the development of our product candidates, which include:

- expenses incurred under agreements with clinical research organizations, or CROs, and investigative sites that will conduct our clinical trials;
- the cost of acquiring and manufacturing preclinical and clinical study materials and developing manufacturing processes;
- direct employee-related expenses, including salaries, benefits, travel and stock-based compensation expense of our research and development personnel;
- allocated facilities, depreciation, and other expenses, which include rent and maintenance of facilities, insurance and other supplies; and
- costs associated with preclinical activities and regulatory compliance.

Research and development costs are expensed as incurred. Costs for certain development activities are recognized based on an evaluation of the progress to completion of specific tasks using information and data provided to us by our vendors and our clinical sites.

We cannot determine with certainty the duration and completion costs of the current or future clinical trials of our product candidates or if, when, or to what extent we will generate revenues from the commercialization and sale of any of our product candidates for which we or any partner obtain regulatory approval. We may never succeed in achieving regulatory approval for any of our product candidates. The duration, costs and timing of clinical trials and development of our product candidates will depend on a variety of factors, including:

- the scope, rate of progress, and expense of our ongoing, as well as any additional, clinical trials and other research and development activities;
- future clinical trial results;
- potential changes in government regulation; and
- the timing and receipt of any regulatory approvals.

A change in the outcome of any of these variables with respect to the development of a product candidate could mean a significant change in the costs and timing associated with the development of that therapeutic candidate. For example, if the FDA, or another regulatory authority were to require us to conduct clinical trials beyond those that we currently anticipate will be required for the completion of the clinical development of product candidates, or if we experience significant delays in the enrollment in any clinical trials, we could be required to expend significant additional financial resources and time on the completion of clinical development.

Our research and development activities in 2014 were significantly curtailed as we worked within liquidity constraints. In particular, we decreased:

- external spending related to the development of omadacycline due to the delay in our clinical development program;
- payroll and benefits costs through a reduction in force and other attrition;
- facilities-related spending (as a result of the early termination of our lease on laboratory space); and
- external spending on preclinical product candidates.

We manage certain activities, such as clinical trial operations, manufacture of therapeutic candidates, and preclinical animal toxicology studies, through third-party CROs. The only costs we track by each product candidate are external costs such as services provided to us by CROs, manufacturing of preclinical and clinical drug product, and other outsourced research and development expenses. We do not assign or allocate to individual development programs internal costs such as salaries and benefits, facilities, lab supplies and preclinical research and studies. Our external research and development expenses for omadacycline and other projects during 2016, 2015 and 2014, are as follows:

	Year Ended December 31,		
(in thousands)	**2016**	**2015**	**2014**
Omadacycline	$ 71,709	$ 43,654	$ 1,834
Other external research and development	—	100	24
Total external costs	71,709	43,754	1,858
Other research and development costs	11,751	7,011	3,156
Total	$ 83,460	$ 50,765	$ 5,014

General and Administrative Expense

General and administrative expense consists primarily of salaries and other related costs for personnel, including benefits, and stock-based compensation in our executive, legal, finance, business development, information technology, general operations and human resources departments.

Interest Expense

Interest expense represents interest incurred on the Term Loan and Loan Agreement Amendment entered into with Hercules on September 30, 2015 and December 12, 2016, respectively, and the adjustment of our marketable securities to amortized cost.

Interest Income

Interest income represents interest earned on our money market funds and marketable securities purchased.

Results of Operations

Comparison of the Years Ended December 31, 2016 and 2015

(in thousands)	2016	2015	Change
Revenue			
Royalty revenue	$ 29	$ —	$ 29
Total revenue	29	—	29
Operating expenses:			
Research and development	83,460	50,765	32,695
General and administrative	26,400	19,988	6,412
Impairment of intangible assets	—	2,860	(2,860)
Changes in fair value of contingent consideration	(345)	(3,560)	3,215
Total operating expenses	109,515	70,053	39,462
Loss from operations	(109,486)	(70,053)	(39,433)
Other income and expenses:			
Interest income	1,069	—	1,069
Interest expense	(3,223)	(770)	(2,453)
Other (losses) and gains, net	4	(37)	41
Net loss	$ (111,636)	$ (70,860)	$ (40,776)

Revenue

Revenue for the year ended December 31, 2016 consists of fifty percent of net royalties received pursuant to the Royalty Sharing Agreement executed during the fourth quarter of 2016. We did not earn revenue during the year ended December 31, 2015.

Research and Development Expense

The increase in research and development expense for the year ended December 31, 2016 was primarily the result of our ongoing clinical development of omadacycline. During the year ended December 31, 2016, we incurred approximately $43.8 million in expense associated with Phase 3 studies for the treatment of ABSSSI and CABP, including an oral-only Phase 3 study, which represents an increase of $19.6 million compared to $24.2 million in the same period in prior year. This increase is associated primarily with strong enrollment performance in both the ABSSSI and CABP registration studies and initiation of a Phase 3 ABSSSI oral-only study, resulting in an increased recognition of expenses related to study start-up, CRO fees, investigator fees, and costs associated with clinical sites and laboratories. We also incurred $9.6 million in production costs for omadacycline registration batches and manufacturing process validation work, which represents a decrease of $0.9 million compared to the same period in prior year. In addition, we incurred $20.4 million in costs related to omadacycline research and development activities, including Phase 1 studies, and $9.7 million in salaries and benefits, including stock-based compensation, which represents an increase of $9.5 million and $4.5 million, respectively, compared to the same period in prior year.

General and Administrative Expense

The increase in general and administrative costs for the year ended December 31, 2016 was primarily due to growth in our corporate infrastructure to support a public company. Salaries and benefits, including stock-based compensation, increased $6.4 million for the year ended December 31, 2016.

Impairment of Intangible Assets

We recorded impairment charges of $2.9 million against our intangible assets, Intermezzo and TO-2070 product rights, during the year ended December 31, 2015. Intermezzo products rights were impaired by $2.8 million as a result of the outcome of litigation that invalidated several Intermezzo patents as obvious and triggered an evaluation of the carrying value and related contingent liability in light of an expected decline in Intermezzo sales. TO-2070 product rights were impaired by $0.1 million due to significant uncertainty concerning SNBL's ability to find a potential partner to co-develop the rights as of December 31, 2015 and triggered an evaluation of the carrying value and related contingent liability. Refer to Note 9, *Intangible Assets, Net,* in the accompanying notes to the consolidated financial statements for additional information. No such impairment was recorded during the year ended December 31, 2016.

Changes in Fair Value of Contingent Obligations

We recorded a $0.3 million reduction in the fair value of our contingent obligations to former Transcept stockholders during the year ended December 31, 2016. A decrease of $0.2 million is attributable to the results of lower projected future sales of the Intermezzo product due to generic market entry. The remainder is due to the elimination of the contingent obligation for the TO-2070 license rights, as no payments were received by us pursuant to the termination of the license agreement with the Company entered into with SNBL, or SNBL License Agreement, prior to the second anniversary of the Merger.

The reduction in fair value of contingent obligation of $3.6 million for the year ended December 31, 2015 was identified in conjunction with the outcome of litigation that invalidated several Intermezzo patents as obvious and triggered an evaluation of the carrying value of the Intermezzo product rights and related contingent obligations in light of an expected decline in Intermezzo sales. In addition, during the fourth quarter, we were made aware of the unlikelihood that SNBL will find a potential partner to co-develop the TO-2070 license rights. This significant uncertainty triggered an evaluation of the carrying value of the TO-2070 product rights and related contingent obligation to former Transcept stockholders.

Refer to Note 14, *Fair Value Measurements,* in the accompanying notes to the consolidated financial statements for additional information.

Interest Income

Interest income represents $1.0 million of interest earned on our money market funds and marketable securities during the year ended December 31, 2016. We began investing in marketable securities during the year ended December 31, 2016.

Interest Expense

Interest expense, net for the year ended December 31, 2016 represents a full year of interest incurred on the Term Loan and Loan Agreement Amendment entered into with Hercules on September 30, 2015 and December 12, 2016, respectively, of $2.6 million as well as net amortization of our marketable securities of $0.6 million. Interest expense for the year ended December 31, 2015 represents the accretion of interest expense on the Intermezzo Reserve plus three months of interest incurred on the Term Loan.

Comparison of the Years Ended December 31, 2015 and 2014

	Year Ended December 31,		
(in thousands)	**2015**	**2014**	**Change**
Revenue			
Royalty revenue	$ —	$ 4,342	$ (4,342)
Total revenue	—	4,342	(4,342)
Operating expenses:			
Research and development	50,765	5,014	45,751
General and administrative	19,988	5,848	14,140
Merger-related costs	—	1,278	(1,278)
Impairment of intangible assets	2,860	—	2,860
Changes in fair value of contingent consideration	(3,560)	—	(3,560)
Total operating expenses	70,053	12,140	57,913
Loss from operations	(70,053)	(7,798)	(62,255)
Other income and expenses:			
Interest expense, net	(770)	(718)	(52)
Loss on exchange of non-convertible notes for common stock	—	(9,020)	9,020
(Loss) gain on mark-to-market of notes and warrants	—	(120)	120
Other (losses) and gains, net	(37)	(179)	142
Net loss	(70,860)	(17,835)	(53,025)
Unaccreted dividends on convertible preferred stock	—	(1,927)	1,927
Net loss attributable to common stockholders	$ (70,860)	$ (19,762)	$ (51,098)

Revenue

We did not earn research and development collaboration revenue during the year ended December 31, 2015. Research and development collaboration revenue in 2014 primarily represents a $4.0 million milestone payment from Allergan for commencement of Phase 3 clinical trials of sarecycline and recognition of $0.3 million in deferred revenue upon the termination of a collaborative research, development and commercialization agreement with a leading global animal health provider. For 2014, revenue from Allergan represented 92% of our research and development revenue.

Research and Development Expense

The increase in research and development expense for the year ended December 31, 2015 was primarily the result of initiation of our planned Phase 3 clinical trials of omadacycline and comprises higher costs incurred for CRO fees, investigator fees, professional fees and costs associated with clinical sites and laboratories of $28.8 million, manufacturing of clinical material and registration batches of $12.4 million, personnel-related costs of $3.0 million, primarily from increased headcount, as well as other research and development costs of $0.9 million associated with travel, technology, licensees and seminars.

General and Administrative Expense

The increase in general and administrative costs for the year ended December 31, 2015 was primarily due to growth in our corporate infrastructure to support a public company. Professional and consulting fees increased $6.7 million for the year compared to the prior year primarily due to higher legal, finance and accounting, and market research costs. Salaries and benefits, including stock-based compensation, increased $5.5 million for the year ended December 31, 2015. Other general and administrative expenses including insurance, facility and office expenses, and travel increased $1.6 million for the year ended December 31, 2015 compared to the prior year due to our overall growth. During 2014, we also incurred direct merger-related third-party costs of $1.3 million.

Impairment of Intangible Assets

We recorded impairment charges of $2.9 million against our intangible assets, Intermezzo and TO-2070 product rights, during the year ended December 31, 2015. Intermezzo products rights were impaired as a result of the outcome of litigation that invalidated several Intermezzo patents as obvious and triggered an evaluation of the carrying value and related contingent liability in light of an expected decline in Intermezzo sales. TO-2070 product rights were impaired due to significant uncertainty concerning SNBL's ability to find a potential partner to co-develop the rights as of December 31, 2015 and triggered an evaluation of the carrying value and related contingent liability.

Changes in Fair Value of Contingent Obligations

We recorded a $3.6 million reduction in the fair value of our contingent obligations to former Transcept stockholders during the year ended December 31, 2015. The reduction in fair value was identified in conjunction with the outcome of litigation that invalidated several Intermezzo patents as obvious and triggered an evaluation of the carrying value of the Intermezzo product rights and related contingent obligations in light of an expected decline in Intermezzo sales. In addition, during the fourth quarter, we were made aware of the unlikelihood that SNBL will find a potential partner to co-develop the TO-2070 license rights. This significant uncertainty triggered an evaluation of the carrying value of the TO-2070 product rights and related contingent obligation to former Transcept stockholders. Refer to Note 14, *Fair Value Measurements,* in the accompanying notes to the consolidated financial statements for additional information.

Interest Expense, Net

Interest expense for the year ended December 31, 2015 represents interest expense from the Term Loan with Hercules of $0.6 million and the accretion of interest expense on the Intermezzo Reserve in 2015 of $0.1 million as compared to non-cash interest accruing on our non-convertible notes outstanding during the year ended December 31, 2014. In connection with the Merger in October 2014, the non-convertible notes were all exchanged for common stock and interest no longer accrues. Our obligation to the former collaborative partner was also re-negotiated in June 2014 and interest no longer accrues.

(Losses) and Gains Associated with Notes and Warrants

In 2014, we engaged in several fundraising and re-capitalization transactions that gave rise to substantial non-operating gains and losses. During 2014, we recognized a $9.0 million non-cash loss on the exchange of non-convertible notes for common stock in connection with the Merger and October 2014 recapitalization transactions.

Liquidity and Capital Resources

Prior to the Merger and recapitalization in October 2014 we were subject to significant liquidity constraints. During 2014, we curtailed our research and development and other operating activities as we worked within financial constraints. We had financed our operations primarily through private placements of convertible preferred stock, note financings, research and development collaborations and, to a lesser extent, through government grants, foundation support, lines of credit and equipment lease financing. Immediately prior to the Merger, Old Paratek sold 8,068,766 shares of its common stock for an aggregate purchase price of $93.0 million to certain existing Paratek stockholders and certain new investors in Paratek.

On January 12, 2015, we filed a registration statement on Form S-3 with the SEC, as amended on April 24, 2015 and declared effective on April 27, 2015, to sell shares of our common stock, par value $0.001 per share, in an aggregate amount of up to $200.0 million to the public in one or more registered offerings. Under this shelf registration statement, we completed a public offering on May 5, 2015 of 3,089,000 shares of common stock at an offering price of $24.50 per share, which included 229,000 shares of common stock issued upon the exercise, in part, by the underwriters of an option to purchase additional shares. The net proceeds received by us, after underwriting discounts and commissions and other offering expenses, were $70.4 million. We also completed another public offering on June 27, 2016 of 4,887,500 shares of common stock at an offering price of $13.00, which included 637,500 shares of common stock issued upon the exercise, in full, by the underwriters of an option to purchase additional shares. The net proceeds received by us, after underwriting discounts and commissions and other estimated offering expenses, were $59.3 million.

We borrowed $20.0 million under the Loan Agreement executed with Hercules on September 30, 2015, and an additional $20 million under the Loan Agreement Amendment on December 12, 2016. Upon the completion of either a second Phase 3 clinical evaluation of omadacycline in patients with ABSSSI or in patients with CABP that is supportive of us making a NDA filing with the FDA, we will have access to an additional $10.0 million through September 15, 2017 under the Loan Agreement Amendment.

We have also sold an aggregate of 860,014 shares of common stock under the 2015 Sales Agreement with Cantor through December 31, 2016, resulting in net proceeds of $11.6 million after deducting commissions of $0.4 million. As of February 24, 2017, an additional 870,078 shares were sold under the 2015 Sales Agreement subsequent to December 31, 2016, resulting in net proceeds of $13.1 million after deducting commissions of $0.4 million, which will be recognized during the first quarter of 2017.

We have used and intend to continue to use the net proceeds from the public offerings, Term Loan, Loan Agreement Amendment and sales of common stock under the 2015 Sales Agreement with Cantor, together with our existing cash, to fund our ongoing Phase 3 oral-only study and to close out our IV-to-oral studies of omadacycline for the treatment of ABSSSI and CABP, to fund activities required to support an NDA submission for omadacycline for the treatment of ABSSSI and CABP, the manufacture of validation batches and the potential establishment of secondary manufacturing suppliers for our API and drug product, and for working capital and other general corporate purposes.

As of December 31, 2016, we had cash, cash equivalents and marketable securities of $128.0 million.

The following table summarizes our cash provided by and (used in) operating, investing and financing activities (in thousands):

	Year Ended December 31,		
	2016	2015	2014
Net cash used in operating activities	$ (94,098)	$ (54,682)	$ (18,533)
Net cash (used in) provided by investing activities	(74,757)	(603)	13,667
Net cash provided by financing activities	90,515	90,731	99,510

Operating Activities

Cash used in operating activities for the year ended December 31, 2016 of $94.1 million is primarily the result of our $111.6 million net loss offset in part by a $2.1 million increase in accounts payable and accrued expenses, and a $5.0 million decrease in prepaid expenses mainly associated with the clinical development of omadacycline, and a net decrease in the Intermezzo reserve of $2.4 million representing final payout, with the exception of unpaid legal fees, on the second anniversary of the Merger. The remainder represents the net impact of $13.0 million in non-cash items, including $13.1 million in depreciation, amortization and stock-based compensation expense, $0.2 million in non-cash interest expense, and a $0.3 million decrease in contingent obligations to former Transcept stockholders. Cash used in operating activities for 2015 of $54.7 million is primarily the result of our $70.9 million net loss offset in part by a $14.0 million increase in accounts payable and accrued expenses mainly associated with the clinical development of omadacycline. The remainder of the increase represents the net impact of $5.6 million in non-cash items, offset by a $3.6 million reduction in contingent obligations to former Transcept stockholders. Cash used in operating activities for 2014 of $18.5

million was primarily the result of our $17.8 million net loss less $10.7 million of non-cash items (principally comprised of a loss on exchange of non-convertible notes for common stock), and $11.4 million net use of working capital primarily in our payment of net liabilities.

Investing Activities

Cash used in investing activities for the ended December 31, 2016, is primarily the result of purchasing $135.8 million of short-term marketable securities (U.S. treasury and government agency securities), partially offset by proceeds by maturities of marketable securities of $60.1 million. The remainder represents an increase in restricted cash of $1.6 million offset by $0.7 million of fixed asset purchases. Net cash used in investing activities for the year ended December 31, 2015 is the result of purchases of fixed assets and a decrease in restricted cash representing payments made from the Intermezzo Reserve. Net cash provided by investing activities for 2014 is primarily the result of the net cash acquired in the October 2014 Merger.

Financing Activities

Net cash provided by financing activities for 2016 is primarily comprised of the following:

- $59.3 million from an underwritten offering of 4,887,500 shares of common stock;
- $11.6 million from the sale of 860,014 shares of common stock under the 2015 Sales Agreement with Cantor; and
- $19.6 million, net of issuance costs, on the Hercules Term Loan

Net cash provided by financing activities for 2015 is primarily comprised of the following:

- $70.4 million from an underwritten offering of 3,089,000 shares of common stock;
- $19.2 million, net of issuance costs, on the Hercules Term Loan beginning in the fourth quarter of 2015; and
- $1.0 million in proceeds received from the sale of 44,782 shares of common stock to Hercules.

Net cash provided by financing activities for 2014 is primarily comprised of the following:

- $89.8 million from the October 2014 issuance of 8,068,766 shares of common stock concurrent with the Merger with Transcept and other re-capitalization activities
- $5.1 million from a bridge loan from Transcept over the course of the third quarter of 2014 in advance of the Merger; and
- $5.5 million from the issuance of senior secured, non-convertible promissory notes in March 2014.

Future Funding Requirements

We have not generated and we do not know when, if ever, we will generate any revenue from product sales. We do not expect to generate any revenue from product sales unless and until we or our partner Allergan obtain regulatory approval of and commercialize omadacycline, sarecycline or any of our other product candidates. Subject to obtaining regulatory approval of any of our product candidates, we anticipate that we will need substantial additional funding in connection with our continuing operations to support pre-launch and commercial activities associated with our lead product candidate, omadacycline.

We have not completed development of any product candidates. We expect to continue to incur significant expenses and increasing operating losses for the foreseeable future as we:

- conduct our clinical trials of omadacycline;
- seek regulatory approvals for omadacycline, assuming that it successfully completes clinical trials;
- establish a sales, marketing and distribution infrastructure and increases to our manufacturing demand and capabilities to commercialize omadacycline; and
- add operational, financial and management information systems and personnel, including personnel to support our product development and planned commercialization efforts.

Based upon our current operating plan, we anticipate that our cash, cash equivalents and marketable securities of $128.0 million will enable us to fund our operating expenses and capital expenditure requirements through the first half of 2018. We have based this estimate on assumptions that may prove to be wrong, and we could use our available capital resources sooner than we currently expect. Because of the numerous risks and uncertainties associated with the development and commercialization of our product candidates, and the unknown extent to which we will enter into collaborations with third parties to participate in the development and commercialization of our product candidates, we are unable to estimate with certainty the amounts of increased capital outlays and operating expenditures associated with our current and anticipated clinical trials. Our future capital requirements will depend on many factors, including:

- the progress of clinical development of omadacycline;
- the number and characteristics of other product candidates that we pursue;
- the scope, progress, timing, cost and results of research, preclinical development and clinical trials;
- the costs, timing and outcome of seeking and obtaining FDA and non-U.S. regulatory approvals;
- the costs associated with manufacturing and establishing sales, marketing and distribution capabilities;
- our ability to maintain, expand and defend the scope of our intellectual property portfolio, including the amount and timing of any payments we may be required to make in connection with the licensing, filing, defense and enforcement of any patents or other intellectual property rights;
- our need and ability to hire additional management, scientific and medical personnel;
- the effect of competing products that may limit market penetration of our product candidates;
- our need to implement additional internal systems and infrastructure, including financial and reporting systems; and
- the economic and other terms, timing and success of our existing licensing arrangements and any collaboration, licensing or other arrangements into which we may enter in the future, including the timing of receipt of any milestone or royalty payments under these arrangements.

Until we can generate a sufficient amount of product revenue to finance our cash requirements, we expect to finance our future cash needs primarily through a combination of public and private equity offerings, debt or other structured financings, strategic collaborations and grant funding. We do not have any committed external sources of funds other than our collaboration with Allergan, which is terminable by Allergan upon prior written notice, and a potential undrawn balance of $10.0 million on the Loan Agreement Amendment that will only be available upon the completion of either a second Phase 3 clinical evaluation of omadacycline in patients with ABSSSI or in patients with CABP that is supportive of us making a NDA filing with the FDA. To the extent that we raise additional capital through the sale of equity or convertible debt securities, the ownership interest of our stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect stockholders' rights. Additional debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we raise additional funds through marketing and distribution arrangements or other collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates or grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our product development or commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

Off-Balance Sheet Arrangements

As of December 31, 2016, we do not have any off-balance sheet arrangements.

Critical Accounting Policies and Significant Judgments and Estimates

Our management's discussion and analysis of our financial condition and results of operations are based on our financial statements, which have been prepared in accordance with generally accepted accounting principles of the United States of America. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, and expenses and the disclosure of contingent assets and liabilities in our financial statements. On an ongoing basis, we evaluate our estimates and judgments, including those related to, among other items, intangible assets, goodwill, contingent liabilities, stock-based compensation arrangements, clinical accruals, useful lives for depreciation and amortization of long-lived assets and valuation allowances on deferred tax assets. Actual results could differ from those estimates. We base our estimates on historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Our actual results may differ from these estimates under different assumptions or conditions.

While our significant accounting policies are more fully described in Note 2, *Summary of Significant Accounting Policies*, to the consolidated financial statements included in Item 8, "Financial Statements and Supplementary Data," of this Annual Report on Form 10-K, we believe that the following accounting policies are the most critical to assist stockholders and investors reading the consolidated financial statements in fully understanding and evaluating our financial condition and results of operations.

Revenue Recognition

We enter into product development agreements with collaborators for the research and development of therapeutic products. The terms of these agreements may include nonrefundable signing and licensing fees, funding for research, development and manufacturing, milestone payments, and royalties on any product sales derived from collaborations. We assess these multiple elements in accordance with the Financial Accounting Standards Board, or FASB ASC 605 *Revenue Recognition*, in order to determine whether particular components of the arrangement represent separate units of accounting.

Deliverables under the arrangement will be separate units of accounting provided that a delivered item has value to the customer on a stand-alone basis and if the arrangement does not include a general right of return relative to the delivered item and delivery or performance of the undelivered item is considered probable and substantially in the control of the vendor. The fair value of deliverables under the arrangement may be derived using a best estimate of selling price if vendor-specific objective evidence and third-party evidence are not available.

We recognize upfront license payments as revenue upon delivery of the license only if the license has stand-alone value and the fair value of the undelivered performance obligations can be determined. If the fair value of the undelivered performance obligations could be determined, such obligations are accounted for separately as the obligations are fulfilled. If the license is considered to either not have stand-alone value or have stand-alone value but the fair value of any of the undelivered performance obligations cannot be determined, the arrangement is accounted for as a single unit of accounting, and the license payments and payments for performance obligations are recognized as revenue over the estimated period of when the performance obligations will be performed.

Whenever we determine that an arrangement should be accounted for as a single unit of accounting, we determine the period over which the performance obligations will be performed and revenue will be recognized. If we are not able to reasonably estimate the timing and the level of effort to complete our performance obligations under an arrangement, then we recognize revenue under the arrangement on a straight-line basis over the period that we expected to complete our performance obligations, which is reassessed at each subsequent reporting period.

For the year ended December 31, 2016, Company recognized $29,000 of royalty revenue from its Purdue Collaboration Agreement. No royalty revenue was recognized for the years ended December 31, 2015 and 2014. The Company will continue to recognize royalty revenue upon the sale of the relevant products, provided there are no remaining performance obligations under the arrangement.

On October 28, 2016, in satisfaction of our payment obligation of the proceeds of sale or disposition of the Intermezzo assets to the former Transcept stockholders under the Merger Agreement, we executed a royalty sharing agreement, or the Royalty Sharing Agreement, with the Special Committee, a committee established in connection with the Merger. Under the Royalty Sharing Agreement, we agreed to pay to the former Transcept stockholders fifty percent of all royalty income received by us pursuant to the Purdue Collaboration Agreement, net of all costs, fees and expenses incurred by us in connection with the Purdue Collaboration Agreement, related agreements, the Intermezzo product and the administration of the royalty income to the Transcept stockholders. We recognize all royalty income received from Purdue Pharma upon the sale of Intermezzo.

We also adopted guidance that permits the recognition of revenue contingent upon the achievement of a milestone in its entirety, in the period in which the milestone is achieved, only if the milestone meets certain criteria and is considered to be substantive. As such, we plan to recognize revenue in the period in which the milestone is achieved, only if the milestone is considered to be substantive based on the following criteria:

a. The milestone is commensurate with either of the following:

   The vendor's performance to achieve the milestone.

   The enhancement of the value of the delivered item or items as a result of a specific outcome resulting from the vendor's performance to achieve the milestone.

b. The milestone relates solely to past performance.

c. The milestone is reasonable relative to all of the deliverables and payment terms (including other potential milestone consideration) within the arrangement.

We determined whether the performance obligations under the collaborative research and license agreement, we entered into with Allergan, or the Allergan Collaboration Agreement, could be accounted for separately or as a single unit of accounting. We determined that the license, participation on steering committees and research and development services performance obligations during the research period of the Allergan Collaboration Agreement represented a single unit of accounting. As we could not reasonably estimate its level of effort, we recognized revenue from the upfront payment, milestone payment and research and development services payments using the contingency-adjusted performance model over the expected development period. The development period was completed in June 2010. Under this model, when a milestone was earned or research and development services were rendered, revenue was immediately recognized on a pro-rata basis in the period the milestone was achieved or services were delivered based on the time elapsed from the effective date of the agreement. Thereafter, the remaining portion was recognized on a straight-line basis over the remaining development period. We have determined that each potential future clinical, regulatory and commercialization milestone is substantive. In making this determination, pursuant to the accounting guidance on revenue recognition for milestone payments, we considered and concluded that each individual milestone: (i) relates solely to the past performance of the intellectual property to achieve the milestone; (ii) is reasonable relative to all of the deliverables and payment terms in the arrangement; and (iii) is commensurate with the enhanced value of the intellectual property as a result of the milestone achievement. As our obligations under this arrangement have been completed, all future milestones, which are all considered substantive, will be recognized as revenue when achieved.

Also, at our discretion, we may provide manufacturing process development services to Allergan in exchange for full-time equivalent based cost reimbursements. We determined that the manufacturing process development services are considered a separate unit of accounting as (i) they are set at our discretion, (ii) they have stand-alone value, as these services could be performed by third parties, and (iii) the full-time equivalent rate paid for such services rendered is considered fair value. Therefore, we recognize cost reimbursements for manufacturing process development services as revenue as the services are performed.

We did not enter into any significant multiple element arrangements or materially modify any of our other existing multiple element arrangements during the years ended December 31, 2016, 2015 or 2014. We record deferred revenue when payments are received in advance of the culmination of the earnings process. This revenue is recognized in future periods when the applicable revenue recognition criteria have been met.

Marketable Securities

We consider all highly liquid investments purchased with original maturities of 90 days or less at acquisition to be cash equivalents. Cash and cash equivalents include cash held in banks and amounts held primarily in interest-bearing money market accounts. Cash equivalents are carried at cost, which approximates their fair market value.

We determine the appropriate classification of marketable securities at the time of purchase and reevaluate such designation at each balance sheet date. We classified all of its marketable securities at December 31, 2016 as "available-for-sale" pursuant to ASC 320, *Investments – Debt and Equity Securities.* Investments not classified as cash equivalents are presented as either short-term or long-term investments based on both their maturities as well as the time period we intend to hold such securities. Available-for-sale securities are maintained by an investment manager and consist of U.S. treasury and government agency securities. Available-for-sale securities are carried at fair value with the unrealized gains and losses included in other comprehensive income (loss) as a component of stockholders' equity until realized. Any premium or discount arising at purchase is amortized or accreted to interest expense or income over the life of the instrument. Realized gains and losses are determined using the specific identification method and are included in other income or expense. There were no realized gains or losses on marketable securities recognized for the year ended December 31, 2016.

We review marketable securities for other-than-temporary impairment whenever the fair value of a marketable security is less than the amortized cost and evidence indicates that a marketable security's carrying amount is not recoverable within a reasonable period of time. Other-than-temporary impairments of investments are recognized in the consolidated statements of operations and comprehensive loss if we have experienced a credit loss, has the intent to sell the marketable security, or if it is more likely than not that we will be required to sell the marketable security before recovery of the amortized cost basis. Evidence considered in this assessment includes reasons for the impairment, compliance with our investment policy, the severity and duration of the impairment and changes in value subsequent to the end of the period. There were no other-than-temporary impairments of investments recognized for the year ended December 31, 2016.

Accrued Expenses

As part of the process of preparing our consolidated financial statements, we are required to estimate our accrued expenses. This process involves reviewing open contracts and purchase orders, communicating with our personnel to identify services that have been performed for us and estimating the level of service performed and the associated cost incurred for the service when we have not yet been invoiced or otherwise notified of the actual cost. The majority of our service providers invoice us periodically in arrears for services performed or when contractual milestones are met. We make estimates of our accrued expenses as of each balance sheet date in our consolidated financial statements based on facts and circumstances known to us at that time. We periodically confirm the accuracy of our estimates with the service providers and make adjustments if necessary. Examples of estimated expenses include fees paid to:

- CROs, in connection with clinical trials;
- contract manufacturing organizations, or CMOs, with respect to clinical material supply;
- vendors in connection with preclinical development and operational activities; and
- legal and other professional service providers.

We base our expenses on our estimates of the services received and efforts expended pursuant to contractual arrangements with CROs, professional service firms and other vendors. The financial terms of these agreements are subject to negotiation, vary from contract to contract and may result in uneven payment flows. There may be instances in which payments made to our vendors will exceed the level of services provided and result in a prepayment of expense. In accruing service fees, we estimate the time period over which services will be performed and the level of effort to be expended in each period. If the actual timing of the performance of services or the level of effort varies from our estimate, we adjust the accrual or prepaid accordingly. Although we do not expect our estimates to be materially different from amounts actually incurred, if our estimates of the status and timing of services performed differs from the actual status and timing of services performed, we may report amounts that are too high or too low in any particular period. To date, there have been no material differences from our estimates to the amount actually incurred.

Research and Development Expenses

We charge costs of our research and development to expense as incurred. Research and development expenses consist of the costs incurred in performing research and development activities, including personnel-related costs, stock-based compensation, facilities, research-related overhead, clinical trial costs, contracted services, manufacturing, license fees and other external costs. We account for nonrefundable advance payments for goods and services that will be used in future research and development activities as expenses when the service has been performed or when the goods have been received rather than when the payment is made.

Stock-Based Compensation

We account for our stock-based awards in accordance with ASC 718, *Compensation—Stock Compensation*, or ASC 718, which requires all stock-based payments to employees, including grants of employee stock options, modifications to existing stock options, and restricted stock unit awards, to be recognized as expense based on their fair values. We recognize the compensation cost of awards subject to performance-based vesting conditions over the requisite service period, to the extent achievement of the performance condition is deemed probable relative to targeted performance. If achievement of the performance condition is not probable, but the award will vest based on the service condition, we recognize the expense over the requisite service period. We account for stock-based awards to non-employees using the fair value method on a straight-line basis over the associated service period of the award.

We estimate the fair value of our stock-based awards to employees and non-employees using the Black-Scholes option pricing model, which requires the input of highly subjective assumptions, including (1) the expected volatility of our stock, (2) the expected term of the award, (3) the risk-free interest rate and (4) expected dividends. Due to the lack of a public market for our common stock

prior to the completion of the Merger on October 30, 2014, and resulting lack of company-specific historical and implied volatility data, we have based our estimate of expected volatility on the historical volatility of a group of similar companies that are publicly traded. For these analyses, we have selected companies with characteristics that we believe are comparable to ours, including enterprise value, risk profiles, position within the industry, and with historical share price information sufficient to meet the expected life of the stock-based awards. We compute the historical volatility data using the daily closing prices for the selected companies' shares during the equivalent period as the calculated expected term of our stock-based awards. During 2015, we began to blend our stock price history, for the length of time we have market data for our stock, with the historical volatility of the group of similar public companies for the expected term of each grant to estimate volatility. We have estimated the expected life of our employee stock options as the average of the midpoints between vesting exercise date for each vesting-trance and the contractual term of the options as the last available exercise date of the option. The risk-free interest rates for periods within the expected life of the option are based on the U.S. Treasury yield curve in effect during the period the options were granted.

We also estimate forfeitures at the time of grant, and revise those estimates in subsequent periods if actual forfeitures differ from estimates. We use historical data to estimate pre-vesting option forfeitures to the extent that actual forfeitures differ from our estimates, the difference is recorded as a cumulative adjustment in the period the estimates were revised. Stock-based compensation expense recognized in the consolidated financial statements is based on awards that are ultimately expected to vest. For the years ended December 31, 2016 and 2015, we applied an estimated forfeiture rate of approximately 9%.

See Note 2 to our consolidated financial statements included in Part II, Item 8, “Financial Statements and Supplementary Data,” of this Annual Report on Form 10-K for a description of recent accounting pronouncements applicable to our business.

Recent Accounting Standards

From time to time, new accounting pronouncements are issued by the FASB or other standard setting bodies and adopted by us as of the specified effective date. Unless otherwise discussed, we believe that the impact of recently issued standards that are not yet effective will not have a material impact on our financial position or results of operations upon adoption.

Between May 2014 and May 2016, the FASB issued three ASUs changing the requirements for recognizing and reporting revenue, together, herein referred to as the “Revenue ASUs”: (i) ASU No. 2014-09, *Revenue from Contracts with Customers*, or the ASU 2014-09”, (ii) ASU No. 2016-08, *Principal versus Agent Considerations (Reporting Revenue Gross versus Net)*, or the ASU 2016-08” and (iii) ASU No. 2016-12, *Narrow-Scope Improvements and Practical Expedients*, or the ASU 2016-12. ASU 2014-09 provides guidance for revenue recognition to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. ASU 2016-08 is intended to improve the operability and understandability of the implementation guidance on principal versus agent considerations. ASU 2016-12 provides practical expedients and improvements on the previously narrow scope of ASU 2014-09. In August 2015, the FASB issued ASU No. 2015-14, *Revenue from Contracts with Customers (Topic 606): Deferral of the Effective Date*, or the “ASU 2015-14”. ASU 2015-14 defers the effective date of ASU 2014-09 by one year to fiscal years, and interim periods within, beginning after December 15, 2017. All subsequent ASUs related to ASU 2014-09, including ASU 2016-08 and ASU 2016-12, assumed the deferred effective date enforced by ASU 2015-14. Early adoption of the Revenue ASUs is permitted for annual periods, and interim periods within, beginning after December 15, 2016. A reporting entity may apply the amendments in the Revenue ASUs using either a modified retrospective approach, by recording a cumulative-effect adjustment to equity as of the beginning of the fiscal year of adoption or full retrospective approach. We are evaluating the full impact of the adoption of the standard to its consolidated financial position and results of operations. We do not believe adoption of these standards will have a material impact on our consolidated financial statements based on initial evaluation of historical revenue recognized under our two ongoing collaboration agreements. The new standard may have a material impact on the timing of recognition of future revenue, if any, earned under the Allergan Collaboration Agreement, but it is not expected to impact future revenue, if any, earned under the Purdue Collaboration Agreement. We plan to elect the full retrospective application as our transition method.

In June 2014, the FASB issued ASU No. 2014-12, *Compensation—Stock Compensation*. In March 2016, the FASB issued ASU No. 2016-09, *Compensation—Stock Compensation (Topic 718)*: Improvements to Employee Share-Based Payment Accounting. This ASU simplifies several areas of accounting for share-based payment transactions, including the income tax consequences, classification of awards as either liabilities or equity and classification of excess tax benefits on the statement of cash flows. This guidance also permits a new entity-wide accounting policy election to either estimate the number of awards that are expected to vest or account for forfeitures when they occur. This guidance will be effective for annual reporting periods beginning after December 15, 2016, including interim periods within those annual reporting periods, and early adoption is permitted. We adopted this ASU as of January 1, 2017. The adoption of this standard is expected to impact income tax footnote disclosures. Upon adoption of the standard, we expect to make a policy election on forfeiture simplification. As such, we expect to record a cumulative-effect adjustment to equity of $0.7 million upon adoption.

In August 2014, the FASB issued ASU No. 2014-15 *Presentation of Financial Statements-Going Concern*. The amendments in this update apply to all reporting entities and require an entity's management, in connection with preparing financial statements for each annual and interim reporting period, to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the entity's ability to continue as a going concern within one year after the date that the financial statements are issued (or within one year after the date that the financial statements are available to be issued when applicable). This ASU is effective for annual periods ending after December 15, 2016. We adopted this standard for the year ended December 31, 2016. Based on the results of our analysis, no additional disclosures were required.

In February 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842)*. The amendment requires a lessee to recognize assets and liabilities for leases with a maximum possible term of more than 12 months. A lessee would recognize a liability to make lease payments (the lease liability) and a right-of-use asset representing its right to use the leased asset (the underlying asset) for the lease term. This ASU is effective for fiscal years beginning after December 15, 2018, including those interim periods within those fiscal years. We are currently evaluating the impact the adoption of the ASU will have on our consolidated financial statements.

In August 2016, the FASB issued ASU No. 2016-15, *Statement of Cash Flows (Topic 230),* which simplifies certain elements of cash flow classification. The new guidance is intended to reduce diversity in practice in how certain transactions are classified in the statement of cash flows. The ASU is effective for annual periods beginning after December 15, 2017. We are currently evaluating the impact the adoption of the ASU will have on our consolidated financial statements.

In October 2016, the FASB issued ASU No. 2016-16, *Intra-Entity Transfers of Assets Other Than Inventory*, or ASU 2016-16. The amendments in ASU 2016-16 require an entity to recognize the income tax consequences of intra-entity transfers of assets other than inventory at the time that the transfer occurs. Current guidance does not require recognition of tax consequences until the asset is eventually sold to a third party. ASU 2016-16 is effective for fiscal years, and interim periods within, beginning after December 15, 2017. Early adoption is permitted as of the first interim period presented in a year. A reporting entity must apply the amendments in ASU 2016-16 using a modified retrospective approach by recording a cumulative-effect adjustment to equity as of the beginning of the fiscal year of adoption. We are evaluating the impact of the adoption of ASU 2016-16 on January 1, 2018 to our consolidated financial position and results of operations. We do not expect the adoption of ASU 2016-16 to have a material impact on our consolidated financial position or results of operations.

In November 2016, the FASB issued ASU No. 2016-18, *Restricted Cash*, or ASU 2016-18. The amendments in ASU 2016-18 require an entity to reconcile and explain the period-over-period change in total cash, cash equivalents and restricted cash within its statements of cash flows. ASU 2016-18 is effective for fiscal years, and interim periods within, beginning after December 15, 2017. Early adoption is permitted. A reporting entity must apply the amendments in ASU 2016-18 using a full retrospective approach. We are currently evaluating the impact the adoption of the ASU will have on our consolidated financial statements.

In January 2017, the FASB issued ASU No. 2017-04, *Simplifying the Test for Goodwill Impairment*, or ASU 2017-04. The amendments in ASU 2017-04 eliminate the current two-step approach used to test goodwill for impairment and require an entity to apply a one-step quantitative test and record the amount of goodwill impairment as the excess of a reporting unit's carrying amount over its fair value, not to exceed the total amount of goodwill allocated to the reporting unit. ASU 2017-04 is effective for fiscal years, including interim periods within, beginning after December 15, 2019 (upon the first goodwill impairment test performed during that fiscal year). Early adoption is permitted for interim or annual goodwill impairment tests performed on testing dates after January 1, 2017. A reporting entity must apply the amendments in ASU 2017-04 using a prospective approach. We do not expect the adoption of ASU 2017-04 to have a material impact to our consolidated financial position or results of operations.

Contractual Obligations and Commitments

The following table summarizes our contractual obligations as of December 31, 2016 and the effect such obligations are expected to have on our liquidity and cash flow in future years (in thousands):

	Total	Less than 1 year	1 to 3 years	3 to 5 years	More than 5 years
Operating lease obligations	$ 3,919	$ 823	$ 2,502	$ 594	$ —
Licenses	300	25	50	50	175
Long-term debt	40,000	—	14,952	25,048	—
Total contractual cash obligations	$ 44,219	$ 848	$ 17,504	$ 25,692	$ 175

Lease

We lease our Boston, Massachusetts and King of Prussia, Pennsylvania office spaces under non-cancelable operating leases, expiring in 2021 and 2024, respectively.

We executed an amended lease agreement on our Boston office space in July 2016. The amended lease agreement adds 4,153 rentable square feet of office space and extends the original lease term by two years. The total revised lease commitment of $3.4 million is over a remaining five-year lease term. In accordance with the amended lease agreement, we paid a security deposit of $0.1 million. We are required to make additional payments under the facility operating leases for taxes, insurance, and other operating expenses incurred during the operating lease period.

We executed an amended lease agreement on our King of Prussia office space in October 2016. The amended lease agreement is for 19,708 rentable square feet of office space for a total commitment of $3.5 million. The total lease commitment is over a seven-year and seven-month lease term. The lease contains rent escalation and a partial rent abatement period, which will be accounted for as rent expense under the straight-line method. We are required to make additional payments under the facility operating lease for taxes, insurance, and other operating expenses incurred during the lease period. The $3.5 million obligation is not included within the above table as we do not control the space as of December 31, 2016. Included within the above table is our current obligation at our King of Prussia office space.

Licenses

Under a license agreement with Tufts University, we are required to make aggregate regulatory milestone payments of up to $300,000 associated with the first Phase 3 clinical trials, filing of an NDA, and approval of its first product candidate, $50,000 of which has been paid. We are also obligated to pay Tufts a minimum royalty in the amount of $25,000 per year. We also agreed to pay Tufts royalties based on gross sales of products, as defined in the agreement, ranging in the low single digits depending on the applicable field of use for such product sale. Also, if we enter into a sublicense under the agreement, based on the applicable field of use for such product, we agreed to pay Tufts a percentage, ranging from 10% to 14 % (ten percent to fourteen percent) of that portion of any sublicense issue fees or maintenance fees received by us that are reasonably attributable to the sublicense of the rights granted to us under the Tufts License Agreement and the lesser of a percentage, ranging from the low tens to the high twenties based on the applicable field of use for such product, of the royalty payments made to us by the sublicensee or the amount of royalty payments that would have been paid by us to Tufts if we had sold the product.

In September 2009, we and Novartis International Pharmaceutical Ltd., or Novartis, entered into a Collaborative Development, Manufacture and Commercialization License Agreement, or the Novartis Agreement, which provided Novartis with a global, exclusive patent and technology license for the development, manufacturing and marketing of omadacycline. The Novartis Agreement was terminated by Novartis without cause in June 2011 and the termination was effective 60 days later. We and Novartis subsequently entered in a letter agreement in January 2012, or the Novartis Letter Agreement, as amended, pursuant to which we reconciled shared development costs and expenses and granted Novartis a right of first negotiation with respect to commercialization rights of omadacycline following approval of omadacycline from the FDA, European Medicines Agency, or EMA, or any regulatory agency. This right of negotiation exists only to the extent we had not previously granted such commercialization rights related to omadacycline to another third party as of any such approval. We also agreed to pay Novartis a 0.25% royalty based on annual net sales of our omadacycline products. The amended Novartis Letter Agreement resulted in a long-term liability in the amount of $3.6 million for the year ended December 31, 2016 and 2015 included within "Other Long Term Liabilities" on our consolidated balance sheet. There are no other payment obligations to Novartis under either the Novartis Agreement or the Novartis Letter Agreement.

Long-Term Debt

On September 30, 2015, we entered into the Loan Agreement with Hercules, certain other lenders, and Hercules Technology Growth Capital, Inc. (as agent). Under the Loan Agreement, Hercules will provide us with access to the Term Loan. We initially drew a principal amount of $20.0 million, which was funded on September 30, 2015. The Term Loan is repayable in monthly installments commencing on April 1, 2018 through maturity on September 1, 2020. The interest rate is equal to the greater of (i) 8.5%, or (ii) the sum of 8.5%, plus the "prime rate" as reported in The Wall Street Journal minus 5.75% per annum.

Upon an Event of Default, an additional 5.0% interest will be applied and Hercules may, at its option, accelerate and demand payment of all or any part of the loan together with the prepayment and end of term charges. An Event of Default is defined in the Loan Agreement as (i) failure to make required payments; (ii) failure to adhere to financial, operating and reporting loan covenants; (iii) an event or development occurs that would be reasonably expected to have a material adverse effect; (iv) false representations in the Loan Agreement; (v) insolvency, as described in the Loan Agreement; (vi) levy or attachments on any of our assets; and (vii) default of any other agreement or subordinated debt greater than $1.0 million. In the event of insolvency, this acceleration and

declaration would be automatic. In addition, in connection with the Loan Agreement, we agreed to provide Hercules with a contingent security interest in our bank accounts. Our control of our bank accounts is not adversely affected unless Hercules elects to obtain unilateral control of our bank accounts by declaring that an Event of Default has occurred.

Subject to certain terms, pursuant to the Loan Agreement, Hercules was also granted the right to participate in an amount of up to $2.0 million in subsequent sales and issuances of our equity securities to one or more investors for cash for financing purposes in an offering that is broadly marketed to multiple investors and at the same terms as the other investors. On September 30, 2015, Technology Growth Capital, Inc. entered into a Stock Purchase Agreement dated with us to purchase 44,782 shares of common stock resulting in proceeds to us of approximately $1.0 million. The excess of proceeds received by us over the fair value of the common stock issued was allocated as a reduction of the fees paid to Hercules in conjunction with obtaining the initial $20.0 million draw of the Term Loan.

On December 12, 2016, we entered into the Loan Agreement Amendment. The Loan Agreement Amendment extended the date on which we must begin making amortization payments under the Loan Agreement from April 1, 2018 to January 1, 2019, or the Amortization Date. Upon commencement of the Amortization Date, we will make amortization payments based upon an amortization schedule equal to thirty consecutive months, with the balance of outstanding loans due on the original maturity date of the Loan Agreement. The Loan Agreement Amendment also increased the amount that we may borrow by $10.0 million, from up to $40.0 million to up to $50.0 million in multiple tranches. The Additional Tranche, is available at our option through September 15, 2017 but conditioned upon us completing either a second Phase 3 clinical evaluation of omadacycline in patients with ABSSI or in patients with CABP that is supportive of us making a NDA filing with the FDA. If drawn, the Additional Tranche shall bear interest and have the same maturity as all other loans outstanding under the Loan Agreement. We borrowed the first tranche of $20.0 million upon the closing of the Loan Agreement on September 30, 2015 and, concurrently with the closing of the Loan Agreement Amendment, we borrowed an additional $20.0 million under the Loan Agreement. In connection with the Loan Agreement Amendment, we paid Hercules a $0.4 million amendment fee.

In connection with the Loan Agreement Amendment, we issued Loan Amendment Warrants to each of Hercules Technology II, L.P. and Hercules Technology III, L.P. which together are exercisable for an aggregate of 37,148 shares of our common stock and each carry an exercise price of $13.46 per share. Additionally, upon the Additional Tranche funding date, we will issue an additional warrant to each of Hercules Technology II, L.P. and Hercules Technology III, L.P. which together will be exercisable for an aggregate number of shares equal to $125,000 divided by the arithmetic mean of our daily closing price per share for the ten trading days preceding the Additional Tranche funding date and each carry an exercise price equal to the arithmetic mean of our daily closing price per share for the ten trading days preceding the Additional Tranche funding date, or the Conditional Warrants and together with the Loan Amendment Warrants, the Warrants. Each Warrant may be exercised on a cashless basis. The Warrants are exercisable for a term beginning on the date of issuance and ending on the earlier to occur of five years from the date of issuance or the consummation of certain acquisitions as set forth in the Warrants. The number of shares for which the Warrants are exercisable and the associated exercise price are subject to certain proportional adjustments as set forth in the Warrants.

An end of term charge equal to 4.5% of the issued principal balance of the Term Loan under the Loan Agreement Amendment is payable at maturity, including in the event of any prepayment, and is being accrued as interest expense over the term of the loan using the effective interest method. Borrowings under the Loan Agreement and Loan Agreement Amendment are collateralized by substantially all of our assets.

If we repay all or a portion of the term loans prior to maturity, in addition to the end of term charge, we will pay Hercules a prepayment fee as follows: (i) 2.0% of the then outstanding principal amount if the prepayment occurs prior to January 1, 2019 or (ii) no fee if the prepayment occurs on or after January 1, 2019.

The principal of the Term Loan, which is not due within 12 months of December 31, 2016, has been classified as long-term as we determined that a material adverse effect resulting in Hercules exercising its rights under the subjective acceleration clause is remote. See Note 16, *Long-Term Debt*, in the accompanying notes to the consolidated financial statements for further description.

Contract Service Providers

In the course of normal business operations, we also have agreements with contract service providers to assist in the performance of research and development, clinical trials, manufacturing and other activities for operating purposes which are cancelable at any time by us, generally upon 30 days' prior written notice. These payments are not included in this table of contractual obligations.

We could also enter into additional collaborative research, contract research, manufacturing, supplier and contractor agreements in the future, which may require upfront payments and/or long-term commitments of cash.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

We do not enter into financial instruments for trading or speculative purposes. Our cash, cash equivalents and investments balance as of December 31, 2016 consisted of cash and cash equivalents and U.S. treasury and government agency securities. The goals of our investment policy are preservation of capital, fulfillment of liquidity needs and fiduciary control of cash and investments. We also seek to maximize income from our investments without assuming significant risk. Our primary exposure to market risk is interest income sensitivity, which is affected by changes in the general level of interest rates, particularly because our investments are in short-term marketable securities. Due to the short-term duration of our investment portfolio and the low-risk profile of our investments, an immediate 100 basis point change in interest rates would not have a material effect on the fair market value of our portfolio. We have the ability and intention to hold our investments until maturity and, therefore, we would not expect our operating results or cash flows to be affected to any significant degree by the effect of a sudden change in market interest rates on our investment portfolio.

We engage CROs and contract manufacturers on a global scale. We may be subject to fluctuations in foreign currency rates in connection with certain of these agreements. We currently do not hedge any such foreign currency exchange rate risk. Transactions denominated in currencies other than U.S. dollars are recorded based on exchange rates at the time such transactions arise and were less than 10% of total liabilities as of December 31, 2016.

Item 8. Financial Statements and Supplementary Data

Index to Financial Statements

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Stockholders of
Paratek Pharmaceuticals, Inc.

We have audited the accompanying consolidated balance sheet of Paratek Pharmaceuticals, Inc. as of December 31, 2016, and the related consolidated statements of operations and comprehensive loss, convertible preferred stock and stockholders' equity, and cash flows for the year then ended. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Paratek Pharmaceuticals, Inc. at December 31, 2016, and the consolidated results of its operations and its cash flows for the year then ended in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Paratek Pharmaceutical Inc.'s internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated March 1, 2017 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Boston, Massachusetts
March 1, 2017

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Stockholders
Paratek Pharmaceuticals, Inc.

We have audited the accompanying consolidated balance sheet of Paratek Pharmaceuticals, Inc. as of December 31, 2015, and the related consolidated statements of operations and comprehensive loss, convertible preferred stock and stockholders' equity (deficit) and cash flows for each of the two years in the period ended December 31, 2015. Paratek Pharmaceuticals, Inc.'s management is responsible for these consolidated financial statements. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the consolidated financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Paratek Pharmaceuticals, Inc. as of December 31, 2015 and the results of their operations and cash flows for each of the two years in the period ended December 31, 2015, in conformity with accounting principles generally accepted in the United States of America.

/s/ CohnReznick LLP

Vienna, Virginia
March 9, 2016

Paratek Pharmaceuticals, Inc.
Consolidated Balance Sheets
(in thousands, except for share and par value)

	Year Ended December 31,	
	2016	2015
Assets		
Current assets		
Cash and cash equivalents	$ 52,962	$ 131,302
Marketable securities	75,076	—
Restricted cash	817	2,443
Other receivables	323	745
Prepaid and other current assets	2,922	7,927
Total current assets	132,100	142,417
Long-term restricted cash	250	250
Fixed assets, net	1,188	779
Intangible assets, net	1,015	1,349
Goodwill	829	829
Other long-term assets	350	294
Total assets	$ 135,732	$ 145,918
Liabilities, Preferred Stock and Stockholders' Equity		
Current liabilities		
Accounts payable and other accrued expenses	$ 10,790	$ 6,443
Accrued contract research	9,566	11,583
Current portion of Intermezzo reserve	56	2,476
Total current liabilities	20,412	20,502
Long-term debt	38,974	19,565
Contingent obligations	655	1,000
Other liabilities	4,099	3,611
Total liabilities	64,140	44,678
Commitments and contingencies (Note 18)		
Stockholders' equity		
Preferred stock:		
Undesignated preferred stock: $0.001 par value; 5,000,000 authorized; no shares issued and outstanding	—	—
Common stock, $0.001 par value, 100,000,000 shares authorized, 23,358,637 and 17,608,615 issued and outstanding at December 31, 2016 and 2015, respectively	23	17
Additional paid-in capital	451,947	369,949
Accumulated other comprehensive loss	(16)	—
Accumulated deficit	(380,362)	(268,726)
Total stockholders' equity	71,592	101,240
Total liabilities, preferred stock and stockholders' equity	$ 135,732	$ 145,918

The accompanying notes are an integral part of these consolidated financial statements.

Paratek Pharmaceuticals, Inc.
Consolidated Statements of Operations and Comprehensive Loss
(in thousands, except share and per share amounts)

	Year Ended December 31,		
	2016	2015	2014
Revenue			
Research and development collaborations	$ —	$ —	$ 4,342
Royalty revenue	29	—	—
Total revenue	29	—	4,342
Operating expenses:			
Research and development	83,460	50,765	5,014
General and administrative	26,400	19,988	5,848
Impairment of intangible assets	—	2,860	—
Merger-related costs	—	—	1,278
Changes in fair value of contingent consideration	(345)	(3,560)	—
Total operating expenses	109,515	70,053	12,140
Loss from operations	(109,486)	(70,053)	(7,798)
Other income and expenses:			
Interest income	1,069	—	—
Interest expense	(3,223)	(770)	(718)
Loss on exchange of non-convertible notes for common stock	—	—	(9,020)
(Loss) gain on mark-to-market of notes and warrants	—	—	(120)
Other gains (and losses), net	4	(37)	(179)
Net loss	(111,636)	(70,860)	(17,835)
Unaccreted dividends on convertible preferred stock	—	—	(1,927)
Net loss attributable to common stockholders	(111,636)	(70,860)	(19,762)
Other comprehensive loss			
Unrealized loss on available-for-sale securities, net of tax	(16)	—	—
Other comprehensive loss	(16)	—	—
Comprehensive loss	$ (111,652)	$ (70,860)	$ (19,762)
Net loss per share attributable to common stockholders:			
Basic and diluted net loss per common share	$ (5.51)	$ (4.29)	$ (7.82)
Weighted average common shares outstanding			
Basic and diluted	20,253,082	16,501,912	2,528,595

The accompanying notes are an integral part of these consolidated financial statements.

Paratek Pharmaceuticals, Inc.
Consolidated Statements of Convertible Preferred Stock and Stockholders' Equity (Deficit)
(in thousands, except share amounts)

	Convertible Preferred Stock	Common Stock		Additional Paid-in Capital	Accumulated other comprehensive income (loss)	Accumulated Deficit	Total Stockholders' Equity (Deficit)
		Shares	Amount				
Balances at December 31, 2013	$ 80,565	67,500	$ —	$ 65,698	$ —	$ (180,031)	$ (114,333)
Issuance of common stock under stock option plan	—	67,500	—	290	—	—	290
Issuance of new Series A convertible preferred stock in exchange for previously issued preferred stock and convertible notes	21,140	—	—	—	—	—	—
Convertible preferred stock exchanged for common stock	(101,705)	3,249,231	3	101,702	—	—	101,705
Non-convertible note exchanged for common stock	—	1,335,475	1	15,393	—	—	15,394
Warrants for preferred stock exchanged for warrants for common stock	—	—	—	40	—	—	40
Issuance of common stock in the Merger	—	1,629,464	2	19,784	—	—	19,786
Issuance of common stock, net of expenses	—	8,068,766	8	89,753	—	—	89,761
Stock-based compensation expense	—	—	—	416	—	—	416
Net loss	—	—	—	—	—	(17,835)	(17,835)
Balances at December 31, 2014	—	14,417,936	14	293,076	—	(197,866)	95,224
Exercise of stock options	—	56,897	1	246	—	—	247
Issuance of common stock, net of expenses	—	3,133,782	2	71,277	—	—	71,279
Issuance of warrants for common stock	—	—	—	288	—	—	288
Stock-based compensation expense	—	—	—	5,062	—	—	5,062
Net loss	—	—	—	—	—	(70,860)	(70,860)
Balances at December 31, 2015	—	17,608,615	17	$ 369,949	$ —	(268,726)	101,240
Exercise of stock options	—	2,508	—	11	—	—	11
Issuance of common stock, net of expenses	—	5,747,514	6	70,924	—	—	70,930
Issuance of warrants for common stock	—	—	—	271	—	—	271
Unrealized loss on available-for-sale securities, net of tax	—	—	—	—	(16)	—	(16)
Stock-based compensation expense	—	—	—	10,792	—	—	10,792
Net loss	—	—	—	—	—	(111,636)	(111,636)
Balances at December 31, 2016	$ —	23,358,637	23	$ 451,947	$ (16)	$ (380,362)	$ 71,592

The accompanying notes are an integral part of these consolidated financial statements.

Paratek Pharmaceuticals, Inc.
Consolidated Statements of Cash Flows
(in thousands)

	Year Ended December 31,		
	2016	2015	2014
Net loss	$ (111,636)	$ (70,860)	$ (17,835)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation and amortization	2,303	714	196
Stock-based compensation expense	10,792	5,062	706
Noncash interest expense	241	548	770
Impairment of intangible assets	—	2,860	—
Change in fair value of contingent consideration	(345)	(3,560)	—
Loss on exchange of non-convertible notes for common stock	—	—	9,020
Loss (gain) on mark-to-market on convertible notes and preferred stock warrants	—	—	120
Other gains, net	—	17	(3)
Changes in operating assets and liabilities, net of effects of merger	—	—	—
Accounts receivable, prepaid, and other current assets	4,960	(2,705)	(4,764)
Accounts payable and accrued expenses	2,062	14,021	(6,401)
Other liabilities and other assets	(2,475)	(779)	—
Deferred revenue	—	—	(342)
Net cash used in operating activities	(94,098)	(54,682)	(18,533)
Investing activities			
Cash acquired in connection with the Merger	—	—	13,688
Purchase of fixed assets	(690)	(856)	—
Purchase of marketable securities	(135,799)	—	—
Proceeds from maturities of marketable securities	60,106	—	—
Decrease in restricted cash	1,626	253	—
Other investing activities	—	—	(21)
Net cash (used in) provided by investing activities	(74,757)	(603)	13,667
Financing activities			
Proceeds from exercise of stock options	11	247	—
Proceeds from issuance of long-term debt, net of costs and debt discount	19,574	19,205	—
Proceeds from issuance of common stock, net	70,930	71,279	89,761
Proceeds from bridge loan—related party	—	—	5,100
Proceeds from issuance of non-convertible note	—	—	5,480
Refund of prefunding for financing	—	—	(831)
Net cash provided by financing activities	90,515	90,731	99,510
Net increase (decrease) in cash	(78,340)	35,446	94,644
Cash at beginning of year	131,302	95,856	1,212
Cash at end of year	$ 52,962	$ 131,302	$ 95,856
Supplemental disclosure of noncash financing activities			
Convertible preferred stock exchanged for common stock	$ —	$ —	$ 101,705
Fair value of warrants issued	$ 271	$ 288	$ —
Issuance of new Series A convertible preferred stock in exchange for previously issued preferred stock and convertible notes	$ —	$ —	$ 21,140
Non-convertible note exchanged for common stock	$ —	$ —	$ 15,394
Settlement of bridge loan	$ —	$ —	$ 5,100
Conversion of prefunding to non-convertible note	$ —	$ —	$ 520
Supplemental disclosure of cash flow information			
Cash paid for interest	$ 1,582	$ 292	$ —

The accompanying notes are an integral part of these consolidated financial statements.

1. Organization

Paratek Pharmaceuticals, Inc., or the Company or Paratek, is a Delaware corporation with its corporate office in Boston, Massachusetts and an office in King of Prussia, Pennsylvania. The Company is a clinical stage biopharmaceutical company focused on the development and commercialization of innovative therapeutics based upon tetracycline chemistry. The Company has used its expertise in biology and tetracycline chemistry to create chemically diverse and biologically distinct small molecules derived from the minocycline core structure. The Company's two lead product candidates are the antibacterials omadacycline and sarecycline. The Company has generated innovative small molecule therapeutic candidates based upon medicinal chemistry-based modifications, according to structure-based activity, of all positions of the core tetracycline molecule. These efforts have yielded molecules with broad-spectrum antibiotic properties and narrow-spectrum antibiotic properties, and molecules with potent anti-inflammatory properties to fit specific therapeutic applications. This proprietary chemistry platform has produced many compounds that have shown interesting characteristics in various *in vitro* and *in vivo* efficacy models. Omadacycline and sarecycline are examples of molecules that were synthesized from this chemistry discovery platform.

Omadacycline is the first in a new class of aminomethylcycline antibiotics. Omadacycline is a broad-spectrum, well-tolerated once-daily oral and intravenous, or IV, antibiotic. The Company believes that omadacycline has the potential to become the primary antibiotic choice of physicians for use as a broad-spectrum monotherapy antibiotic for acute bacterial skin and skin structure infections, or ABSSSI, community-acquired bacterial pneumonia, or CABP, urinary tract infection, or UTI, and other serious community-acquired bacterial infections, where resistance is of concern. The Company believes omadacycline, if approved, will be used in the emergency room, hospital and community care settings. The Company has designed omadacycline to provide potential advantages over existing antibiotics, including activity against resistant bacteria, broad spectrum antibacterial activity, oral and IV formulations with once-daily dosing, no known drug interactions, and a favorable safety and tolerability profile.

Omadacycline entered Phase 3 clinical development in June 2015 for the treatment of ABSSSI and in November 2015 for the treatment of CABP. Both of these studies utilized initiation of IV therapy with transitions to oral based therapy on clinical response. During the conduct of these studies, an independent data safety monitoring board, or DSMB, completed multiple planned reviews of the safety data. Following each meeting, the DSMB recommended that the studies continue without modification to the protocols or study conduct. In June 2016, the Company announced positive top-line efficacy and safety data for the ABSSSI study and initiated a Phase 3 clinical study with oral-only administration of omadacycline in ABSSSI compared to oral-only linezolid in August 2016. In January 2017, the Company announced completion of enrollment in the CABP study and anticipates top-line results early in the second quarter of 2017. The Company anticipates top-line results for the oral-only ABSSSI study as early as the late second quarter of 2017.

The Company also recently completed clinical Phase 1 studies with omadacycline that are needed for inclusion in the planned New Drug Application, or NDA, regulatory filing with the FDA. In these Phase 1 studies, omadacycline was generally safe and well-tolerated, consistent with prior Phase 1 studies. In May 2016, the Company initiated its first oral-only and IV-to-oral study of omadacycline dosed for five days in a Phase 1b clinical study in patients with a UTI. This Phase 1b UTI study was recently completed. Data from this study showed that omadacycline achieved proof of principle, by demonstrating high concentration levels of omadacycline in urine, across IV-to-oral and oral-only dosing regimens.

The Company's second Phase 3 antibacterial product candidate, sarecycline, also known as WC3035, is a new, once-daily, tetracycline-derived compound designed for use in the treatment of acne and rosacea. The Company believes that, based upon the data generated to-date, sarecycline possesses favorable anti-inflammatory activity, plus narrow-spectrum antibacterial activity relative to other tetracycline-derived molecules, oral bioavailability, does not cross the blood-brain barrier, and favorable PK properties that the Company believes make it particularly well-suited for the treatment of inflammatory acne in the community setting. The Company has exclusively licensed U.S. development and commercialization rights to sarecycline for the treatment of acne to Allergan plc, or Allergan, while retaining development and commercialization rights in the rest of the world. Allergan has informed the Company that sarecycline entered Phase 3 clinical trials for the treatment of acne vulgaris in December 2014 and anticipates that top-line data from the Phase 3 trial of sarecycline will be available in the first half of 2017. The Company also granted Allergan an exclusive license to develop and commercialize sarecycline for the treatment of rosacea in the United States, which converted to a non-exclusive license in December 2014 after Allergan did not exercise its development option with respect to rosacea. There are currently no clinical trials with sarecycline in rosacea underway.

Prior to October 30, 2014, the name of the Company was Transcept Pharmaceuticals, Inc., or Transcept. On October 30, 2014, Transcept completed a business combination with privately held Paratek Pharmaceuticals, Inc., or Old Paratek, in accordance with the terms of the Agreement and Plan of Merger and Reorganization, dated as of June 30, 2014, by and among Transcept, Tigris Merger Sub, Inc., or Merger Sub, Tigris Acquisition Sub, LLC, or Merger LLC, and Old Paratek, or the Merger Agreement, pursuant to which

Merger Sub merged with and into Old Paratek, with Old Paratek surviving as a wholly-owned subsidiary of Transcept, followed by the merger of Old Paratek with and into Merger LLC, with Merger LLC surviving as a wholly-owned subsidiary of Transcept (the Company refers to these mergers together as the Merger). Also on October 30, 2014, in connection with, and prior to the completion of the Merger, Transcept effected a 1-for-12 reverse stock split of its common stock, or the Reverse Stock Split, and immediately following the Merger, Transcept changed its name to "Paratek Pharmaceuticals, Inc.", and Merger LLC changed its name to "Paratek Pharma, LLC." Following the completion of the Merger, the business conducted by Paratek Pharmaceuticals Inc. became primarily the business conducted by Paratek.

Immediately prior to the Merger, Old Paratek sold 8,068,766 shares of its common stock for an aggregate purchase price of $93.0 million to certain existing Paratek stockholders and certain new investors in Paratek, or the Financing. Immediately prior to the closing of the Financing, the $6.0 million in aggregate principal amount outstanding under, and all accrued interest on, the nonconvertible senior secured promissory notes issued in March 2014, or the 2014 Notes, converted into 1,335,632 shares of Old Paratek's common stock based on a conversion price of $0.778 per share. Further, and also immediately prior to the closing of the Financing, each share of Old Paratek's preferred stock outstanding at that time was converted into shares of Old Paratek's common stock at a ratio determined in accordance with Paratek's certificate of incorporation then in effect. The parties to the Financing and to the conversion of the 2014 Notes include officers, employees and directors of Paratek, making these transactions related party in nature.

Under the terms of the Merger Agreement, Transcept issued shares of its common stock to Old Paratek's stockholders, at an exchange rate of 0.0675 shares of common stock, after taking into account the Reverse Stock Split, in exchange for each share of Old Paratek common stock outstanding immediately prior to the Merger. Transcept also assumed all of the stock options outstanding under the Old Paratek 2014 Equity Incentive Plan, as amended, or the Paratek Plan, and stock warrants of Old Paratek outstanding immediately prior to the Merger, with such stock options and warrants henceforth representing the right to purchase a number of shares of Transcept common stock equal to 0.0675 multiplied by the number of shares of Old Paratek common stock previously represented by such options and warrants. Transcept also assumed the Paratek Plan.

After consummation of the Merger, the Old Paratek stockholders, warrant holders and option holders owned approximately 89.6% of the fully-diluted common stock of Paratek, with Transcept's stockholders and optionholders immediately prior to the Merger, whose shares of Paratek common stock (including shares received upon the cancellation of existing options) remain outstanding after the Merger, owning approximately 10.4% of the fully-diluted common stock of Paratek. Under generally accepted accounting principles in the United States of America, or U.S. GAAP, the Merger was treated as a "reverse merger" under the purchase method of accounting. For accounting purposes, Old Paratek is considered to have acquired Transcept.

The Company has incurred significant losses since inception in 1996. The Company has generated an accumulated deficit of $380.4 million through December 31, 2016 and will require substantial additional funding in connection with the Company's continuing operations to support commercial activities associated with its lead product candidate, omadacycline. Based upon the Company's current operating plan, it anticipates that cash, cash equivalents and available for sale marketable securities of $128.0 million will enable the Company to fund operating expenses and capital expenditure requirements through the first half of 2018. The Company expects to finance future cash needs primarily through a combination of public or private equity offerings, debt or other structured financings, strategic collaborations and grant funding. The Company is subject to risks common to companies in the biopharmaceutical industry, including, but not limited to, risks of failure of preclinical studies and clinical trials, the need to obtain additional financing to fund the future development of the Company's product candidates, the need to obtain compliant product from third party manufacturers, the need to obtain marketing approval for the Company's product candidates, the need to successfully commercialize and gain market acceptance of product candidates, the risks of manufacturing product with an external supply chain, dependence on key personnel, and compliance with government regulations.

2. Summary of Significant Accounting Policies

Basis of Presentation

The consolidated financial statements have been prepared in accordance with U.S. GAAP as found in the Accounting Standards Codification, or ASC, and Accounting Standards Update, or ASU, of the Financial Accounting Standards Board, or FASB, and pursuant to the rules and regulations of the Securities Exchange Commission, or SEC. Certain reclassifications were made to conform to the current presentation.

Principles of Consolidation

The accompanying unaudited condensed consolidated financial statements include the results of operations of Paratek Pharmaceuticals, Inc. and its wholly-owned subsidiaries, Paratek Pharma, LLC, Paratek Securities Corporation, Transcept Pharma, Inc., Paratek UK, Ltd and Paratek Bermuda, Ltd. All significant intercompany accounts and transactions have been eliminated in consolidation.

Use of Estimates

The preparation of consolidated financial statements in conformity with U.S. GAAP requires management of the Company to make certain estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. These estimates are based on management's best knowledge of current events and actions the Company may undertake in the future. Management considers many factors in selecting appropriate financial accounting policies and controls, and in developing the estimates and assumptions that are used in the preparation of these financial statements. Management must apply significant judgment in this process. In addition, other factors may affect estimates, including: expected business and operational changes, sensitivity and volatility associated with the assumptions used in developing estimates, and whether historical trends are expected to be representative of future trends. The estimation process often may yield a range of potentially reasonable estimates of the ultimate future outcomes and management must select an amount that falls within that range of reasonable estimates. This process may result in actual results differing materially from those estimated amounts used in the preparation of the financial statements. Estimates are used in accounting for, among other items, intangible assets, goodwill, contingent liabilities, stock-based compensation arrangements, clinical accruals, useful lives for depreciation and amortization of long-lived assets and valuation allowances on deferred tax assets. Actual results could differ from those estimates. The Company evaluates its estimates on an ongoing basis. Changes in estimates are reflected in reported results in the period in which they become known by the Company's management.

During the year ended December 31, 2016, the Company changed one of its intangible assets' estimated useful life to better reflect the estimated periods during which the asset will remain in service. Refer to "Valuation of Other Long-Lived Intangible Assets" under Item 7, "Management's Discussion and Analysis of Financial Condition and Results or Operations," for further details.

Cash and Cash Equivalents and Marketable Securities

The Company considers all highly liquid investments purchased with original maturities of 90 days or less at acquisition to be cash equivalents. Cash and cash equivalents include cash held in banks and amounts held primarily in interest-bearing money market accounts. Cash equivalents are carried at cost, which approximates their fair market value.

The Company determines the appropriate classification of marketable securities at the time of purchase and reevaluates such designation at each balance sheet date. The Company classified all of its marketable securities at December 31, 2016 as "available-for-sale" pursuant to ASC 320, *Investments – Debt and Equity Securities.* Investments not classified as cash equivalents are presented as either short-term or long-term investments based on both their maturities as well as the time period we intend to hold such securities. Available-for-sale securities are maintained by an investment manager and consist of U.S. treasury and government agency securities. Available-for-sale securities are carried at fair value with the unrealized gains and losses included in other comprehensive income (loss) as a component of stockholders' equity until realized. Any premium or discount arising at purchase is amortized or accreted to interest expense or income over the life of the instrument. Realized gains and losses are determined using the specific identification method and are included in other income or expense. There were no realized gains or losses on marketable securities recognized for the year ended December 31, 2016.

The Company reviews marketable securities for other-than-temporary impairment whenever the fair value of a marketable security is less than the amortized cost and evidence indicates that a marketable security's carrying amount is not recoverable within a reasonable period of time. Other-than-temporary impairments of investments are recognized in the consolidated statements of operations and comprehensive loss if the Company has experienced a credit loss, has the intent to sell the marketable security, or if it is more likely than not that the Company will be required to sell the marketable security before recovery of the amortized cost basis. Evidence considered in this assessment includes reasons for the impairment, compliance with the Company's investment policy, the severity and duration of the impairment and changes in value subsequent to the end of the period. There were no other-than-temporary impairments of investments recognized for the year ended December 31, 2016.

Fair Value of Financial Instruments

The Company is required to disclose information on all assets and liabilities reported at fair value that enables an assessment of the inputs used in determining the reported fair values. FASB ASC 820, *Fair Value Measurements and Disclosures*, or ASC 820, establishes a hierarchy of inputs used in measuring fair value that maximizes the use of observable inputs and minimizes the use of

unobservable inputs by requiring that the observable inputs be used when available. Observable inputs are those that market participants would use in pricing the asset or liability based on market data obtained from sources independent of the Company. Unobservable inputs reflect the Company's assumptions about the inputs that market participants would use in pricing the asset or liability and are developed based on the best information available in the circumstances. The fair value hierarchy applies only to the valuation inputs used in determining the reported fair value of the investments and is not a measure of the investment credit quality. The three levels of the fair value hierarchy are described below:

Level 1—Valuations based on unadjusted quoted prices in active markets for identical assets or liabilities that the Company has the ability to access at the measurement date.

Level 2—Valuations based on quoted prices for similar assets or liabilities in markets that are not active or for which all significant inputs are observable, either directly or indirectly.

Level 3—Valuations that require inputs that reflect the Company's own assumptions that are both significant to the fair value measurement and unobservable.

To the extent that valuation is based on models or inputs that are less observable or unobservable in the market, the determination of fair value requires more judgment. Accordingly, the degree of judgment exercised by the Company in determining fair value is greatest for instruments categorized in Level 3. A financial instrument's level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement.

Items measured at fair value on a recurring basis include marketable securities (Note 7, *Cash and Cash Equivalents and Marketable Securities,* and Note 14, *Fair Value Measurements*) and contingent consideration (Note 14, *Fair Value Measurements*). The carrying amounts of accounts payable and accrued expenses approximate their fair values due to their short-term maturities.

Restricted Cash

Cash accounts with any type of restriction are classified as restricted cash. If restrictions are expected to be lifted in the next twelve months, the restricted cash account is classified as current.

Concentration of Credit Risk

Financial instruments that subject the Company to credit risk consist primarily of cash, restricted cash, and accounts receivable. The Company places its cash in an accredited financial institution and this balance is above federally insured amounts. The Company has no off-balance sheet concentrations of credit risk such as foreign currency exchange contracts, option contracts or other hedging arrangements. For the year ended December 31, 2016, revenue consisted of royalty income in connection with the collaboration agreement the Company entered into with Purdue Pharma, L.P., or Purdue Collaboration Agreement. No revenue was recorded for the year ended December 31, 2015. For the year ended December 31, 2014, Allergan represented 92% of research and development revenue.

Fixed Assets

Fixed assets, including leasehold improvements, are recoded at cost and depreciated when placed into service using the straight-line method, based on their estimated useful lives as follows:

	Estimated useful Life In Years
Laboratory equipment	5
Office equipment	5
Computer equipment	3
Computer software	3

In addition, leasehold improvements are depreciated over the shorter of their estimated useful lives or the term of the respective lease on a straight-line basis.

Costs for capital assets not yet placed into service have been capitalized as construction-in-progress and will be depreciated in accordance with the above guidelines once placed into service. The Company reviews our long-lived assets for impairment whenever events or changes in business circumstances indicate that the carrying amount of assets may not be fully recoverable or that the useful lives of these assets are no longer appropriate. Each impairment test is based on a comparison of the undiscounted cash flow to the

recorded value of the asset. If impairment is indicated, the asset will be written down to its estimated fair value on a discounted cash flow basis. Upon sale or retirement, the asset cost and related accumulated depreciation are removed from the respective accounts, and any related gain or loss is reflected in results of operations. Repair and maintenance costs are expensed as incurred.

Valuation of Other Long-Lived Intangible Assets

The Company's finite-lived intangible assets are stated at cost less accumulated amortization. The Company calculates amortization expense by the straight-line method using estimated useful lives of the related assets, which range from three to thirteen years. The Company reviews finite-lived assets for impairment whenever events or changes in circumstances occur that indicate that the carrying amount of an asset (or asset group) may not be recoverable. The Company's impairment review is based on an estimate of the undiscounted cash flows at the lowest level for which identifiable cash flows exist and impairment occurs when the book value of the asset exceeds the estimated future undiscounted cash flows generated by the asset. When an impairment is indicated, a charge is recorded for the difference between the book value of the asset and its fair value. Depending on the asset, estimated fair value may be determined either by use of a discounted cash flow model, or by reference to estimated selling values of assets in a similar condition.

In accordance with the Company's policy, the Company reviews the estimated useful lives of its long-lived intangible assets on an ongoing basis.

Valuation of Goodwill

The Company tests for goodwill impairment annually, on October 1, unless there are indications during an interim period that these assets are more likely than not to have become impaired. The first step of the goodwill impairment test is to compare the fair value of a reporting unit to its carrying amount to determine if there is potential impairment. If the fair value of the reporting unit is less than its carrying value, the second step of the goodwill impairment test is performed to measure the amount of impairment loss.

The second step of the goodwill impairment test compares the implied fair value of a reporting unit's goodwill with the carrying amount of that goodwill. If the carrying amount of a reporting unit's goodwill exceeds the implied fair value of that goodwill, an impairment loss is recognized in an amount equal to that excess. The implied fair value of goodwill is determined in the same manner as the amount of goodwill recognized in a business combination. That is, the fair value of the reporting unit is allocated to all of the assets and liabilities of that unit (including any unrecognized intangible assets) as if the reporting unit had been acquired in a business combination and the fair value was the purchase price paid to acquire the reporting unit.

Determining the fair value of a reporting unit under the first step of the goodwill impairment test and determining the fair value of individual assets and liabilities of a reporting unit (including unrecognized intangible assets) under the second step of the goodwill impairment test is inherently subjective in nature and often involves the use of significant estimates and assumptions based on known facts and circumstances at the time we perform the valuation. The use of different assumptions, inputs and judgments or changes in circumstances could materially affect the results of the valuation and could have a significant impact on whether or not an impairment charge is recognized and the magnitude of any such charge. The Company did not record an impairment charge relating to goodwill for the years ended December 31, 2016, 2015 and 2014.

Accrued Expenses

The Company's process of determining accrued expense for a financial period-end involves reviewing open contracts and purchase orders, communicating with personnel to identify services that have been performed for the Company and estimating the level of service performed and the associated cost incurred for the service when the Company has not yet been invoiced or otherwise notified of the actual cost. The majority of the Company's service providers invoice periodically in arrears for services performed or when contractual milestones are met. The Company estimates accrued expenses at a financial period-end based on facts and circumstances known at that time and may periodically confirm the accuracy of estimates with its service providers and make adjustments if necessary.

Contingent Consideration

Contingent consideration arising from a business combination is included as part of the purchase price and is recognized at fair value as of the acquisition date. Subsequent to the acquisition date, the Company measures contingent consideration arrangements at fair value for each period until the contingency is resolved. These changes in fair value are recognized in the consolidated statements of operations. Changes in fair values reflect new information about the likelihood of the payment of the contingent consideration and the passage of time.

Convertible Preferred Stock

Convertible preferred stock is initially recorded at the proceeds received, net of issuance costs and value allocated to warrants, where applicable.

Convertible Preferred Stock Warrants

The Company accounts for free standing warrants as liabilities at their fair value. The Company's existing warrants prior to the merger were exercisable into convertible preferred stock that was classified as mezzanine equity on the balance sheet and, as such, the fair value of the warrants was recorded as a liability. The Company measured the fair value at the end of each reporting period and recorded the change to other income (expense). The Company continued to record adjustments to the fair value of the warrants until the closing of the merger transaction on October 30, 2014, when they became warrants to purchase shares of common stock, at which point the warrants were no longer subject to ASC Topic 480, *Distinguishing Liabilities From Equity*. As of October 30, 2014, the then-current aggregate fair value of these warrants ($40,000), was reclassified from a liability to additional paid-in capital, a component of stockholders' equity.

Leases

The company leases our facilities under non-cancelable operating leases that expire at various dates through 2024. The leases contain rent escalation and rent holiday, which are being accounted for as rent expense under the straight-line method. Deferred rent is included in accounts payable and other accrued expenses in the consolidated balance sheet. As of December 31, 2016, the company recorded a lease incentive obligation on the consolidated balance sheets representing a landlord incentive to reimburse the Company up to $0.2 million for construction on additional lease space in accordance with the company's executed amended lease agreement at its Boston office location. These amounts are treated as reduction to rent expense over the lease term.

Revenue Recognition

The Company enters into product development agreements with collaborators for the research and development of therapeutic products. The terms of these agreements may include nonrefundable signing and licensing fees, funding for research, development and manufacturing, milestone payments and royalties on any product sales derived from collaborations. The Company assesses these multiple elements in accordance with the FASB, Accounting Standards Codification, or ASC 605, *Revenue Recognition*, in order to determine whether particular components of the arrangement represent separate units of accounting.

The Company recognizes upfront license payments as revenue upon delivery of the license only if the license has stand-alone value. If the license does not have stand-alone value, the revenue under the arrangement is recognized as revenue over the estimated period of performance.

Whenever the Company determines that an arrangement should be accounted for as a single unit of accounting, the Company determines the period over which the performance obligations will be performed and revenue will be recognized. If the Company cannot reasonably estimate the timing and the level of effort to complete its performance obligations under the arrangement, then revenue under the arrangement is recognized on a straight-line basis over the period that the Company expects to complete its performance obligations, which is reassessed at each subsequent reporting period.

The Company's collaboration agreements may include additional payments upon the achievement of performance-based milestones. As milestones are achieved, a portion of the milestone payment, equal to the percentage of the total time that the Company has performed the performance obligations to date over the total estimated time to complete the performance obligations, multiplied by the amount of the milestone payment, is recognized as revenue upon achievement of such milestone. The remaining portion of the milestone will be recognized over the remaining performance period. If the Company has no future obligations under the collaboration agreement, the milestone payments are recognized as revenue in the period the milestone is received. Milestones that are tied to regulatory approval are not considered probable of being achieved until such approval is received. Milestones tied to counterparty performance are not included in the Company's revenue model until the performance conditions are met.

For the year ended December 31, 2016, Company recognized $29,000 of royalty revenue from its Purdue Collaboration Agreement. No royalty revenue was recognized for the years ended December 31, 2015 and 2014. The Company will continue to recognize royalty revenue upon the sale of the relevant products, provided there are no remaining performance obligations under the arrangement.

On October 28, 2016, in satisfaction of the Company's payment obligation of the proceeds of sale or disposition of the Intermezzo assets to the former Transcept stockholders under the Merger Agreement, the Company executed the Royalty Sharing

Agreement. Under the Royalty Sharing Agreement, the Company agreed to pay to the former Transcept stockholders fifty percent of all royalty income received by the Company pursuant to the Purdue Collaboration Agreement, net of all costs, fees and expenses incurred by the Company in connection with the Purdue Collaboration Agreement, related agreements, the Intermezzo product and the administration of the royalty income to the Transcept stockholders. The Company recognizes all royalty income received from Purdue upon the sale of Intermezzo.

The Company also adopted guidance that permits the recognition of revenue contingent upon the achievement of a milestone in its entirety, in the period in which the milestone is achieved, only if the milestone meets certain criteria and is considered to be substantive. As such, the Company plans to recognize revenue in the period in which the milestone is achieved, only if the milestone is considered to be substantive based on the following criteria:

a. The milestone is commensurate with either of the following:
   - The vendor's performance to achieve the milestone.
   - The enhancement of the value of the delivered item or items as a result of a specific outcome resulting from the vendor's performance to achieve the milestone.

b. The milestone relates solely to past performance.

c. The milestone is reasonable relative to all of the deliverables and payment terms (including other potential milestone consideration) within the arrangement.

The Company did not enter into any significant multiple element arrangements or materially modify any of its existing multiple element arrangements during the years ended December 31, 2016, 2015 and 2014, except for the termination of an existing collaborative research, license and commercialization agreement with a leading global animal health provider and the termination of the SNBL License Agreement. For further information, see Note 5, *License and Collaboration Agreements*.

The Company records deferred revenue when payments are received in advance of the culmination of the earnings process. This revenue is recognized in future periods when the applicable revenue recognition criteria have been met.

Government research grants that provide for payments to the Company for work performed are recognized as revenue when the related expense is incurred. The Company's government grant payments are nonrefundable and contain no repayment obligations.

Research and Development Expenses

Research and development expenses are charged to expense as incurred. Research and development expenses consist of the costs incurred in performing research and development activities, including personnel-related costs, stock-based compensation, facilities, research-related overhead, clinical trial costs, contracted services, manufacturing, license fees and other external costs. The Company accounts for nonrefundable advance payments for goods and services that will be used in future research and development activities as expenses when the service has been performed or when the goods have been received rather than when the payment is made.

Income Taxes

The company accounts for income taxes under the asset and liability method. Under this method, deferred tax assets and liabilities are recognized for the estimated future tax consequences attributable to differences between financial statement carrying amounts of existing assets and liabilities and their respective tax bases. Deferred tax assets and liabilities are measured using enacted rates in effect for the year in which these temporary differences are expected to be recovered or settled. Valuation allowances are provided if, based on the weight of available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized.

The company provides reserves for potential payments of tax to various tax authorities related to uncertain tax positions and other issues. Reserves are based on a determination of whether and how much of a tax benefit taken by the company in its tax filing is more likely than not to be realized following resolution of any potential contingencies present related to the tax benefit. Potential interest and penalties associated with such uncertain tax positions recorded as components of income tax expense. To date, the Company has not taken any uncertain tax position or recorded any reserves, interest or penalties.

Stock-Based Compensation

The Company accounts for its stock-based awards in accordance with ASC 718, *Compensation—Stock Compensation*, or ASC 718, which requires all stock-based payments to employees, including grants of stock options, modifications to existing stock options, and restricted stock unit awards, to be recognized as expense based on their fair values. The Company recognizes the compensation cost of awards subject to performance-based vesting conditions over the requisite service period, to the extent achievement of the performance condition is deemed probable relative to targeted performance using the accelerated attribution method. If achievement of the performance condition is not probable, but the award will vest based on the service condition, the Company recognizes the expense over the requisite service period. A change in the Company's estimate of the probable outcome of a performance condition is accounted for in the period of the change by recording a cumulative catch-up adjustment. The Company accounts for stock-based awards to non-employees using the fair value method on a straight-line basis over the associated service period of the award. The Company expenses restricted stock unit awards to employees based on the fair value of the award on a straight-line basis over the associated service period of the award.

Share-based payments issued to non-employees are recorded at their fair values, are periodically revalued as the equity instruments vest and are recognized as expense over the related service period in accordance with the provisions of ASC 718 and ASC Topic 505 (ASC 505), *Equity*.

The Company estimates the fair value of its stock-based awards to employees and non-employees using the Black-Scholes option pricing model, which requires the input of highly subjective assumptions, including (1) the expected volatility of stock, (2) the expected term of the award, (3) the risk-free interest rate and (4) expected dividends. Due to the lack of a public market for the Company’s common stock prior to completion of reverse merger on October 30, 2014, and resulting lack of company-specific historical and implied volatility data, the Company has based its estimate of expected volatility on the historical volatility of a group of similar companies that are publicly traded. For these analyses, the Company has selected companies with characteristics that are comparable, including enterprise value, risk profiles, position within the industry, and with historical share price information sufficient to meet the expected life of the stock-based awards. The Company computes the historical volatility data using the daily closing prices for the selected companies' shares during the equivalent period as the calculated expected term of its stock-based awards. During 2015, the Company began to blend its stock price history, for the length of time it has market data for its stock, with the historical volatility of similar public companies for the expected term of each grant. The Company has estimated the expected life of its employee stock options as the average of the midpoints between vesting exercise date for each vesting-trance and the contractual term of the options as the last available exercise date of the option. The risk-free interest rates for periods within the expected life of the option are based on the U.S. Treasury yield curve in effect during the period the options were granted.

The Company also estimates forfeitures at the time of grant and revises those estimates, with any difference recorded as a cumulative adjustment in the period the estimates were revised. Stock-based compensation expense recognized in the consolidated financial statements is based on awards that are ultimately expected to vest. For the years ended December 31, 2016 and 2015, the Company applied an estimated forfeiture rate of approximately 9%.

Comprehensive Income (Loss)

Comprehensive income (Loss) is defined as the change in non-owner sources of equity of a business enterprise durind a period from transactions, other events and circumstances and currently consists of net loss and changes in unrealized gains and losses on available-for-sale securities.

Segment and Geographic Information

Operating segments are defined as components of an enterprise engaging in business activities for which discrete financial information is available and regularly reviewed by the chief operating decision maker in deciding how to allocate resources and in assessing performance. The Company views its operations and manages its business in one operating segment, and the Company operates in only one geographic segment.

Subsequent Events

The Company considers events or transactions that occur after the balance sheet date, but prior to the issuance of the financial statements to provide additional evidence relative to certain estimates or to identify matters that require additional disclosure. Refer to the Notes below for further details on subsequent events.

Recent Accounting Pronouncements

From time to time, new accounting pronouncements are issued by the FASB or other standard setting bodies and adopted by the Company as of the specified effective date. Unless otherwise discussed, the Company believes that the impact of recently issued standards that are not yet effective will not have a material impact on its financial position or results of operations upon adoption.

Between May 2014 and May 2016, the FASB issued three ASUs changing the requirements for recognizing and reporting revenue, or together, herein referred to as the Revenue ASUs: (i) ASU No. 2014-09, *Revenue from Contracts with Customers*, or ASU 2014-09, (ii) ASU No. 2016-08, *Principal versus Agent Considerations (Reporting Revenue Gross versus Net),* or ASU 2016-08, and (iii) ASU No. 2016-12, *Narrow-Scope Improvements and Practical Expedients*, or ASU 2016-12. ASU 2014-09 provides guidance for revenue recognition to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. ASU 2016-08 is intended to improve the operability and understandability of the implementation guidance on principal versus agent considerations. ASU 2016-12 provides practical expedients and improvements on the previously narrow scope of ASU 2014-09. In August 2015, the FASB issued ASU No. 2015-14, *Revenue from Contracts with Customers (Topic 606): Deferral of the Effective Date*, or ASU 2015-14. ASU 2015-14 defers the effective date of ASU 2014-09 by one year to fiscal years, and interim periods within, beginning after December 15, 2017. All subsequent ASUs related to ASU 2014-09, including ASU 2016-08 and ASU 2016-12, assumed the deferred effective date enforced by ASU 2015-14. Early adoption of the Revenue ASUs is permitted for annual periods, and interim periods within, beginning after December 15, 2016. A reporting entity may apply the amendments in the Revenue ASUs using either a modified retrospective approach, by recording a cumulative-effect adjustment to equity as of the beginning of the fiscal year of adoption or full retrospective approach. The Company is evaluating the complete impact of the adoption of the Revenue ASUs on January 1, 2018 to its consolidated financial position and results of operations. Based on the Company's current assessment of the effect of the new standard on historical revenue under its two current collaboration agreements that is related to upfront and milestone payments, the Company believes these historical amounts will not have a material impact on its consolidated financial statements. The new standard may have a material impact on future revenue to be recognized under the Company's Allergan Collaboration Agreement. The Company does not believe the new standard will have a material impact on revenue recognized related to its Purdue Collaboration Agreement. The Company expects to elect the full retrospective application as its transition method.

In June 2014, the FASB issued ASU 2014-12 Compensation—Stock Compensation. In March 2016, the FASB issued ASU 2016-09—Compensation—Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting. This ASU simplifies several areas of accounting for share-based payment transactions, including the income tax consequences, classification of awards as either liabilities or equity and classification of excess tax benefits on the statement of cash flows. This guidance also permits a new entity-wide accounting policy election to either estimate the number of awards that are expected to vest or account for forfeitures when they occur. This guidance will be effective for annual reporting periods beginning after December 15, 2016, including interim periods within those annual reporting periods, and early adoption is permitted. The Company adopted this ASU as of January 1, 2017. The adoption of this standard is expected to impact income tax footnote disclosures. Upon adoption of the standard, the Company expects to make a policy election to realize forfeitures as they occur. As such, the Company expects to record a cumulative-effect adjustment to equity of $0.7 million upon adoption.

In August 2014, the FASB issued ASU 2014-15 *Presentation of Financial Statements-Going Concern*. The amendments in this update apply to all reporting entities and require an entity's management, in connection with preparing financial statements for each annual and interim reporting period, to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the entity's ability to continue as a going concern within one year after the date that the financial statements are issued (or within one year after the date that the financial statements are available to be issued when applicable). This ASU is effective for annual periods ending after December 15, 2016. The Company adopted this standard for the year ended December 31, 2016. Based on the results of the Company's analysis, no additional disclosures were required.

In February 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842)*. The amendment requires a lessee to recognize assets and liabilities for leases with a maximum possible term of more than 12 months. A lessee would recognize a liability to make lease payments (the lease liability) and a right-of-use asset representing its right to use the leased asset (the underlying asset) for the lease term. This ASU is effective for fiscal years beginning after December 15, 2018, including those interim periods within those fiscal years. The Company is currently evaluating the impact the adoption of the ASU will have on its consolidated financial statements.

In August 2016, the FASB issued ASU No. 2016-15, *Statement of Cash Flows (Topic 230),* which simplifies certain elements of cash flow classification. The new guidance is intended to reduce diversity in practice in how certain transactions are classified in the statement of cash flows. The ASU is effective for annual periods beginning after December 15, 2017. The Company is currently evaluating the impact the adoption of the ASU will have on its consolidated financial statements.

In October 2016, the FASB issued ASU No. 2016-16, *Intra-Entity Transfers of Assets Other Than Inventory*, or ASU 2016-16. The amendments in ASU 2016-16 require an entity to recognize the income tax consequences of intra-entity transfers of assets other than inventory at the time that the transfer occurs. Current guidance does not require recognition of tax consequences until the asset is eventually sold to a third party. ASU 2016-16 is effective for fiscal years, and interim periods within, beginning after December 15, 2017. Early adoption is permitted as of the first interim period presented in a year. A reporting entity must apply the amendments in ASU 2016-16 using a modified retrospective approach by recording a cumulative-effect adjustment to equity as of the beginning of the fiscal year of adoption. The Company is evaluating the impact of the adoption of ASU 2016-16 on January 1, 2018 to its consolidated financial position and results of operations. The Company does not expect the adoption of ASU 2016-16 to have a material impact to its consolidated financial position or results of operations.

In November 2016, the FASB issued ASU No. 2016-18, *Restricted Cash*, or ASU 2016-18. The amendments in ASU 2016-18 require an entity to reconcile and explain the period-over-period change in total cash, cash equivalents and restricted cash within its statements of cash flows. ASU 2016-18 is effective for fiscal years, and interim periods within, beginning after December 15, 2017. Early adoption is permitted. A reporting entity must apply the amendments in ASU 2016-18 using a full retrospective approach. The Company is currently evaluating the impact the adoption of the ASU will have on its consolidated financial statements.

In January 2017, the FASB issued ASU No. 2017-04, *Simplifying the Test for Goodwill Impairment*, or ASU 2017-04. The amendments in ASU 2017-04 eliminate the current two-step approach used to test goodwill for impairment and require an entity to apply a one-step quantitative test and record the amount of goodwill impairment as the excess of a reporting unit's carrying amount over its fair value, not to exceed the total amount of goodwill allocated to the reporting unit. ASU 2017-04 is effective for fiscal years, including interim periods within, beginning after December 15, 2019 (upon the first goodwill impairment test performed during that fiscal year). Early adoption is permitted for interim or annual goodwill impairment tests performed on testing dates after January 1, 2017. A reporting entity must apply the amendments in ASU 2017-04 using a prospective approach. The Company does not expect the adoption of ASU 2017-04 to have a material impact to its consolidated financial position or results of operations.

3. Merger Agreement

As described in Note 1, *Organization*, the Company completed the Merger with Transcept on October 30, 2014 for the principal purposes of utilizing the cash resources held by Transcept to continue the development of the late-stage product candidate held by Paratek and for the access to capital markets afforded in Transcept's public listing.

Purchase Consideration

Purchase consideration amounted to $27.2 million determined based on the fair value of the net assets exchanged detailed as follows (in thousands):

	Purchase Consideration
Stock consideration	$ 19,786
Contingent obligations to former Transcept stockholders with respect to:	
Intermezzo product rights	4,140
Intermezzo reserve	2,870
TO-2070 license rights	440
Total purchase consideration	$ 27,236

Stock consideration in the Merger is determined relative to the publicly traded price of a share of Transcept's common stock immediately prior to the Merger as adjusted for cash dividends declared by Transcept as part of the Merger. Such dividends also included the right for former Transcept shareholders to receive certain contingent amounts, in the future, consisting of:

(i) one hundred percent of any royalty income received by the Company prior to October 30, 2016, pursuant to the United States License and Collaboration Agreement, dated July 31, 2009, as amended November 1, 2011, by and between Transcept and Purdue Pharmaceutical Products L.P.;

(ii) one hundred percent of any payments received by the Company pursuant to the termination of a License Agreement with SNBL which granted the Company an exclusive worldwide license to commercialize SNBL's proprietary nasal drug delivery technology for development of TO-2070, a proprietary nasal powder drug delivery system;

(iii) ninety percent of any cash proceeds from a sale or disposition of Intermezzo (less all fees and expenses incurred by the Company in connection with such sale or disposition following the closing date); provided such sale or disposition occurs prior to October 30, 2016, and

(iv) the amount, if any, of the $3.0 million Intermezzo reserve deposited at closing which is remaining at October 30, 2016.

The contingent obligations to former Transcept stockholders as described above were recognized at fair value as of the acquisition date and were subsequently remeasured each reporting period. The change in fair value was recognized in our consolidated statements of operations.

The fair value of the contingent obligations to former Transcept stockholders prior to the second anniversary of the Merger was determined using probability-weighted scenario methodologies, employing cash-flow and sale proceeds income approaches with consideration to the potential timing of possible payments to former Transcept stockholders.

Material assumptions used to value contingent obligations to former Transcept stockholders with respect to Intermezzo product right and the associated Intermezzo reserve included:

- probabilities associated with the various outcomes of the ongoing Abbreviated New Drug Application, or ANDA, litigation and the potential sale of Intermezzo product rights;
- the forecasted Intermezzo product revenues and associated royalties due the Company, as well as the appropriate discount rate given consideration to the market and forecast risk involved; and
- the potential proceeds associated with, and timing of, the sale of the Company's Intermezzo product rights.

Material assumptions used to value contingent obligations to former Transcept stockholders with respect to Intermezzo product right and the associated Intermezzo reserve included:

- probabilities associated with SNBL licensing the TO-2070 license rights under the SNBL Termination Agreement; and
- potential proceeds associated with, and timing of, the potential payments in accordance with the SNBL Termination Agreement.
- with SNBL licensing the TO-2070 license rights under the SNBL Termination Agreement; and
- Potential proceeds associated with, and timing of, the potential payments in accordance with the SNBL Termination Agreement.

Allocation of Purchase Consideration

Purchase consideration was allocated to the net tangible and identifiable intangible assets acquired and the liabilities assumed based on their fair values as of October 30, 2014 detailed as follows (in thousands):

	Allocation of Purchase Consideration
Cash	$ 13,688
Bridge loan from Transcept to Paratek	5,100
Restricted cash—Intermezzo reserve	3,000
Current liabilities, net	(371)
Intangible assets acquired with respect to:	
Intermezzo product rights	4,550
TO-2070 license rights	440
Goodwill	829
Total purchase consideration	$ 27,236

Fair value of cash and other working capital accounts, including accounts receivable, other current assets, accounts payable and accrued expenses, approximates book value on acquisition. Fair values are based on assumptions concerning the amount and timing of estimated future cash flows and assumed discount rates, reflecting varying degrees of perceived risk.

Given the significant uncertainty concerning the ultimate disposition of both Transcept's Intermezzo product rights and the TO-2070 license rights, the Company has estimated the fair value of the acquired identifiable intangible assets probability-weighted

scenario methodologies, employing cash-flow and sale proceeds income approaches with consideration to the potential timing of possible payments to former Transcept stockholders as described above with respect to the associated contingent liabilities. Goodwill of $0.8 million resulting from the allocation of total purchase consideration represents effectively the value of Transcept's public listing. Goodwill is not expected to be deductible for tax purposes.

Pro forma information

The following unaudited pro forma information presents a summary of the Company's consolidated results of operations as if the Merger had taken place as of January 1, 2014 (in thousands):

	December 31, 2014
Pro forma combined revenues	$ 5,304
Pro forma combined net loss	$ (12,733)
Pro forma basic and diluted net loss per share	$ (1.02)

4. Net Loss Per Share Available to Common Stockholders

Basic net loss per share available to common stockholders is calculated by dividing the net loss available to common stockholders by the weighted-average number of common shares outstanding during the period, without consideration for common stock equivalents. Diluted net loss per share available to common stockholders is computed by dividing the net loss available to common stockholders by the weighted-average number of common share equivalents outstanding for the period determined using the treasury-stock method or the as if converted method, as applicable. For purposes of this calculation, convertible preferred stock, stock options and convertible preferred and common stock warrants are considered to be common stock equivalents and are only included in the calculation of diluted net loss per share available to common stockholders when their effect is dilutive.

The following table presents the computation of basic and diluted net loss per share. For 2014, the table presents the computation of basic and diluted net loss per share reflecting the effect of the reverse stock split in connection with the Merger (in thousands, except share and per share data):

	Year Ended December 31,		
	2016	2015	2014
Numerator			
Net loss	$ (111,636)	$ (70,860)	$ (17,835)
Less: Unaccreted dividends on convertible preferred stock	—	—	(1,927)
Net loss attributable to common stockholders	(111,636)	(70,860)	(19,762)
Denominator			
Weighted-average common shares outstanding—basic and diluted	20,253,082	16,501,912	2,528,595
Net loss per share—basic and diluted	$ (5.51)	$ (4.29)	$ (7.82)

The following outstanding shares subject to options and warrants to purchase common stock were antidilutive due to a net loss in the years presented and, therefore, were excluded from the dilutive securities computation as of the dates indicated below (in thousands):

	Year Ended December 31,		
	2016	2015	2014
Excluded potentially dilutive securities (1):			
Shares subject to options to purchase common stock	2,780,791	2,242,890	781,568
Unvested restricted stock	454,000	275,500	—
Shares subject to warrants to purchase common stock	79,454	47,426	14,734
Shares issuable under employee stock purchase plan	36,539	36,539	36,539
Totals	3,350,784	2,602,355	832,841

(1) The number of shares is based on the maximum number of shares issuable on exercise or conversion of the related securities as of the year end. Such amounts have not been adjusted for the treasury stock method or weighted average outstanding calculations as required if the securities were dilutive.

5. License and Collaboration Agreements

Allergan plc

In July 2007, the Company and Warner Chilcott Company, Inc. (now part of Allergan), entered into a collaborative research and license agreement, or the Allergan Collaboration Agreement, under which the Company granted Allergan an exclusive license to research, develop and commercialize tetracycline products for use in the United States for the treatment of acne and rosacea. Since Allergan did not exercise its development option with respect to the treatment of rosacea prior to initiation of a Phase 3 trial for the product, the license grant to Allergan converted to a non-exclusive license for the treatment of rosacea as of December 2014. Under the terms of the Allergan Collaboration Agreement, the Company and Allergan are responsible for, and are obligated to use, commercially reasonable efforts to conduct specified development activities for the treatment of acne and, if requested by Allergan, the Company may conduct certain additional development activities to the extent the Company determines in good faith that the Company has the necessary resources available for such activities. Allergan has agreed to reimburse the Company for its costs and expenses, including third-party costs, incurred in conducting any such development activities.

Under the terms of the Allergan Collaboration Agreement, Allergan is responsible for and is obligated to use commercially reasonable efforts to develop and commercialize tetracycline compounds that are specified in the agreement for the treatment of acne. Allergan failed to elect to advance the development of sarecycline for the treatment of rosacea in accordance with the terms of the agreement so the license granted to Allergan was converted to a non-exclusive license for the treatment of rosacea The Company has agreed during the term of the Allergan Collaboration Agreement not to directly or indirectly develop or commercialize any tetracycline compounds in the United States for the treatment of acne and rosacea, and Allergan has agreed during the term of the Allergan Collaboration Agreement not to directly or indirectly develop or commercialize any tetracycline compound included as part of the agreement for any use other than as provided in the agreement.

The Company earned an upfront fee in the amount of $4.0 million upon the execution of the Allergan Collaboration Agreement, $1.0 million upon filing of an Investigational New Drug Application in 2010, and $2.5 million upon initiation of Phase 2 trials in 2012. In December 2014, the Company also earned $4.0 million upon initiation of Phase 3 trials associated with the Allergan Collaboration Agreement. In addition, Allergan may be required to pay the Company an aggregate of approximately $17.0 million upon the achievement of specified future regulatory milestones, the next being $5.0 million upon acceptance by the FDA, of a NDA, submission. Allergan is also obligated to pay the Company tiered royalties, ranging from the mid-single digits to the low double digits, based on net sales of tetracycline compounds developed under the Allergan Collaboration Agreement, with a standard royalty reduction post patent expiration for such product for the remainder of the royalty term. Allergan's obligation to pay the Company royalties for each tetracycline compound it commercializes under the Allergan Collaboration Agreement expires on the later of the expiration of the last to expire patent that covers the tetracycline compound in the United States and the date on which generic drugs that compete with the tetracycline compound reach a certain threshold market share in the United States.

Either the Company or Allergan may terminate the Allergan Collaboration Agreement for certain specified reasons at any time after Allergan has commenced development of any tetracycline compound, including if Allergan determines that it would not be commercially viable to continue to develop or commercialize the tetracycline compound and/or that it is unlikely to obtain regulatory approval of the tetracycline compound, and, in any case, no backup tetracycline compound is in development or ready to be developed and the parties are unable to agree on an extension of the development program or an alternative course of action. Either the Company or Allergan may terminate the Allergan Collaboration Agreement for the other party's uncured breach of a material term of the agreement on 60 days' notice (unless the breach relates to a payment term, which requires a 30-day notice) or upon the bankruptcy of the other party that is not discharged within 60 days. Upon the termination of the Allergan Collaboration Agreement by Allergan for the Company's breach, Allergan's license will continue following the effective date of termination, subject to the payment by Allergan of the applicable milestone and royalty payments specified in the agreement unless our breach was with respect to certain specified obligations, in which event the obligation of Allergan to pay us any further royalty or milestone payments will terminate. Upon the termination of the Allergan Collaboration Agreement by us for Allergan's breach or the voluntary termination of the agreement by Allergan, Allergan's license under the agreement will terminate.

The Company determined whether the performance obligations under the Allergan Collaboration Agreement could be accounted for separately or as a single unit of accounting. The Company determined that the license, participation on steering committees and research and development services performance obligations during the research period of the Allergan Collaboration Agreement represented a single unit of accounting. As the Company could not reasonably estimate its level of effort, the Company recognized

revenue from the upfront payment, milestone payment and research and development services payments using the contingency-adjusted performance model over the expected development period. The development period was completed in June 2010. Under this model, when a milestone was earned or research and development services were rendered, revenue was immediately recognized on a pro-rata basis in the period the milestone was achieved or services were delivered based on the time elapsed from the effective date of the agreement. Thereafter, the remaining portion was recognized on a straight-line basis over the remaining development period. The Company has determined that each potential future clinical, regulatory and commercialization milestone is substantive. In making this determination, pursuant to the accounting guidance on revenue recognition for milestone payments, the Company considered and concluded that each individual milestone: (i) relates solely to the past performance of the intellectual property to achieve the milestone; (ii) is reasonable relative to all of the deliverables and payment terms in the arrangement; and (iii) is commensurate with the enhanced value of the intellectual property as a result of the milestone achievement. As the Company's obligations under this arrangement have been completed, all future milestones, which are all considered substantive, will be recognized as revenue when achieved.

Also, the Company, at its discretion, may provide manufacturing process development services to Allergan in exchange for full-time equivalent based cost reimbursements. The Company determined that the manufacturing process development services are considered a separate unit of accounting as (i) they are set at the Company's discretion, (ii) they have stand-alone value, as these services could be performed by third parties, and (iii) the full-time equivalent rate paid for such services rendered is considered fair value. Therefore, the Company recognizes cost reimbursements for manufacturing process development services as revenue as the services are performed.

Tufts University

In February 1997, the Company and Tufts University, or Tufts, entered into a license agreement under which the Company acquired an exclusive license to certain patent applications and other intellectual property of Tufts related to the drug resistance field to develop and commercialize products for the treatment or prevention of bacterial or microbial diseases or medical conditions in humans or animals or for agriculture. The Company subsequently entered into nine amendments to that agreement, collectively the Tufts License Agreement, to include patent applications filed after the effective date of the original license agreement, to exclusively license additional technology from Tufts, to expand the field of the agreement to include disinfectant applications, and to change the royalty rate and percentage of sublicense income paid by the Company to Tufts under sublicense agreements with specified sublicensees. The Company is obligated under the Tufts License Agreement to provide Tufts with annual diligence reports and a business plan and to meet certain other diligence milestones. The Company has the right to grant sublicenses of the licensed rights to third parties, which will be subject to the prior approval of Tufts unless the proposed sublicensee meets a certain net worth or market capitalization threshold. The Company is primarily responsible for the preparation, filing, prosecution and maintenance of all patent applications and patents covering the intellectual property licensed under the Tufts License Agreement at its sole expense. The Company has the first right, but not the obligation, to enforce the licensed intellectual property against infringement by third parties.

The Company issued Tufts 1,024 shares of the Company's common stock on the date of execution of the original license agreement, and the Company may be required to make certain payments of up to $0.3 million to Tufts upon the achievement by products developed under the agreement of specified development and regulatory approval milestones. The Company has already made a payment of $50,000 to Tufts for achieving the first milestone following commencement of the Phase 3 clinical trial for omadacycline. The Company is also obligated to pay Tufts a minimum royalty payment in the amount of $25,000 per year. In addition, the Company is obligated to pay Tufts royalties based on gross sales of products, as defined in the agreement, ranging in the low single digits depending on the applicable field of use for such product sale. If the Company enters into a sublicense under the agreement, based on the applicable field of use for such product, we agreed to pay. Tufts a percentage, ranging from 10% to 14% (ten percent to fourteen percent) of that portion of any sublicense issue fees or maintenance fees received by us that are reasonably attributable to the sublicense of the rights granted to us under the Tufts License Agreement and the lesser of a percentage ranging from the low tens to the high twenties based on the applicable field of use for such product, of the royalty payments made to us by the sublicensee or the amount of toyalty payments that would have been paid by us to Tufts if we had sold the product.

Unless terminated earlier, the Tufts License Agreement will expire at the same time as the last-to-expire patent in the patent rights licensed to the Company under the agreement and after any such expiration the Company will continue to have an exclusive, fully-paid-up license to such intellectual property licensed from Tufts. Tufts has the right to terminate the agreement upon 30 days' notice should the Company fail to make a material payment under the Tufts License Agreement or commit a material breach of the agreement and not cure such failure or breach within such 30-day period, or if, after the Company has started to commercialize a product under the Tufts License Agreement, the Company ceases to carry on its business for a period of 90 consecutive days. The Company has the right to terminate the Tufts License Agreement at any time upon 180 days' notice. Tufts has the right to convert the Company's exclusive license to a non-exclusive license if the Company does not commercialize a product licensed under the agreement within a specified time period.

Purdue Pharma L.P.

In July 2009, the Company and Purdue Pharma L.P., or Purdue Pharma, entered into the Purdue Collaboration Agreement, that grants an exclusive license to Purdue Pharma to commercialize Intermezzo in the United States and pursuant to which:

- Purdue Pharma paid the Company a $25.0 million non-refundable license fee in August 2009;
- Purdue Pharma paid the Company a $10.0 million non-refundable intellectual property milestone in December 2011 when the first of two issued formulation patents was listed in the FDA's Approved Drug Products with Therapeutic Equivalence Evaluations, or Orange Book;
- Purdue Pharma paid the Company a $10.0 million non-refundable intellectual property milestone in August 2012 when the first of two issued methods of use patents was listed in the FDA's Orange Book;
- The Company transferred the Intermezzo NDA to Purdue Pharma, and Purdue Pharma is obligated to assume the expense associated with maintaining the NDA and further development of Intermezzo in the United States, including any expense associated with post-approval studies;
- Purdue Pharma is obligated to commercialize Intermezzo in the United States at its expense using commercially reasonable efforts;
- Purdue Pharma is obligated to pay the Company tiered base royalties on net sales of Intermezzo in the United States ranging from the mid-teens up to the mid-20% level, with each such royalty tiers subject to an increase by a percentage in the low single digits upon a specified anniversary of regulatory approval of Intermezzo. The base royalty is tiered depending upon the achievement of certain fixed net sales thresholds by Purdue Pharma, which net sales levels reset each year for the purpose of calculating the royalty. The royalty tiers are subject to reductions upon generic entry and patent expiration. Purdue Pharma is obligated to pay royalties until the later of 15 years from the date of first commercial sale in the United States or the expiration of patent claims related to Intermezzo; and
- Purdue Pharma is obligated to pay the Company up to an additional $70.0 million upon the achievement of certain net sales targets for Intermezzo in the United States.

The Company had an option to co-promote Intermezzo to psychiatrists in the United States and such option was terminated as a result of the Merger.

The Purdue Collaboration Agreement expires on the expiration of Purdue Pharma's royalty obligations. Purdue Pharma has the right to terminate the Purdue Collaboration Agreement at any time upon advance notice of 180 days. The Purdue Collaboration Agreement is also subject to termination by Purdue Pharma in the event of FDA or governmental action that materially impairs Purdue Pharma's ability to commercialize Intermezzo or the occurrence of a serious event with respect to the safety of Intermezzo. The Purdue Collaboration Agreement may also be terminated by the Company upon Purdue Pharma commencing an action that challenges the validity of Intermezzo related patents. The Company also has the right to terminate the Purdue Collaboration Agreement immediately if Purdue Pharma is excluded from participation in federal healthcare programs. The Purdue Collaboration Agreement may also be terminated by either party in the event of a material breach by or insolvency of the other party.

The Company also granted Purdue Pharma and an associated company the right to negotiate for the commercialization of Intermezzo in Mexico in 2013 but retained the rights to commercialize Intermezzo in the rest of the world.

In December 2013, Purdue Pharma notified the Company that it intended to discontinue use of the Purdue Pharma sales force to actively market Intermezzo to healthcare professionals during the first quarter of 2014.

In October 2014, the Company announced that its board of directors had approved a special dividend of, among other things, the right to receive, on a pro rata basis, 100% of any royalty income received by the Company pursuant to the Purdue Collaboration Agreement and 90% of any cash proceeds from a sale or disposition of Intermezzo, less fees and expenses incurred in connection with such activity, to the extent that either occurs prior to the second anniversary of the closing date of the Merger. On October 28, 2016, in satisfaction of the Company's payment obligation of the proceeds of sale or disposition of the Intermezzo assets to the former Transcept stockholders under the Merger Agreement, the Company executed the Royalty Sharing Agreement with the Special Committee. Under the Royalty Sharing Agreement, the Company agreed to pay to the former Transcept stockholders fifty percent of all royalty income received by the Company pursuant to the Purdue Collaboration Agreement, net of all costs, fees and expenses incurred by the Company in connection with the Purdue Collaboration Agreement, related agreements, the Intermezzo product and the administration of the royalty income to the Transcept stockholders. The remaining balance of the Intermezzo Reserve, with the

exception of unpaid legal fees, as well as any outstanding royalty payments was paid to former Transcept stockholders shortly after the second anniversary of the Merger.

Shin Nippon Biomedical Laboratories Ltd.

In September 2013, the Company and SNBL entered into a License Agreement, or SNBL License Agreement, pursuant to which SNBL granted the Company an exclusive worldwide license to commercialize SNBL's proprietary nasal drug delivery technology to develop TO-2070. The Company was developing TO-2070 as a treatment for acute migraine using SNBL's proprietary nasal powder drug delivery system. Under the SNBL License Agreement, the Company was required to fund all development and regulatory approval with respect to TO-2070. Pursuant to the SNBL License Agreement, the Company paid an upfront nonrefundable technology license fee of $1.0 million, and the Company was also obligated to pay up to an aggregate of $41.5 million upon the achievement of certain development, regulatory and sales milestones, and tiered, low double-digit royalties on annual net sales of TO-2070.

In September 2014, the Company and SNBL entered into a Termination Agreement and Release, or the SNBL Termination Agreement, pursuant to which, among other things, the SNBL License Agreement was terminated and the Company assigned all of its rights, interest and title to the TO-2070 license rights to SNBL in exchange for a portion of certain future net revenue received by SNBL as set forth in the SNBL Termination Agreement, up to an aggregate of $2.0 million.

Past Collaborations

Novartis

In September 2009, the Company and Novartis International Pharmaceutical Ltd., or Novartis, entered into a Collaborative Development, Manufacture and Commercialization License Agreement, or the Novartis Agreement, for the co-development and commercialization of omadacycline, which included a $70 million upfront payment from Novartis to the Company, future development and sales milestone payments and future royalty payments, depending on the success of omadacycline. Under the agreement, Novartis was to have led development activities for omadacycline, and the Company was to have co-developed omadacycline and contributed a share of the Company's development expense.

The Novartis Agreement provided that Novartis would bear the majority of all direct development costs incurred in connection with omadacycline and would assume all responsibility for the manufacturing of omadacycline. The agreement provided Novartis with a global, exclusive patent license for the development, manufacturing and marketing of omadacycline.

Novartis had the right to terminate the agreement without cause upon providing 60 days' advance written notice. Novartis provided the Company with a notice of intent to terminate the agreement on June 29, 2011, and the termination became effective 60 days later. While Novartis terminated the agreement without cause, Novartis indicated that it elected to terminate the agreement due to the then-existing delays and uncertainties experienced in connection with the regulatory pathway for approval of omadacycline in two core indications, ABSSSI and CABP.

In January 2012, the Company and Novartis entered into a letter agreement, or the Novartis Letter Agreement, in which the Company reconciled shared development costs and expenses and granted Novartis a right of first negotiation with respect to commercialization rights of omadacycline following approval of omadacycline from the FDA, the European Medicines Agency, or EMA, or any regulatory agency, but only to the extent that the Company has not previously granted such commercialization rights for omadacycline to another third party as of any such approval.

Under the Novartis Letter Agreement, the Company agreed to pay Novartis $2.9 million as reconciliation of development costs and expenses. In June 2014, the Company amended the Novartis Letter Agreement, as amended, and Novartis agreed to convert the full amount of development cost share plus any accrued interest into a 0.25% royalty, to be paid from net sales received by the Company in any country following the launch of omadacycline in that country and continuing until the later of expiration of the last active valid patent claim covering such product in the country of sale and 10 years from the date of first commercial sale in such country. The amended Novartis Letter Agreement resulted in a long-term liability in the amount of $3.6 million for the year ended December 31, 2016 and 2015 included within "Other Long Term Liabilities" on the Company's consolidated balance sheet. There are no other payment obligations to Novartis under the Novartis Agreement or the Novartis Letter Agreement.

Global Animal Health Provider

In May 2014, the Company and a leading global animal health provider terminated an existing collaborative research, license and commercialization agreement. The Company has no future obligations under this agreement, and the leading global animal health company retains no rights to our technology. As a result of this termination, in 2014, the Company recognized the remaining $0.3 million of deferred revenue related to the upfront and milestone payments received in 2007 and 2008.

6. Restricted Cash

Short-term restricted cash

Intermezzo Reserve

In accordance with the Merger Agreement, the Intermezzo Reserve has been kept in a separate segregated bank account established at the closing date of the Merger. This account was utilized solely at the direction and in the discretion of the Special Committee, or its authorized delegates in connection with the Special Committee's management of the Intermezzo assets and the potential Intermezzo asset disposition. The remainder of Intermezzo Reserve, with the exception of unpaid legal fees, was paid out to the former Transcept stockholders shortly after the second anniversary of the Merger. Approximately $0.1 million remains in the reserve as of December 31, 2016. The reserve balance was $2.4 million as of December 31, 2015.

Letter of Credit

During the year ended December 31, 2016, the Company obtained a letter of credit in the amount of $0.8 million, which is collateralized with a bank account at a financial institution, to secure value-added tax registration in certain foreign countries. The letter of credit was cancelled by the Company subsequent to year-end. The Company plans to obtain a new letter of credit for the same value during the first quarter of 2017, depending upon currency rates.

Long-term restricted cash

Letter of Credit

The Company leases its Boston, Massachusetts office space under a non-cancelable operating lease. Refer to Note 18, *Commitments and Contingencies*, for further details. In accordance with the lease, the Company has a cash-collateralized irrevocable standby letter of credit in the amount of $0.3 million as of December 31, 2016 and 2015, naming the landlord as beneficiary.

7. Cash and Cash Equivalents and Marketable Securities

During 2016, the Company began investing in short-term marketable securities. The following is a summary of available-for-sale securities as of December 31, 2016 (in thousands):

	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
U.S. treasury securities	$ 62,574	$ —	$ (18)	$ 62,556
Government agencies	12,518	2	—	12,520
Total	$ 75,092	$ 2	$ (18)	$ 75,076

No available-for-sale securities held as of December 31, 2016 have remaining maturities greater than one year.

8. Fixed Assets, Net

Fixed assets consist of the following (in thousands):

	Estimated Useful Life In Years	December 31, 2016	December 31, 2015
Office equipment	5	443	424
Computer equipment	3	251	288
Computer software	3	787	443
Leasehold improvements		137	210
Construction-in-progress		391	—
Gross fixed assets		2,009	1,365
Less: Accumulated depreciation and amortization		(821)	(586)
Net fixed assets		$ 1,188	$ 779

In addition, leasehold improvements are amortized over the shorter of the lease term or the estimated useful economic lives of the related assets.

Depreciation expense for the years ended December 31, 2016, 2015 and 2014 was approximately $0.3 million, $0.1 million, and $20,000 respectively, which is included in general and administrative and research and development expense on the accompanying consolidated statements of operations.

Construction-in-progress as of December 31, 2016 includes $0.4 million related to construction costs incurred by the Company at its Boston office location.

During 2016, the Company retired a small amount of fixed assets with no gain or loss recognized. During 2015, the Company retired fixed assets of $0.7 million with accumulated depreciation of $0.7 million, which resulted in a net loss of approximately $16,000. During 2014, the Company retired fixed assets of $0.3 million with accumulated depreciation of $0.3 million, which resulted in a net gain on retirement of $15,000 due to proceeds received of $15,000.

9. Intangible Assets, Net

Intermezzo product rights and the TO-2070 license rights were acquired through the Merger. Refer to Note 5, *License and Collaboration Agreements,* for further detail concerning Intermezzo and TO-2070. Intangible assets are reviewed when events or circumstances indicate that the assets might be impaired. An impairment loss would be recognized when the estimated undiscounted cash flows to be generated by those assets are less than the carrying amounts of those assets. If it is determined that the intangible asset is not recoverable, an impairment loss would be calculated based on the excess of the carrying value of the intangible asset over its fair value.

On March 27, 2015, a decision was made by the United States District Court for the District of New Jersey, or the New Jersey District Court, concerning Intermezzo patent infringement claims the Company made in response to the filing of an ANDA with the FDA. The decision made by the New Jersey District Court invalidated several Intermezzo patent claims as obvious. As a result of the New Jersey District Court's ruling, the Company performed an interim impairment test of the Intermezzo product rights in connection with the preparation of its unaudited condensed consolidated financial statements for the first quarter of 2015. Based on the intangible asset impairment test performed, the Company recorded a non-cash impairment charge of $2.8 million for the first quarter of 2015. The Company appealed the New Jersey District Court's ruling during the second quarter of 2015. On January 8, 2016 the United States Court of Appeals for the Federal Circuit, or the U.S. Court of Appeals, affirmed the decision of the New Jersey District Court, and no opinion accompanied the judgment. Refer to Note 18, *Commitments and Contingencies,* for further information concerning the litigation.

The January 8, 2016 decision by the U.S. Court of Appeals triggered an evaluation of the carrying value of the Intermezzo product rights and related contingent obligations in light of an expected decline in Intermezzo sales during the second half of 2016. On April 5, 2016, the first generic launch of Intermezzo occurred. The Company performed a recoverability test each reporting period during 2016. It was determined that the summation of the undiscounted future cash flow of the Intermezzo product rights were greater than the carrying value for all reporting periods. As such, the Company did not record an impairment charge during the twelve months ended December 31, 2016.

In accordance with the Company's policy, the estimated useful lives of long-lived intangible assets are reviewed on an ongoing basis. During the year ended December 31, 2016, the execution of the Royalty Sharing Agreement prompted a change in the estimated useful life of the Intermezzo product rights. The Company extended the estimated useful life to better reflect the projected period it will receive royalties from Intermezzo product sales. The estimated useful life of Intermezzo product rights was increased from five years to fifteen years. The effect of this change in estimate reduced amortization expense and net loss recognized during the year ended December 31, 2016 by $60,000 and increased 2016 basic and diluted earnings per share by an immaterial amount. The remaining carrying amount of the Intermezzo product rights will be amortized prospectively over the revised remaining useful life.

During the fourth quarter of 2015, the Company was made aware of the unlikelihood that SNBL will find a potential partner to co-develop the TO-2070 license rights. This significant uncertainty triggered an examination of the carrying value of the TO-2070 product rights and related contingent obligation to former Transcept stockholders. The Company estimated the fair value of the acquired identifiable intangible assets using a probability-weighted cash flow estimation approach for potential milestone payments from SNBL with consideration to the timing of possible payments of associated contingent liabilities to former Transcept stockholders. Based on the intangible asset impairment test performed on the TO-2070 product rights, the Company recorded a non-cash impairment charge of $0.1 million. No such impairment exists as of December 31, 2016.

Intangible assets consist of the following (in thousands):

	December 31,	
	2016	2015
Intermezzo product rights	$ 1,410	$ 1,410
TO-2070 license rights	170	170
Gross intangible assets	1,580	1,580
Less: Accumulated amortization	(565)	(231)
Net intangible assets	$ 1,015	$ 1,349

Intermezzo product rights were impaired during 2015. After the impairment charge and change in useful life, the Intermezzo product rights is being amortized over a remaining useful life of 13 years as of December 31, 2016. TO-2070 product rights were impaired during the fourth quarter of 2015. TO-2070 product rights are being amortized over a remaining useful life of two years as of December 31, 2016. There was no impairment recorded for the year ended December 31, 2014.

Total amortization expense for the years ended December 31, 2016, 2015, and 2014 was $0.3 million, $0.6 million and $0.2 respectively.

Amortization expense is expected to be as follows for the next five-year period (in thousands):

	Amortization
Years Ended December 31,	
2017	$ 158
2018	73
2019	73
2020	73
2021	73
Total	$ 450

10. Accrued Expenses

Accrued expenses consist of the following (in thousands):

	December 31,	
	2016	2015
Accounts payable	$ 4,418	$ 766
Accrued legal costs	358	615
Accrued compensation	2,609	1,323
Intermezzo payable	49	288
Accrued professional fees	1,118	874
Accrued contract manufacturing	1,940	2,443
Accrued other	298	134
Total	$ 10,790	$ 6,443

11. Notes Payable and Derivative Liability—Related Party

As a result of the Merger and concurrent recapitalization, there are no notes payables-related party outstanding as of December 31, 2016 and December 31, 2015. Historically, the Company has issued several notes with attendant derivative liabilities detailed as follows:

March 2012 Notes

In February and March 2012, the Company issued nonconvertible notes, or the March 2012 Notes to certain individuals and entities in the original aggregate principal amount of $5.8 million. The holders of the March 2012 Notes included officers, employees and directors of the Company, making the March 2012 Notes related party in nature. Pursuant to the terms of the March 2012 Notes, upon a reorganization, defined as a capital reorganization of the common stock (other than a subdivision, combination, recapitalization, reclassification or exchange of shares), a consolidation or merger of the Company, other than a merger or consolidation of the Company in a transaction in which the Company's shareholders immediately prior to the transaction possess more than 50% of the voting securities of the surviving entity (or parent, if any) immediately after the transaction, or a sale of all or substantially all of the Company's assets, the March 2012 Notes would become due and payable and the Company would be required to repurchase each note in an amount equal to the outstanding principal amount of such notes, plus 150% of the outstanding principal amount of each note, together with simple interest at a rate of 10.0% per year.

Upon certain liquidity events, including the license, transfer or assignment of all or a material portion of the Company's assets or intellectual property, a public offering or any other alternative financing other than a reorganization defined above, the board of directors was required to evaluate whether the Company had sufficient cash on hand to repurchase the March 2012 Notes and to fund the Company's working capital and funding needs for the Company's clinical trials and related activities for at least 180 days. If sufficient cash was available, the Company was required to repurchase such notes at an amount equal to the outstanding principal amount of such notes, plus an amount equal to (i) 150% of the outstanding principal amount of each note if such repurchase occurred before August 13, 2013, or (ii) 150% of the outstanding principal amount of each note, together with simple interest at a rate of 10.0% per year, if the repurchase occurred after August 13, 2013. In such instance, if the Company only had sufficient cash to repurchase a portion of the March 2012 Notes, they were required to be repurchased on a pro rata basis. The March 2012 Notes could also have been repurchased by the Company at any time with approval by the board of directors and consent from the holders of more than 50% of the outstanding March 2012 Notes, in an amount equal to the outstanding principal amount of such notes, plus 150% of the outstanding principal amount of each note, together with simple interest at a rate of 10.0% per year. The March 2012 Notes did not have a contractual maturity date.

The purchase agreement pursuant to which the March 2012 Notes were issued included a provision that required the existing convertible preferred stockholders to participate in the offering of the March 2012 Notes based on their pro rata share of the $5.0 million offering amount. On March 21, 2012, pursuant to a vote of certain preferred stockholders, all convertible preferred stock was converted to common stock effective upon the close of business on the day immediately preceding the second closing of the March 2012 Notes financing. The convertible preferred stockholders who contributed at least their pro rata share converted back to their respective series of convertible preferred stock and retained the rights and privileges of their respective preferred stock class. See Note 13, *Preferred Stock*, below for these rights and preferences. In the event that the convertible preferred stockholders did not contribute their pro rata share, these stockholders continued to hold common stock. Upon the completion of the transaction, 1,024,509 shares of convertible preferred stock that were converted into 218,324 shares of common stock remained outstanding as shares of common stock.

The March 2012 Notes met the definition of a derivative in their entirety as defined by ASC 815, *Derivatives and Hedging*. The derivative was recorded at a fair value of $11.3 million upon the closing of the transaction within the derivative liability line on the balance sheets. As the fair value of the derivative liability exceeded the proceeds of the March 2012 Notes, the difference of $5.5 million between the fair value of the derivative liability and the proceeds from the March 2012 Notes was recorded as a charge to other expense at the time of the closing of the transaction. The derivative liability was marked to market at each reporting period with the change in fair value recorded in other income and expense.

The fair value of the derivative liability was determined using unobservable inputs and therefore was considered a Level 3 liability in the fair value hierarchy.

October 2012 Notes

In October 2012, the Company entered into a note and stock purchase agreement and issued $5.0 million in aggregate principal amount of convertible notes to certain of the Company's existing stockholders, or the October 2012 Notes. The holders of the October 2012 Notes included officers, employees and directors of the Company, making the October 2012 Note transaction related party in nature. The terms of the October 2012 Notes were substantially similar to the terms of the March 2012 Notes as described above with the following exceptions:

- Each October 2012 Note holder was entitled to receive up to four shares of the Company's common stock for each $1.00 of notes purchased, with one-third of such shares, the "upfront shares", issued upon the purchase of the October 2012 Notes, and the remaining two-thirds of such shares, the "deferred shares", issued upon the completion of an initial public offering, so long as the offering occurred prior to April 2, 2013. The Company issued 224,802 upfront shares associated with the $5.0 million raised in October 2012. The Company would have issued 449,623 shares if the Company had completed an initial public offering by April 2, 2013.
- If the board of directors approved any other private financing that was completed prior to an initial public offering, each holder would have been entitled to convert such holder's investment in the notes, including the outstanding principal amount plus accrued and unpaid simple interest at 10.0% from the date of issuance, into the security that was issued as part of such private financing on terms and conditions no less favorable to the other investors participating in such private financing. All holders of the October 2012 Notes who elect to convert their notes, however, were required to forfeit all of their upfront shares, as well as the right to receive any deferred shares.

The Company has determined that the upfront and deferred shares were free-standing financial instruments to be separately accounted for as equity.

- The 224,802 upfront shares issued simultaneously with the October 2012 Notes were recorded in equity at a fair value of $4.7 million along with a corresponding charge to other expense in the year ended December 31, 2012.
- The 449,623 deferred shares to be issued upon completion of the initial public offering were recorded in equity at a fair value of $8.9 million along with a corresponding charge to other expense in the year ended December 31, 2012.

The October 2012 Notes also met the definition of a derivative in their entirety as set forth in ASC 815, *Derivatives and Hedging*. This derivative was recorded at a fair value of $10.1 million upon the closing of the transaction within the derivative liability line on the balance sheets. The $5.1 million excess of the fair value of the derivative liability over the $5.0 million of proceeds from the October 2012 Notes was recorded as other expense at the time of the closing of the transaction.

Exchange Notes, 2012 Notes

Additionally, in October 2012 the Company and the holders of the March 2012 Notes agreed to exchange all of the March 2012 Notes for notes with substantially similar terms as the October 2012 Notes, or the Exchange Notes, and together with the October 2012 Notes, the 2012 Notes, except that the holders of the Exchange Notes were not entitled to receive any upfront or deferred shares of the Company's common stock.

2013 Notes

In 2013, the Company issued $4.8 million in aggregate principal amount of additional convertible promissory notes to certain investors, including existing stockholders, or the 2013 Notes. The holders of the 2013 Notes include officers, employees and directors of the Company, making the 2013 Note transaction related party in nature. The terms of the 2013 Notes were identical to the terms of the October 2012 Notes described above. The Company issued 216,087 upfront shares associated with the $4.8 million raised in 2013, which was recorded in equity at a fair value of $2.9 million along with a corresponding charge to other expense in the year ended

December 31, 2013. No deferred shares were issued as an initial public offering had not occurred prior to April 2, 2013, and as such there was no value assigned to any deferred shares associated with the 2013 Notes. The $2.0 million excess of the fair value of the derivative liability over the $4.8 million of proceeds from the 2013 Notes was recorded as other expense in the year ended December 31, 2013.

Convertible Notes

Together, the Exchange Notes, the October 2012 Notes and the 2013 Notes are referred to as the Convertible Notes. The Convertible Notes derivative liability was marked to fair value each reporting period with the change in fair value recorded in other income and expense. During the year ended December 31, 2013, the Company recorded $8.0 million in other income related to the re-measurement of the fair value of the derivative liability.

Upon completion of an initial public offering, all of the Convertible Notes would have been exchanged for notes with revised repurchase and conversion terms, or the Post-IPO Notes. Pursuant to the terms of the Post-IPO Notes, the Company would have been obligated to repurchase all Post-IPO Notes in an amount equal to the outstanding principal amount of such notes, plus 150% of the outstanding principal amount of each note, together with simple interest at a rate of 10.0% per year, upon the earlier to occur of (i) a reorganization, which is defined as a capital reorganization of the common stock (other than a subdivision, combination, recapitalization, reclassification or exchange of shares), a consolidation or merger of the Company (other than a merger or consolidation of the Company in a transaction in which the Company's shareholders immediately prior to the transaction possess more than 50% of the voting securities of the surviving entity (or parent, if any) immediately after the transaction) or a sale of all or substantially all of the Company's assets, or (ii) approval of any of the Company's product candidates, including omadacycline, for any indication by the FDA, the EMA or the equivalent regulatory agencies in at least two European countries. Additionally, the Company could have chosen to repurchase the Post-IPO Notes in an amount equal to the outstanding principal amount of such notes, plus 150% of the outstanding principal amount of each note, together with simple interest at a rate of 10.0% per year, prior to the events described in (i) or (ii) above if, after one or more specified liquidity events as described below, such repurchase was permitted under any existing loan documents and the board of directors determined in good faith that (A) none of the proceeds of the planned initial public offering would be used to effect such repurchase and (B) the Company had sufficient cash to fund its general operating needs through the completion of the two planned Phase 3 registration studies for ABSSSI and an additional 12 months thereafter. To effect this early repurchase, one or more liquidity events must have occurred, which include, among other things, a license or a public offering other than the planned initial public offering. In addition, any holder of Post-IPO Notes may convert all or a portion of the then-outstanding principal amount and any unpaid accrued interest of the Post-IPO Notes into shares of common stock in an amount equal to 150% of the principal amount of the Post-IPO Note elected to be converted, plus accrued and unpaid interest, at a conversion price equal to 115% of the initial public offering price. No Post-IPO Notes had been issued as of December 31, 2013 as the Company had not completed an initial public offering.

In 2014, the Company and the holders of the Convertible Notes agreed to convert all outstanding principal and interest into shares of a new series of the Company's convertible preferred stock. The derivative liability related to the Convertible Notes was eliminated upon their conversion in the March 2014 Notes recapitalization transaction, and the fair value was reclassified to mezzanine equity.

2014 Notes

In March 2014, the Company issued the 2014 Notes to certain individuals and entities in the original aggregate principal amount of $6.0 million in connection with a concurrent recapitalization of the Company's capital stock (See Note 12, *Common Stock)*. $520 of the $6.0 million raised in the 2014 Note financing had been prefunded by certain investors of the Company in prior periods. The 2014 Notes were collateralized by substantially all of the assets of the Company and accrued interest at a rate of 10% per annum. The holders of the 2014 Notes included officers, employees and directors of the Company, making the 2014 Notes related party in nature. Pursuant to the terms of the 2014 Notes, the aggregate amount of principal outstanding was to have become due and payable upon the first to occur of June 30, 2014 or a number of other defined events that had not transpired and, as a result, an event of default existed that the lenders agreed to forbear subject to a Debt Conversion Agreement, or the Debt Conversion Agreement, entered into in June 2014. Under the Debt Conversion Agreement, the $6.0 million principal amount outstanding under, and all interest accrued ($0.4 million) on, the 2014 Notes were converted into shares of the Company's common stock immediately prior to the closing of the Financing with a value of $15.4 million and resulted in a $9.0 million loss on exchange of non-convertible note for common stock recorded to other non-operating expenses in the year ended December 31, 2014.

The lead lenders committed to a minimum investment of $3.3 million in the March 2014 secured debt financing. The terms of the March 2014 secured debt financing included a provision that required the other existing holders of the outstanding convertible notes to participate in the offering of the 2014 Notes based on their pro rata share of the remaining $2.8 million offering amount. The convertible note holders who contributed their pro rata share to the March 2014 secured debt financing converted their existing

principal amount of convertible notes outstanding into 2.25 shares of newly designated Series A Convertible Preferred Stock, or New Series A Convertible Preferred Stock, for every $1.00 of principal outstanding. The convertible note holders who did not contribute their pro rata share to the March 2014 secured debt financing converted their existing principal amount of convertible notes outstanding into 1.00 share of New Series A Convertible Preferred Stock for every $1.00 of principal outstanding. Moreover, all accrued interest as of February 28, 2014 was converted into New Series A Convertible Preferred Stock on a dollar-for-dollar basis. Upon the closing of the March 2014 transactions, $15.6 million of principal and $2.2 million of accrued interest related to the existing convertible notes converted into 2,256,674 shares of New Series A Convertible Preferred Stock.

Pursuant to the terms of the March 2014 secured debt financing, in April 2014, the Lead Lenders invested the difference between $2.8 million and the amount invested by other holders of the existing convertible notes to bring the total financing proceeds to $6.0 million. The amount of this additional investment by the Lead Lenders was $0.7 million. In connection with this additional investment, the Lead Lenders received warrants exercisable for 9,614 shares of New Series A Convertible Preferred Stock with an exercise price of $0.01 per share, or the New Series A Warrants. The New Series A Warrants have a term of seven years. The New Series A Warrants were recorded at an initial fair value of approximately $40,000.

12. Common Stock

Following the Merger, the authorized capital stock of the Company consists of 100,000,000 shares of common stock, par value $0.001 per share, and the preferred stock described in Note 13, *Preferred Stock*.

The holders of common stock are entitled to one vote per share on all matters to be voted upon by the stockholders and there are no cumulative rights. Subject to preferences that may be applicable to any outstanding preferred stock, the holders of common stock are entitled to receive ratably any dividends that may be declared from time to time by the board of directors out of funds legally available for that purpose. In the event of liquidation of the Company, dissolution or winding up, the holders of common stock are entitled to share ratably in all assets remaining after payment of liabilities, subject to prior distribution rights of preferred stock then outstanding. The common stock has no preemptive or conversion rights or other subscription rights. There are no redemption or sinking fund provisions applicable to the common stock. The outstanding shares of common stock are fully paid and non-assessable.

On January 12, 2015, the Company filed a registration statement on Form S-3 with the SEC, as amended on April 24, 2015 and declared effective on April 27, 2015, to sell shares of our common stock, par value $0.001 per share, in an aggregate amount of up to $200.0 million to the public in a registered offering or offerings. Under this shelf registration, the Company completed an underwritten offering on May 5, 2015 of 3,089,000 shares of common stock at a public offering price of $24.50 per share, which includes 229,000 shares of common stock issued upon the exercise, in part, by the underwriters of an option to purchase additional shares from the Company. The aggregate proceeds received by the Company, after underwriting discounts and commissions and other offering expenses, were $70.4 million.

The Company completed a public offering in June 2016 of 4,887,500 shares of common stock at an offering price of $13.00 per share, which included 637,500 shares of common stock issued upon the exercise by the underwriters of an option to purchase additional shares from the Company. The net proceeds received by us, after underwriting discounts and commissions and other estimated offering expenses, were $59.3 million.

On October 15, 2015, Paratek Pharmaceuticals, Inc. entered into a Controlled Equity Offering℠ Sales Agreement, or the 2015 Sales Agreement, with Cantor Fitzgerald & Co., or Cantor, under which the Company could, at its discretion, from time to time sell shares of its common stock, with a sales value of up to $50.0 million. The Company provided Cantor with customary indemnification rights, and Cantor was entitled to a commission at a fixed rate of 3% of the gross proceeds per share sold. Sales of the shares under the 2015 Sales Agreement have been and, if there are additional sales under the 2015 Sales Agreement, will be made in transactions deemed to be “at the market offerings”, as defined in Rule 415 under the Securities Act of 1933, as amended.

The Company initiated sales of shares under the 2015 Sales Agreement in March 2016, and sold an aggregate of 860,014 shares of common stock through December 31, 2016, resulting in net proceeds of $11.6 million after deducting commissions of $0.4 million. As of February 24, 2017, an additional 870,078 shares were sold under the 2015 Sales Agreement subsequent to December 31, 2016 resulting in net proceeds of $13.1 million after deducting commissions of $0.4 million, which will be recognized during the first quarter of 2017.

On February 28, 2017, the Company entered into a second Controlled Equity Offering[SM] Sales Agreement, or the 2017 Sales Agreement, with Cantor, under which the Company could, at its discretion, from time-to-time sell shares of its common stock, with a sales value of up to $50.0 million. The Company provided Cantor with customary indemnification rights, and Cantor was entitled to a commission at a fixed rate of 3% of the gross proceeds per share sold. Any sales of the shares under the 2017 Sales Agreement will be made in transactions deemed to be "at the market offerings" as defined in Rule 415 under the Securities Act of 1933, as amended.

Warrants to Purchase Common Stock

Warrants to purchase preferred stock with intrinsic value issued to HBM Healthcare Investments (Cayman) Ltd., Omega Fund III, L.P., and K/S Danish BioVenture, all beneficial owners of more than 5% of the Company's common stock, were exchanged for 9,614 warrants to purchase common stock in connection with the Merger. 9,614 warrants to purchase common stock have an exercise price of $0.15 per share and will, if not exercised, expire in 2021. A further 5,120 warrants to purchase common stock with an exercise price of $73.66 per share expired in April 2016.

As described in Note 16, *Long-term Debt*, in connection with the Loan Agreement, the Company issued to each one of Hercules Technology II, L.P. and Hercules Technology III, L.P. a warrant to purchase 16,346 shares of its common stock (32,692 shares of common stock in total) at an exercise price of $24.47 per share, or the Hercules Warrants, on September 30, 2015, which expire five years from issuance or at the consummation of a Public Acquisition, as defined in each of the Hercules Warrant agreements. The Hercules Warrants' total relative fair value of $0.3 million was determined using a Black-Scholes option-pricing model with the following assumptions:

	September 30, 2015
Volatility	62.4%
Weighted average risk-free interest rate	1.4%
Expected dividend yield	0.0%
Expected term	5 years

As described in Note 16, *Long-term Debt*, in connection with the Loan Agreement Amendment, the Company issued to each one of Hercules Technology II, L.P. and Hercules Technology III, L.P. a warrant to purchase 18,574 shares of its common stock (37,148 shares of common stock in total) at an exercise price of $13.46 per shares, or the Loan Amendment Warrants.

Additionally, upon the Additional Tranche funding date, the Company will issue an additional warrant to each of Hercules Technology II, L.P. and Hercules Technology III, L.P. which together will be exercisable for an aggregate number of shares equal to $125,000 divided by the arithmetic mean of the Company's daily closing price per share for the ten trading days preceding the Additional Tranche funding date and each carry an exercise price equal to the arithmetic mean of the Company's daily closing price per share for the ten trading days preceding the Additional Tranche funding date. Each Warrant may be exercised on a cashless basis. The Warrants are exercisable for a term beginning on the date of issuance and ending on the earlier to occur of five years from the date of issuance or the consummation of certain acquisitions of the Company as set forth in the Warrants. The number of shares for which the Warrants are exercisable and the associated exercise price are subject to certain proportional adjustments as set forth in the Warrants.

The Loan Amendment Warrants', excluding the Conditional Warrants, total fair value of $0.3 million was determined using a Black-Scholes option-pricing model with the following assumptions:

	December 31, 2016
Volatility	60.2%
Weighted average risk-free interest rate	1.9%
Expected dividend yield	0.0%
Expected term	5 years

13. Preferred Stock

Following the Merger, the authorized capital stock of the Company consists of 5,000,000 shares of undesignated preferred stock, par value $0.001 per share, and the common stock described in Note 12, *Common Stock*. There are no shares of preferred stock outstanding.

The Company's Board of Directors has the authority, without further action by the stockholders, to issue up to 5,000,000 shares of preferred stock, in one or more series, and to fix the rights, preferences, privileges and restrictions granted to or imposed upon the preferred stock. Any or all of these rights may be greater than the rights of the common stock.

The board of directors, without stockholder approval, can issue preferred stock with voting, conversion or other rights that could negatively affect the voting power and other rights of the holders of common stock. Preferred stock could thus be issued quickly with terms calculated to delay or prevent a change in control of Paratek or make it more difficult to remove Paratek management. Additionally, the issuance of preferred stock may have the effect of decreasing the market price of Paratek's common stock.

The board of directors may specify the following characteristics of any preferred stock:

- the maximum number of shares;
- the designation of the shares;
- the annual dividend rate, if any, whether the dividend rate is fixed or variable, the date or dates on which dividends will accrue, the dividend payment dates, and whether dividends will be cumulative;
- the price and the terms and conditions for redemption, if any, including redemption at the option of Paratek or at the option of the holders, including the time period for redemption, and any accumulated dividends or premiums;
- the liquidation preference, if any, and any accumulated dividends upon the liquidation, dissolution or winding up of Paratek affairs;
- any sinking fund or similar provision, and, if so, the terms and provisions relating to the purpose and operation of the fund;
- the terms and conditions, if any, for conversion or exchange of shares of any other class or classes of Paratek capital stock or any series of any other class or classes, or of any other series of the same class, or any other securities or assets, including the price or the rate of conversion or exchange and the method, if any, of adjustment;
- the voting rights; and
- any or all other preferences and relative, participating, optional or other special rights, privileges or qualifications, limitations or restrictions.

Any preferred stock issued will be fully paid and nonassessable upon issuance.

As a result of the Merger and concurrent recapitalization, there are no shares of preferred stock issued or outstanding as of December 31, 2016, 2015 and 2014.

Convertible Preferred Stock Warrants

Warrants to purchase preferred stock with intrinsic value issued to HBM Healthcare Investments (Cayman) Ltd., Omega Fund III, L.P., and K/S Danish BioVenture, all beneficial owners of more than 5% of the Company's common stock, were exchanged for 9,614 warrants to purchase common stock in connection with the Merger. These 9,614 warrants to purchase common stock have an exercise price of $0.15 per share and will, if not exercised, expire in 2021. A further 5,120 warrants to purchase common stock with an exercise price of $73.66 per share expired in April 2016. As of December 31, 2013, the Company had 2,243 warrants to purchase Series H Convertible Preferred Stock outstanding with a weighted-average exercise price of $356.59 each and aggregate fair value of approximately $3,000.

14. Fair Value Measurements

Financial instruments, including cash, restricted cash, accounts receivable, accounts payable, accrued expenses and the Intermezzo reserve are carried on the consolidated financial statements at amounts that approximate fair value. The fair value of the Company's long-term debt is determined using current applicable rates for similar instruments as of the balance sheet date. The carrying value of the long-term debt approximates its fair value as the interest rate is near current market rates. The fair value of the Company's long-term debt was determined using Level 3 inputs. Fair values are based on assumptions concerning the amount and timing of estimated future cash flows and assumed discount rates, reflecting varying degrees of perceived risk.

The following tables present information about the Company's financial assets and liabilities that have been measured at fair value as of December 31, 2016 and December 31, 2015, and indicate the fair value hierarchy of the valuation inputs utilized to

determine such fair value. In general, fair values determined by Level 1 inputs utilize quoted prices (unadjusted) in active markets for identical assets or liabilities. Fair values determined by Level 2 inputs utilize observable inputs other than Level 1 prices, such as quoted prices for similar assets or liabilities or other inputs that are observable market data. Fair values determined by Level 3 inputs utilize unobservable data points for the asset or liability, and include situations where there is little, if any, market activity for the asset or liability (in thousands):

Description	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	December 31, 2016
Assets:				
U.S. treasury securities	$ 62,556	$ —	$ —	$ 62,556
Government agencies	—	12,520	—	$ 12,520
Total Assets	$ 62,556	$ 12,520	$ —	$ 75,076
Liabilities:				
Contingent obligations	$ —	$ —	$ 655	$ 655
Total Liabilities	$ —	$ —	$ 655	$ 655

Description	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	December 31, 2015
Liabilities				
Contingent obligations	$ —	$ —	$ 1,000	$ 1,000
	$ —	$ —	$ 1,000	$ 1,000

Prior to the second anniversary of the Merger, contingent obligations represented the right for former Transcept stockholders to receive certain contingent amounts, in the future, which consisted of:

(i) one hundred percent of any royalty income received by the Company prior to October 30, 2016, pursuant to the United States License and Collaboration Agreement, dated July 31, 2009, as amended November 1, 2011, by and between Transcept and Purdue Pharmaceutical Products L.P.;

(ii) one hundred percent of any payments received by the Company pursuant to the termination of a License Agreement with SNBL which granted the Company an exclusive worldwide license to commercialize SNBL's proprietary nasal drug delivery technology for development of TO-2070, a proprietary nasal powder drug delivery system;

(iii) ninety percent of any cash proceeds from a sale or disposition of Intermezzo (less all fees and expenses incurred by the Company in connection with such sale or disposition following the closing date); provided such sale or disposition occurs prior to October 30, 2016;

(iv) the amount, if any, of the $3.0 million Intermezzo reserve deposited at closing which is remaining at October 30, 2016.

The contingent obligations to former Transcept stockholders as described above were recognized at fair value as of the acquisition date and subsequently remeasured through the second anniversary of the Merger. The change in fair value was recognized in our consolidated statements of operations. Through the third quarter of 2016, the fair value of the contingent obligations to former Transcept stockholders was determined using probability-weighted scenario methodologies, employing cash-flow and sale proceeds income approaches with consideration to the potential timing of possible payments to former Transcept stockholders.

On October 28, 2016, in satisfaction of the Company's payment obligation of the proceeds of sale or disposition of the Intermezzo product rights to the former Transcept stockholders under the Merger Agreement, the Company executed the Royalty Sharing Agreement with the Special Committee. Under the Royalty Sharing Agreement, the Company agreed to pay to the former Transcept stockholders fifty percent of all royalty income received by the Company pursuant to the Purdue Collaboration Agreement, net of all costs, fees and expenses incurred by the Company in connection with the Purdue Collaboration Agreement, related agreements, the Intermezzo product and the administration of the royalty income to the Transcept stockholders. The Company determined that the Royalty Sharing Agreement represents a modification to the original contingent obligations established under the Merger Agreement in accordance with ASC 805, *Business Combinations.*

The significant unobservable inputs used in the fair value measurement of the contingent obligation to former Transcept stockholders with respect to the Intermezzo product rights as of December 31, 2016 were estimated future Intermezzo product revenues and associated royalties due the Company as well as the appropriate discount rate given consideration to the market and forecast risk involved. The results of this valuation yielded a decrease in the contingent obligation to former Transcept stockholders $0.2 million during the twelve months ended December 31, 2016. Significant increases (decreases) in any of those inputs would result in a substantially lower (higher) fair value measurement.

The contingent obligation associated with the TO-2070 license rights no longer exists as of December 31, 2016 since there were no payments received by the Company pursuant to the termination of the SNBL License Agreement prior to the second anniversary of the Merger. This yielded a decrease in the contingent obligation of $0.1 million during the twelve months ended December 31, 2016.

As of December 31, 2015, the fair value of the contingent obligations to former Transcept stockholders was determined using probability-weighted scenario methodologies, employing cash-flow and sale proceeds income approaches with consideration to the potential timing of possible payments to former Transcept stockholders. The outcome of an Intermezzo patent infringement trial triggered an evaluation of the carrying value of the Intermezzo product rights and related contingent liability in light of an expected decline in Intermezzo sales. As a result of the evaluation, the Company recorded a reduction in contingent obligations to former Transcept stockholders of $3.1 million during 2015. The Company appealed the outcome of the trial during the second quarter of 2015. Based on estimated probability of success of the appeal combined with fair value remeasurements, the Company recorded an additional decrease in contingent obligations to former Transcept stockholders of $0.2 million, for a total net decrease of $3.3 million during the year ended December 31, 2015.

In addition, during the fourth quarter of 2015, the Company was made aware of the unlikeliness of SNBL to find a potential partner to co-develop the TO-2070 license rights. As a result, the Company recorded a reduction in contingent obligations to former Transcept stockholders of $0.3 million during 2015.

The total reduction in contingent obligations to former Transcept shareholders was $3.6 million during the year ended December 31, 2015.

Material assumptions used to value contingent obligations to former Transcept stockholders with respect to Intermezzo product rights as of December 31, 2015 included:

- Probabilities associated with the various outcomes of the ongoing ANDA litigation and the potential sale of Intermezzo product rights;
- The forecasted Intermezzo product revenues and associated royalties due the Company, as well as the appropriate discount rate given consideration to the market and forecast risk involved; and
- The potential proceeds associated with, and timing of, the sale of the Company's Intermezzo product rights.

Material assumptions used to value contingent obligations to former Transcept stockholders with respect to the TO-2070 product rights include:

- Probabilities associated with SNBL licensing the TO-2070 license rights under the SNBL Termination Agreement; and
- Potential proceeds associated with, and timing of, the potential payments in accordance with the SNBL Termination Agreement.

The following table provides a roll forward of the fair value of contingent obligations categorized as Level 3 instruments for the years ended December 31, 2016 and 2015 (in thousands):

	Contingent liability—former Transcept stockholders
Balances at December 31, 2014	$ 4,560
Decrease in fair value	(3,560)
Balances at December 31, 2015	1,000
Decrease in fair value	(345)
Balances at December 31, 2016	$ 655

As of December 31, 2013, the fair value of the convertible preferred stock warrants was determined using the Black-Scholes option valuation model. The quantitative information associated with the fair value measurement of the Company's Level 3 inputs related to the convertible preferred stock warrants as of December 31, 2013 include the fair value per share of the underlying convertible preferred stock, the remaining contractual term of the warrants (2.21 years), risk-free interest rate (0.34%), expected dividend yield (0%) and expected volatility of the price of the underlying preferred stock (73%) The fair value of the derivative liability related to the nonconvertible and convertible notes was determined using a probability adjusted discounted cash flow model. The quantitative information associated with the fair value measurement of the Company's Level 3 inputs related to the derivative liability include the probabilities of an event requiring repurchase of the convertible notes, which range from 10.0% to 45.0%, the estimated time to repurchase, which ranges from six months to twelve months, and a discount rate of 20%.

The following table provides a roll-forward of the fair value of the convertible preferred stock warrants, derivative liability and continent liability to former Transcept stockholders categorized as Level 3 instruments for the year ended December 31, 2014 (in thousands):

	Convertible Preferred Stock Warrants	Derivative Liability
Balances at December 31, 2013	$ 3	$ 21,022
Unrealized loss	1	118
Fair value of 2014 warrant issuance	36	—
Conversion to equity	(40)	(21,140)
Balances at December 31, 2014	$ —	$ —

15. Stock-Based Compensation

Certain employees, officers, directors and consultants have been granted options and other equity instruments to purchase common shares under plans adopted in 1996, 2001, 2002, 2005, 2006, 2014 and 2015, or respectively, the 1996 Plan, the 2001 Plan, the 2002 Plan, the 2005 Plan, the 2006 Plan, the 2014 Plan, the 2015 Plan and the 2015 Inducement Plan. The 2001 Plan, 2002 Plan, and 2006 Plan were former Transcept plans that carried forward to the date of the Merger. The 1996 Plan, 2001 Plan, 2002 Plan, and 2005 Plan were cancelled at the effective time of the Merger. The 2006 Plan and 2014 Plan survived the Merger. Upon effectiveness of the 2015 Plan no further awards will be granted under the 2006 Plan and 2014 Plan.

Incentive stock and non-statutory stock options must be granted with exercise prices of not less than the fair market value of the common stock on the date of grant. Incentive stock options granted to a stockholder owning more than 10% of voting stock of the Company must have an exercise price of not less than 110% of the fair market value of the common stock on the date of grant. The Company determined the fair market value of common stock until the Company became publicly traded. Stock options are generally granted with terms of up to ten years and vest over a period of one to four years.

2006 Plan

The 2006 Plan provided for the grant of incentive stock options, non-statutory stock options, restricted stock, performance share awards, performance stock units, dividend equivalents, restricted stock units, stock payments, deferred stock, performance-based awards and stock appreciation rights. The outstanding employee stock options generally vested over four years, are exercisable over a period not to exceed the contractual term of ten years from the date the stock options are issued and are granted at prices equal to the fair market value of the Company's common stock on the grant date. The 2006 Plan was most recently amended and restated effective as of the date of the Company's 2010 Annual Stockholders' Meeting. Unless earlier terminated, the 2006 Plan will terminate on June 2, 2020.

Stock option exercises and restricted stock units are settled with newly issued common stock from the 2006 Plan's previously authorized and available pool of shares. A total of 200,206 shares of common stock was authorized for issuance pursuant to the 2006 Plan at the time of its most recent amendment and restatement in 2010, plus the number of shares of the Company's common stock available for issuance under the 2001 Plan that were not subject to outstanding options, as of the effective date of such amendment and restatement of the 2006 Plan (including shares that are subject to stock options outstanding under s 2001 Plan that expired, were cancelled or otherwise terminated unexercised, or shares that otherwise would have reverted to the share reserve of the 2001 Plan following such effective date). The number of shares of common stock reserved for issuance under the 2006 Plan increased automatically on the first day of each fiscal year by a number of shares equal to the least of: (i) 5.0% of shares of the Company's common stock outstanding on such date; (ii) 125,000 shares; or (iii) a smaller number determined by the Company's Board of Directors. This provision resulted in an additional 125,000, and 125,000, and of the Company's common stock becoming available for issuance on January 1, 2015 and January 1, 2014.

During the year ended December 31, 2015, prior to the effectiveness of the 2015 Plan, the Company's Board of Directors granted 102,000 restricted stock units to executives and employees of the Company and 397,719 stock options to directors, officers, employees and consultants under the 2006 Plan, with vesting provisions ranging from one to four years. As of December 31, 2016, no additional shares remained available for issuance the 2006 Plan. However, 15,000 restricted stock units and 25,708 stock options granted under the 2006 Equity Incentive Plan were cancelled or forfeited during the year ended December 31, 2016 and the shares underlying such awards became available for grant under the 2015 Plan.

2014 Plan

The 2014 Plan provided for the grant of incentive and non-statutory stock options, stock appreciation rights, restricted stock awards, restricted stock unit awards and other stock awards to employees, officers, directors, and consultants of the Company. Under the 2014 Plan, 67,500 shares of common stock were initially approved for grant. 67,500 shares of fully-vested restricted common stock were granted pursuant to the 2014 Plan to current and former employees and directors of the Company in June 2014. Attendant compensation expense of $0.3 million calculated with reference to the then fair market value of the Company's common stock determined in good faith by the Company's Board of Directors was recorded in connection with the June 2014 grant.

Also in June 2014, the Board of Directors approved an increase in the shares available for grant under the 2014 Plan to 875,531 shares from the 67,500 shares and granted the resulting 808,031 shares that became available for issuance under the 2014 Plan as options to purchase common stock to certain employees in June 2014. The common stock grants and stock option exercises from the 2014 Plan are settled with newly issued common stock from the 2014 Plan's previously authorized and available pool of shares.

Certain of the options to purchase common stock issued in June 2014 were subsequently modified in 2014 in connection with the termination of the employment of employees holding such options to provide for, among other changes, accelerated vesting terms.

Further, in February 2015 the Company's Board of Directors modified the vesting terms of eight grants made to four executives of the Company aggregating 483,114 stock options previously granted under the 2014 Plan from strictly time-based vesting to include certain performance-based vesting terms associated with completion of data lock in the Company's Phase 3 clinical trials of IV-to-oral omadacycline for the treatment of ABSSSI and CABP. The Company recognizes compensation cost for awards with performance conditions if and when it concludes that it is probable that the performance condition will be achieved over the requisite service period. The Phase 3 ABSSSI IV-to-oral study data lock occurred in June 2016. This resulted in the vesting of 212,516 stock options. Since the Company believes it is more likely than not that data lock will be reached on the Phase 3 CABP IV-to-oral study, the sum of the incremental compensation cost and any remaining unrecognized compensation cost for the original award on the modification date is being recognized, on a prospective basis, through the projected completion of data lock on the study.

During the year ended December 31, 2015, prior to the effectiveness of the 2015 Plan, the Company's Board of Directors granted 24,000 stock options to directors, officers, employees and consultants to the 2014 Plan with time vesting provisions ranging from one to four years. As of December 31, 2016, no additional shares remained available for issuance the 2014 Plan.

2015 Plans

The Company's Board of Directors adopted a 2015 Inducement Plan in accordance with NASDAQ Rule 5635(c)(4), reserving 360,000 shares of common stock solely for the grant of inducement stock options to new employees, and granting 353,500 stock options under the plan to executives and employees of the Company under the 2015 Inducement Plan with time vesting provisions ranging from one to four years.

The Company has not made any additional grants under the 2015 Inducement Plan since December 31, 2015. However, 66,667

stock options granted under the 2015 Inducement Plan were cancelled during the year ended December 31, 2016. Although the Company does not currently anticipate the issuance of additional stock options under the 2015 Inducement Plan, 73,167 shares remain available for grant under that plan, as well as any shares underlying outstanding options that may become available for grant pursuant to the plan's terms. It is therefore possible that the Company may, based on the business and recruiting needs of the Company, issue additional stock options under the 2015 Inducement Plan.

The Company's Board of Directors also adopted the 2015 Plan, which was approved by Company stockholders at the Annual Meeting held on June 9, 2015, reserving 1,200,000 shares of common stock for the grant of incentive stock options, non-statutory stock options, stock appreciation rights, restricted stock awards, restricted stock unit awards, performance stock awards, performance cash awards and other stock awards to directors, officers, employees and consultants. The 2015 Plan is intended to be the successor to and continuation of the 2006 Plan and the 2014 Plan, or collectively, the Prior Plans. When the 2015 Plan became effective, no additional stock awards were granted under the Prior Plans, although all outstanding stock awards granted under the Prior Plans will continue to be subject to the terms and conditions as set forth in the agreements evidencing such stock awards and the terms of the Prior Plans.

The number of shares available for issuance under the 2015 Plan was initially 1,200,000, plus the number of shares that again become available for grant as a result of forfeited or terminated awards or shares withheld in satisfaction of the exercise price of withholding obligations associated with awards under the Prior Plans, not to exceed 2,000,000 shares. 1,167,931 and 880,430 shares of common stock were automatically added to the shares authorized for issuance under the 2015 Plan on January 1, 2017 and January 1, 2016, respectively, pursuant to a "Share Reserve" provision contained in the 2015 Plan. The Share Reserve will automatically increase on January 1st of each year, for the period commencing on (and including) January 1, 2016 and ending on (and including) January 1, 2025, in an amount equal to 5% of the total number of shares of common stock outstanding on December 31st of the preceding calendar year. Notwithstanding the foregoing, the Board of Directors of the Company may act prior to January 1st of a given year to provide that there will be no January 1st increase in the Share Reserve for such year or that the increase in the Share Reserve for such year will be a lesser number of shares of common stock than would otherwise occur.

During the year ended December 31, 2016, the Company's Board of Directors granted 236,000 restricted stock units to executives and employees of the Company and 723,500 stock options to directors, officers, employees and consultants to the Company under the 2015 Plan with time vesting provisions ranging from one to four years. 42,500 restricted stock units and 90,716 stock options granted under the 2015 Plan were cancelled or forfeited during the year ended December 31, 2016.

Total shares available for future issuance under the 2015 Plan are 337,646 shares as of December 31, 2016.

A summary of stock option activity and related information through December 31, 2016 follows:

	Number of Shares	Weighted Average Exercise Price	Weighted–Average Remaining Contractual Term (in Years)	Aggregate Intrinsic Value
Outstanding				
Balances at December 31, 2015	2,242,890	$ 17.91	9.10	$ 10,692
Granted	723,500	14.27		
Exercised	(2,508)	4.30		
Cancelled or forfeited	(183,091)	23.18		
Balances at December 31, 2016	2,780,791	$ 16.63	8.27	$ 8,809
Exercisable				
December 31, 2016	1,157,002	$ 16.82	7.96	$ 4,160
Vested and expected to vest				
December 31, 2016	2,637,577	$ 16.56	8.25	$ 8,574

The aggregate intrinsic value is calculated as the difference between the exercise price of the underlying options and the fair market value of the common stock for the options that were in the money at December 31, 2016 and 2015.

During the years ended December 31, 2016, 2015 and 2014, the Company granted stock options to purchase an aggregate of 723,500 shares, 1,522,269 shares and 808,027 shares of its common stock, under the equity plans described above, respectively, with weighted-average grant date fair values of options granted of $14.27, $13.45 and $2.71, respectively.

The total intrinsic value of stock options exercised was $0, $1.4 million and $0 for the years ended December 31, 2016, 2015 and 2014, respectively.

Restricted Stock Units

The following is a summary of restricted stock unit activity for the year ended December 31, 2016:

	Number of Shares	Weighted Average Grant Date Fair Value per Share
Unvested balance at December 31, 2015	275,500	$ 24.43
Granted	236,000	$ 14.07
Forfeited	(57,500)	$ 19.45
Unvested balance at December 31, 2016	454,000	$ 19.67

During the year ended December 31, 2016 the Company granted 236,000 restricted stock units with a weighted-average grant date fair value per share of $14.07. The restricted stock units were granted with a three-year time vesting schedule. During the year ended December 31, 2015 the Company granted 275,500 restricted stock units with a weighted-average grant date fair value per share of $24.43. The Company did not grant any restricted stock units during the years ended December 31, 2014. As of December 31, 2016, no restricted stock units have vested.

Stock-Based Compensation Expense

For stock options issued to employees and members of the Board of Directors, the Company estimates the grant date fair value of each option using the Black-Scholes option-pricing model. The use of the Black-Scholes option-pricing model requires management to make assumptions with respect to the expected term of the option, the expected volatility of the common stock consistent with the expected life of the option, risk-free interest rates and expected dividend yields of the common stock.

The relevant data used to determine the value of the stock option grants is as follows:

	Year Ended December 31,		
	2016	2015	2014
Volatility	73.6%	60.2%	72.0%
Weighted average risk-free interest rate	1.4%	1.7%	1.9%
Expected dividend yield	0.0%	0.0%	0.0%
Expected life of options (in years)	5.8	6.0	5.8

For all grants, the amount of stock-based compensation expense recognized has been adjusted for estimated forfeitures of awards for which the requisite service is not expected to be provided. Estimated forfeiture rates are developed based on the Company's analysis of historical forfeiture data.

The Company recognizes the associated compensation expense over the vesting periods of the awards, net of estimated forfeitures. The following table presents stock-based compensation expense included in the Company's consolidated statements of operations (in thousands):

	Year Ended December 31,		
	2016	2015	2014
Research and development expense	$ 3,262	$ 1,233	$ 288
General and administrative expense	7,530	3,829	418
Total stock-based compensation expense	$ 10,792	$ 5,062	$ 706

Total unrecognized stock-based compensation expense for all stock-based awards was $17.2 million at December 31, 2016. This amount will be recognized over a weighted-average period of 2.13 years.

Employee Stock Purchase Plan

The Company's Employee Stock Purchase Plan adopted in 2009, or the ESPP, is designed to allow eligible employees of the Company to purchase shares of common stock through periodic payroll deductions and during specified offering periods under the plan. The price of common stock purchased under the ESPP is equal to 85% of the lower of the fair market value of the common stock on the commencement date of each offering period or the specified purchase date. As of December 31, 2016 and 2015, 36,539 shares were available for issuance under the ESPP. Since the Merger, the Company has not made the ESPP available to employees.

Reserved Shares

At December 31, 2016, the Company has reserved shares of common stock for future issuance as follows:

	Number of Shares
Equity plans:	
Subject to outstanding options and restricted shares	3,234,791
Available for future grants	451,521
Warrants	74,454
Employee stock purchase plan	36,539
Total	3,797,305

16. Long-Term Debt

On September 30, 2015, the Company entered into the Loan Agreement with Hercules and certain other lenders, and Hercules Technology Growth Capital, Inc. (as agent). Under the Loan Agreement, Hercules provided the Company with access to term loans with an aggregate principal amount of up to $40.0 million, or collectively, the Term Loan. The Company initially drew a principal amount of $20.0 million, which was funded on September 30, 2015. The remaining $20.0 million under the Loan Agreement was available to be drawn at the Company's option in minimum increments of $10.0 million through December 31, 2016, or the Draw Period. The Term Loan was repayable in monthly installments commencing on April 1, 2018 through maturity on September 1, 2020. The interest rate was equal to the greater of (i) 8.5%, or (ii) the sum of 8.5%, plus the "prime rate" as reported in The Wall Street Journal minus 5.75% per annum. An end of term charge equal to 4.5% of the issued principal balance of the Term Loan was payable at maturity, including in the event of any prepayment, and was being accrued as interest expense over the term of the loan using the effective interest method. Borrowings under the Loan Agreement were collateralized by substantially all of the assets of the Company.

Upon an Event of Default, an additional 5.0% interest would be applied and Hercules may, at its option, accelerate and demand payment of all or any part of the loan together with the prepayment and end of term charges. An Event of Default is defined in the Loan Agreement as (i) failure to make required payments; (ii) failure to adhere to financial, operating and reporting loan covenants; (iii) an event or development occurs that would be reasonably expected to have a material adverse effect; (iv) false representations in the Loan Agreement; (v) insolvency, as described in the Loan Agreement; (vi) levy or attachments on any of the Company's assets; and (vii) default of any other agreement or subordinated debt greater than $1.0 million. In the event of insolvency, this acceleration and declaration would be automatic. In addition, in connection with the Loan Agreement, the Company agreed to provide Hercules with a contingent security interest in the Company's bank accounts. The Company's control of its bank accounts is not adversely affected unless Hercules elects to obtain unilateral control of the Company's bank accounts by declaring that an Event of Default has occurred. The principal of the Term Loan, which was not due within 12 months of December 31, 2016, has been classified as long-term as the Company determined that a material adverse effect resulting in Hercules exercising its rights under the subjective acceleration clause is remote.

Subject to certain terms, pursuant to the Loan Agreement, Hercules was also granted the right to participate in an amount of up to $2.0 million in subsequent sales and issuances of the Company's equity securities to one or more investors for cash for financing purposes in an offering that is broadly marketed to multiple investors and at the same terms as the other investors. On September 30, 2015, Hercules Technology Growth Capital, Inc. entered into a Stock Purchase Agreement with the Company to purchase 44,782 shares of common stock resulting in proceeds to the Company of approximately $1.0 million. The excess of proceeds received by the Company over the fair value of the common stock issued was allocated as a reduction of the fees paid to Hercules in conjunction with obtaining the initial $20.0 million draw of the Term Loan.

Debt issuance costs of $511,000 were ratably allocated to the initial $20.0 million draw and the remaining unfunded $20.0 million. Debt issuance costs related to the initial $20.0 million draw were presented on the consolidated balance sheet as a direct deduction from the related debt liability rather than capitalized as an asset in accordance with the Company's early adoption of ASU No. 2015-03, *Interest - Imputation of Interest (Subtopic 835-30): Simplifying the Presentation of Debt Issuance Costs*, or ASU 2015-

03. Issuance costs related to the unfunded amount were capitalized as prepaid asset and were to be amortized ratably through the end of the Draw Period.

In connection with the Loan Agreement, the Company issued to each one of Hercules Technology II, L.P. and Hercules Technology III, L.P., a warrant to purchase 16,346 shares of the Company's common stock (32,692 shares of common stock in total) at an exercise price of $24.47 per share. The Hercules Warrants' total relative fair value of $288,000 at September 30, 2015 was determined using a Black-Scholes option-pricing model. The relative fair value of the Hercules Warrants was included as a discount to the Term Loan and also as a component of additional paid-in capital. See Note 12, *Common Stock*, for further description of the Hercules Warrants.

In addition to the Hercules Warrants, the Company paid fees to Hercules in conjunction with obtaining the Term Loan. The Hercules Warrants fair value and fees paid to Hercules, an aggregate of $572,000, were ratably allocated to the initial $20.0 million draw and the remaining unfunded $20.0 million. The $208,000 of costs allocated to the initial $20.0 million draw were recorded as a debt discount and are being amortized as additional interest expense over the term of the loan using the effective interest method. The $364,000 of costs allocated to the unfunded $20.0 million was recorded as prepaid expenses and were being amortized ratably through the end of the Draw Period. In the event the Company exercised its option to borrow additional funds, the remaining unamortized prepaid asset balance related would be reclassified and recorded as debt discount based upon a ratable allocation of the amount drawn compared to the remaining unfunded amount available to the Company and would amortize over the remaining life of the term loan using the effective interest method.

On December 12, 2016, the Company entered into the Loan Agreement Amendment to the Loan Agreement extended the date on which the Company must begin making amortization payments under the Loan Agreement from April 1, 2018 to January 1, 2019, or the Amortization Date. Upon commencement of the Amortization Date, the Company will make amortization payments based upon an amortization schedule equal to thirty consecutive months, with the balance of outstanding loans due on the original maturity date of the Loan Agreement. The Loan Agreement Amendment also increased the amount that the Company may borrow by $10.0 million, from up to $40.0 million to up to $50.0 million in multiple tranches. The additional $10.0 million tranche, or the Additional Tranche, is available at the Company's option through September 15, 2017 but conditioned upon the Company completing either a second Phase 3 clinical evaluation of omadacycline in patients with ABSSSI or in patients with CABP that is supportive of the Company making a NDA filing with the FDA. If drawn, the Additional Tranche shall bear interest and have the same maturity as all other loans outstanding under the Loan Agreement. The Company borrowed the first tranche of $20.0 million upon the closing of the Loan Agreement on September 30, 2015 and, concurrently with the closing of the Loan Agreement Amendment, the Company borrowed an additional $20.0 million under the Loan Agreement. In connection with the Loan Agreement Amendment, the Company paid Hercules a $0.4 million amendment fee.

The remaining unamortized prepaid asset balance, as of the date of the Loan Agreement Amendment, of $0.1 million was reclassified and recorded as debt discount. The $0.1 million is being amortized over the remaining life of the term loan using the effective interest method.

The end of term charge, discussed above, is equal to 4.5% of the issued principal balance of the Loan Agreement Amendment, and is payable at maturity, including in the event of any prepayment, and is being accrued as interest expense over the term of the loan using the effective interest method. Borrowings under the Loan Agreement Amendment are still collateralized by substantially all of the assets of the Company. If the Company repays all or a portion of the term loans prior to maturity, in addition to the end of term charge, the Company would pay Hercules a prepayment fee as follows: (i) 2.0% of the then outstanding principal amount if the prepayment occurs prior to January 1, 2019 or (ii) no fee if the prepayment occurs on or after January 1, 2019.

In connection with the Loan Agreement Amendment, the Company issued the Loan Amendment Warrants to each of Hercules Technology II, L.P. and Hercules Technology III, L.P. which together are exercisable for an aggregate of 37,148 shares of the Company's common stock and each carry an exercise price of $13.46 per share, or the "Loan Amendment Warrants. Additionally, upon the Additional Tranche funding date, the Company will issue an additional warrant to each of Hercules Technology II, L.P. and Hercules Technology III, L.P. which together will be exercisable for an aggregate number of shares equal to $125,000 divided by the arithmetic mean of the Company's daily closing price per share for the ten trading days preceding the Additional Tranche funding date and each carry an exercise price equal to the arithmetic mean of the Company's daily closing price per share for the ten trading days preceding the Additional Tranche funding date. Each Warrant may be exercised on a cashless basis. The Warrants are exercisable for a term beginning on the date of issuance and ending on the earlier to occur of five years from the date of issuance or the consummation of certain acquisitions of the Company as set forth in the Warrants. The number of shares for which the Warrants are exercisable and the associated exercise price are subject to certain proportional adjustments as set forth in the Warrants.

The modified terms under the Loan Agreement Amendment were not considered substantially different as compared to the terms of the Loan Agreement immediately prior to the Loan Agreement Amendment, pursuant to ASC 470-50, *Modification and*

Extinguishment. As such, the Loan Agreement Amendment was accounted for as a debt modification. The $0.4 million amendment fee paid to Hercules was recorded as debt discount and will be amortized as part of the effective yield. In addition, the unamortized discount on the original loan agreement will be amortized as an adjustment of interest expense over the remaining term of the modified debt using an updated effective interest rate. All costs incurred with third parties were expensed as incurred.

Debt issuance costs are presented on the consolidated balance sheet as a direct deduction from the related debt liability rather than capitalized as an asset in accordance with ASU No. 2015-03, *Interest - Imputation of Interest (Subtopic 835-30): Simplifying the Presentation of Debt Issuance Costs*, or ASU 2015-03.

As of December 31, 2016 and 2015, the Company has recorded, on its consolidated balance sheet, a long-term debt obligation of $39.0 million, net of debt discount of $1.1 million and $19.6 million, net of debt discount of $0.4 million, and prepaid expenses of $0.5 million, respectively.

Future principal payments, which exclude the 4.5% end of term charge, in connection with the Loan Agreement, as of December 31, 2016 are as follows (in thousands):

2017	$ —
2018	—
2019	14,952
2020	25,048
2021 and thereafter	—
Total	$ 40,000

17. Income Taxes

(Loss) income before income taxes consists of the following:

(in thousands)	Year Ended December 31, 2016	2015	2014
United States	$ (98,465)	$ (70,860)	$ (19,762)
Foreign	(13,171)	—	—
Total	$ (111,636)	$ (70,860)	$ (19,762)

There is no provision related to the Company's federal, state or foreign tax obligations.

There is no provision for income taxes in the United States because the Company has historically incurred net operating losses and maintains a full valuation allowance against its net deferred tax assets. The reported amount of income tax expense for the years differs from the amount that would result from applying domestic federal statutory tax rates to pretax losses primarily because of changes in valuation allowance.

A reconciliation of the Company's effective tax rate to the statutory federal income tax rate is as follows:

	Year Ended December 31, 2016	2015	2014
Federal statutory rate	35.00%	35.00%	35.00%
Change in valuation allowance	(37.31)	(46.61)	(18.84)
Permanent differences	0.17	1.67	(19.89)
State taxes, net of federal benefits	4.61	6.13	2.23
Other	(2.47)	3.81	1.50
	0.00%	0.00%	0.00%

Significant components of the Company's net deferred tax assets at December 31, 2016 and 2015 are as follows:

(in thousands)	Year Ended December 31, 2016	2015
Non-current deferred tax assets		
Net operating losses	$ 83,480	$ 57,190
Accrued expenses	2,774	5,413
Capitalized research and development	29,882	18,929
Tax credit carryforwards	9,478	9,174
Other	100	—
Stock compensation and other	6,425	2,190
Total non-current deferred tax assets	132,139	92,896
Non-current deferred tax liabilities		
Intangible assets	(408)	(551)
Fixed assets	—	(10)
Total non-current deferred tax liabilities	(408)	(561)
Net non-current deferred tax asset	131,731	92,335
Less: valuation allowance	(131,731)	(92,335)
Net deferred tax asset	$ —	$ —

As of December 31, 2016, the Company had federal and state net operating loss carryforwards of $223.4 million and $111.4 million, respectively, which begin to expire in 2018, respectively. Of these amounts, approximately $1.3 million related to stock-based compensation tax deductions in excess of book compensation expense, additional paid-in capital net operating losses, or APIC NOLs, that will be credited to additional paid-in capital when such deductions reduce taxes payable as determined on a "with-and-without" approach. APIC NOLs will reduce federal and state taxes payable if realized in future periods, but the net operating loss carryforwards relating to such benefits are not included in the table above.

As of December 31, 2016, the Company had federal and state research and development tax credits carryforwards of $7.2 million and $3.5 million, respectively, which began to expire in 2018.

Management of the Company has evaluated the positive and negative evidence bearing upon the realizability of its deferred tax assets, which are comprised principally of net operating loss carryforwards and research and development credits. Under the applicable accounting standards, management has considered the Company's history of losses and concluded that it is more likely than not that the Company will not recognize the benefits of federal and state deferred tax assets. Accordingly, a full valuation allowance of $131.7 million and $92.3 million, respectively, was established as of December 31, 2016 and 2015. A change in the Company's valuation allowance was recorded in 2016, in the amount of $39.4 million.

Utilization of the net operating loss and research and development credit carryforwards may be subject to a substantial annual limitation under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, due to ownership change limitations that have occurred previously or that could occur in the future. These ownership changes may limit the amount of net operating loss and research and development credit carryforwards that can be utilized annually to offset future taxable income and tax, respectively.

During 2016, the Company performed a formal study to determine if any of its remaining NOL and credit attributes might be further limited due to the ownership change rules of Section 382 or Section 383 of the Internal Revenue Code of 1986, as amended. As a result of that study, the Company has identified certain NOLs that might expire unused. The Company has established a full valuation allowance against these attributes.

The Company follows the provisions of ASC 740-10, *Accounting for Uncertainty in Income Taxes—an interpretation of ASC 740*, which requires it to determine whether a tax position of the Company is more likely than not to be sustained upon examination, including resolution of any related appeals of litigation processes, based on the technical merits of the position. For tax positions meeting the more likely than not threshold, the tax amount recognized in the financial statements is reduced by the largest benefit that has a greater than fifty percent likelihood of being realized upon the ultimate settlement with the relevant taxing authority.

The Company is in the process of conducting a study of its research and development credit carryforwards. This study may result in an adjustment to the Company's research and development credit carryforwards; however until the study is completed and any adjustment is known, no amounts are being presented as an uncertain tax position. A full valuation allowance has been provided against the Company's research and development credits, and if an adjustment is required, this adjustment would be offset by an adjustment to the valuation allowance. Thus, there would be no impact to the consolidated balance sheets or statements of operations if an adjustment were required.

The Company files tax returns as prescribed by the tax laws of the jurisdictions in which it operates. In the normal course of business, the Company is subject to examination by federal and state jurisdictions, where applicable. The earliest tax years that remain subject to examination by jurisdiction is 2013 for both federal and Massachusetts. However, to the extent the Company utilizes net operating losses from years prior to 2013, the statute remains open to the extent of the net operating losses or other credits are utilized. The Company's policy is to record interest and penalties related to income taxes as part of the tax provision. There was no interest or penalties pertaining to uncertain tax positions in 2016 or 2015.

18. Commitments and Contingencies

Leases

The Company leases its Boston, Massachusetts and King of Prussia, Pennsylvania office spaces under non-cancelable operating leases expiring in 2021 and 2024, respectively.

The Company entered into the original King of Prussia and Boston leases in January 2015 and April 2015, respectively. The lease terms under the original agreements were for six and four years, respectively. Each agreement had one renewal option for an extended term. The King of Prussia and Boston lease terms under the original agreements began in June 2015 and July 2015, respectively.

The Company executed an amended lease agreement on its Boston office space in July 2016. The amended lease agreement adds 4,153 rentable square feet of office space and extends the original lease term by two years. The total revised lease commitment of $3.4 million is over a remaining five-year lease term. In accordance with the amended lease agreement, the Company paid a security deposit of $0.1 million. The Company is required to make additional payments under the facility operating leases for taxes, insurance, and other operating expenses incurred during the lease period. Because the Company is involved in the construction project, including having responsibility to pay for a portion of the costs of finish work and mechanical, electrical, and plumbing elements of the building, among other items, the Company is deemed for accounting purposes to be the owner of the office space during the construction period. In addition, the lease provided an incentive from the landlord of up to $0.2 million in tenant improvements. The Company capitalized all leasehold improvements as fixed assets and recorded the landlord incentive as a receivable, included within "other receivables" on the Company's consolidated balance sheet, until payment is received. Accordingly, the Company also recorded a

related financing obligation in "other long-term liabilities" on the Company's consolidated balance sheet. These amounts will be treated as a reduction to rent expense over the lease term. Subsequent to the amended lease agreement, the Company will record monthly rent expense of approximately $54,000 for the Boston office space.

The Company executed an amended lease agreement on its King of Prussia office space in October 2016. The amended lease agreement is for 19,708 rentable square feet of office space, for a total commitment of $3.5 million. The total lease commitment is over a seven-year and seven-month lease term. The lease contains rent escalation and a partial rent abatement period, which will be accounted for as rent expense under the straight-line method. The Company is required to make additional payments under the facility operating leases for taxes, insurance, and other operating expenses incurred during the operating lease period.

Deferred rent is included in accounts payable and other accrued expenses in the consolidated balance sheet as of December 31, 2016 and 2015.

Rent expense, exclusive of related taxes, insurance, and maintenance costs, for continuing operations totaled approximately $0.7 million, $0.3 million and $0.6 million for the years ended December 31, 2016, 2015 and 2014 respectively, and is reflected in operating expenses.

Future minimum operating lease obligations under non-cancelable leases with initial terms of more than one-year are as follows (in thousands):

	Minimum Lease Obligation
Years Ended December 31,	
2017	$ 823
2018	835
2019	826
2020	841
2021	594
2022 and thereafter	—
Total	$ 3,919

The $3.5 million obligation under the amended lease agreement on the King of Prussia space is not included within the above table as the Company does not control the space as of December 31, 2016. Included within the above table is the Company's current obligation at our King of Prussia office space.

Supply Agreements

Cipan

In November 2016, we entered into a manufacturing and services agreement with CIPAN – Companhia Industrial Produtora de Antibióticos, or CIPAN. The agreement provides the terms and conditions under which CIPAN will manufacture and supply to us increased quantities of minocycline starting material and crude omadacycline, or the CIPAN Products, for purification into omadacycline and, subsequently, for use in our products that contain omadacycline as the active pharmaceutical ingredient. Under this agreement, we are obligated to pay a CIPAN Product price in the high three-digit U.S. Dollar range per kilogram for minocycline starting material and in the four-digit or five-digit U.S. Dollar range per kilogram for crude omadacycline, based on the annual volume of crude omadacycline that we order, subject to adjustments as set forth in the agreement. CIPAN will also perform certain services related to development, technology transfer and manufacturing of the CIPAN Products as provided in one or more statements of work, which shall set forth the fees payable by us to CIPAN for such services.

Our agreement with CIPAN will remain in effect for a fixed initial term, after which the agreement will continue, with respect to each CIPAN Product, for successive renewal terms unless either we or CIPAN have given written notice of termination within a certain period prior to the expiration of either the initial or then-current renewal term. The agreement may also be terminated under certain other circumstances, including by either party due to a material uncured breach by the other party or the other party's insolvency.

Carbogen

In December 2016, we entered into an outsourcing agreement with CARBOGEN AMCIS AG, or Carbogen. The agreement provides for the terms and conditions under which Carbogen will manufacture and supply to us the active pharmaceutical ingredient for our omadacycline product in bulk quantities, or the Carbogen Product. Under this agreement, we are responsible for the cost and supply of crude omadacycline that Carbogen requires to manufacture the Carbogen Products and perform related services. We are obligated to initially pay Carbogen an amount in the low seven-digit U.S. Dollar range per batch of Carbogen Product that we order, depending on the size of the campaign, and the price may be adjusted in accordance with the terms of the agreement. We may also request that Carbogen perform certain services related to the Carbogen Product, for which we will pay reasonable compensation to Carbogen.

Our agreement with Carbogen will remain in effect for a fixed initial term and both parties are obligated to use diligent efforts to come to a subsequent long-term agreement to replace this agreement no later than the end of such initial term. If we have not executed a replacement agreement with Carbogen by such time, this agreement will automatically be extended for a fixed period of time. We may terminate this agreement by delivering notice of termination to Carbogen prior to the expiration of the initial or subsequent term. The agreement may also be terminated under certain other circumstances, including by either party due to a material uncured breach by the other party or the other party's insolvency.

Almac

In December 2016, we entered into a manufacturing and services agreement with Almac Pharma Services Limited, or Almac. The agreement provides for the terms and conditions under which Almac will manufacture, package and supply to us omadacycline oral solid dosage tablets in bulk form, or the Almac Products. Under this agreement, we are required to use commercially reasonable efforts to timely provide Almac with the active pharmaceutical ingredient needed to manufacture the Almac Products and perform related services. We are obligated to pay a supply price in the five-digit range in Great Britain Pounds per batch of the Almac Products, subject to adjustments as provided in the agreement. We will also negotiate with Almac, as part of each individual scope of work, the reasonable costs for the services to be performed for us by Almac.

Our agreement with Almac will remain in effect for a fixed initial term, after which the agreement will continue for successive renewal terms unless either we or Almac have given written notice of termination within a certain period prior to the expiration of the initial or then-current renewal term. The agreement may also be terminated under certain other circumstances, including by either party due to a material uncured breach of the other party or the other party's insolvency.

Litigation

The following pending litigation was assumed through the Merger.

Intermezzo Patent Litigation

In July 2012, the Company received notifications from three companies, Actavis Elizabeth LLC, or Actavis Elizabeth, Watson Laboratories, Inc.—Florida, or Watson, and Novel Laboratories, Inc., or Novel, in September 2012, from each of Par Pharmaceutical, Inc. and Par Formulations Private Ltd., together, the Par Entities, in February 2013 from Dr. Reddy's Laboratories, Inc. and Dr. Reddy's Laboratories, Ltd., together, Dr. Reddy's, and in July 2013 from TWi Pharmaceuticals, Inc., or Twi, stating that each has filed with the FDA an ANDA, that references Intermezzo. Refer to Item 3, "*Legal Proceedings"*, of the Company's Annual Report on Form 10-K for the year ended December 31, 2015, as filed with the SEC on March 9, 2016, for a full description of the history of this litigation.

The New Jersey District Court, held a consolidated trial between December 1, 2014 and December 15, 2014 involving Paratek, Purdue Pharma, and their patent infringement claims against Actavis Elizabeth, Novel, and Dr. Reddy's. The New Jersey District Court then received post-trial briefing and held a February 13, 2015 post-trial hearing. On March 27, 2015, the New Jersey District Court issued an order and accompanying opinion finding that: (a) the asserted claims of U.S. Patent Nos. 7,682,628, 8,242,131, and 8,252,809, are invalid as obvious; (b) Actavis Elizabeth, Novel, and Dr. Reddy's infringe the '131 patent; (c) Novel infringes the '628 patent; and (d) Novel and Dr. Reddy's infringe the '809 patent. On April 9, 2015, the New Jersey District Court entered final judgment consistent with the March 27, 2015 opinion and order referenced above. As a result of the New Jersey District Court's findings, the intangible assets representing Intermezzo product rights were impaired and the related contingent obligation was reduced in light of an expected decline in Intermezzo sales for the three months ended March 31, 2015.

The Company and Purdue Pharma jointly appealed the New Jersey District Court's final judgment as to the '131 patent to the United States Court of Appeals for the Federal Circuit on May 6, 2015. On January 8, 2016 the U.S. Court of Appeals affirmed the decision of the New Jersey District Court, and no opinion accompanied the judgment. On September 14, 2016, the defendants filed a warrant of satisfaction of judgment in the New Jersey District Court for the costs having been fully paid to defendants.

Patent Term Adjustment Suit

In January 2013, the Company filed suit in the Eastern District of Virginia against the United States Patent and Trademark Office, or the USPTO, seeking recalculation of the patent term adjustment of the '131 Patent. Purdue Pharma has agreed to bear the costs and expenses associated with this litigation. In June 2013, the judge granted a joint motion to stay the proceedings pending a remand to the USPTO, in which the USPTO is expected to reconsider its patent term adjustment award in light of decisions in a number of appeals to the Federal Circuit, including Novartis AG v. Lee 740 F.3d 593 (Fed. Cir. 2014), or the Novartis decision. Since having issued final rules implementing the Novartis decision, the USPTO has been working through the civil action cases and issuing remand decisions. The Company's case was on remand until the USPTO made its decision on the recalculation of the patent term adjustment. On September 28, 2016, the USPTO issued a decision that the patent term adjustment is 1,038 days, from which the '131 Patent expiration would be March 26, 2029.

Other Legal Proceedings

From time to time the Company is involved in legal proceedings arising in the ordinary course of business. The Company believes there is no other litigation pending that could have, individually, or in the aggregate, a material adverse effect on its results of operations or financial condition. The Company does not believe that any of the above matters will result in a liability that is probable or estimable at December 31, 2016.

19. 401(k) Savings Plan

The Company maintains a defined-contribution savings plan under Section 401(k) of the Internal Revenue Code, or the 401(k) Plan. The 401(k) Plan covers all employees who meet defined minimum age and service requirements, and allows participants to defer a portion of their annual compensation on a pretax basis. The Plan provides for matching contributions on a portion of participant contributions pursuant to the 401(k) Savings Plan's matching formula. All matching contributions and participant contributions vest immediately. Contributions totaled $0.3 million, $0.2 million and $0.1 million for the years ended December 31, 2016, 2015, and 2014, respectively, and have been recorded in the consolidated statements of operations.

20. Quarterly Results (Unaudited)

	Three Months Ended			
	March 31, 2016	June 30, 2016	September 30, 2016	December 31, 2016
	(in thousands, except per share data) (unaudited)			
Revenue	$ —	$ —	$ —	$ 29
Operating expenses	30,732	29,752	23,113	25,918
Loss from operations	(30,732)	(29,752)	(23,113)	(25,889)
Other expense, net	(539)	(531)	(515)	(565)
Net loss	$ (31,271)	$ (30,283)	$ (23,628)	$ (26,454)
Net loss per share - basic and diluted	$ (1.78)	$ (1.69)	$ (1.04)	$ (1.16)

	Three Months Ended			
	March 31, 2015	June 30, 2015	September 30, 2015	December 31, 2015
	(in thousands, except per share data) (unaudited)			
Operating expenses	$ 10,633	$ 15,679	$ 23,372	$ 20,369
Loss from operations	(10,633)	(15,679)	(23,372)	(20,369)
Other expense, net	—	(20)	(49)	(737)
Net loss	$ (10,633)	$ (15,699)	$ (23,421)	$ (21,106)
Net loss per share - basic and diluted	$ (0.74)	$ (0.96)	$ (1.33)	$ (1.20)

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

On May 13, 2016, we dismissed CohnReznick LLP as our independent registered public accounting firm. The Audit Committee approved the dismissal of CohnReznick LLP. The reports of CohnReznick LLP on our consolidated financial statements for the fiscal years ended December 31, 2015, 2014 and 2013, and on the effectiveness of the Company's internal control over financial reporting as of December 31, 2015 did not contain an adverse opinion or disclaimer of opinion, nor were they qualified or modified as to uncertainty, audit scope, or accounting principles. During the fiscal years ended December 31, 2015, 2014 and 2013, and the subsequent interim period through May 13, 2016 there were no: (1) disagreements, as defined in Item 304(a)(1)(iv) of Regulation S-K and the related instructions, with CohnReznick LLP on any matter of accounting principles or practices, financial statement disclosure, or auditing scope or procedures, which disagreement if not resolved to the satisfaction of CohnReznick LLP would have caused CohnReznick LLP to make reference thereto in its reports on the consolidated financial statements for such years, or (2) reportable events, as described in Item 304(a)(1)(v) of Regulation S-K.

We have furnished the foregoing disclosure to CohnReznick LLP and requested that it furnish us with a letter addressed to the SEC stating whether it agrees with the above statements, and if not, stating the respects with which it does not agree. A copy of the letter dated May 16, 2016 is filed as Exhibit 16.1 to our Current Report on Form 8-K filed on May 16, 2016.

Effective May 13, 2016, we engaged Ernst & Young LLP as our independent registered public accounting firm. The Board of Directors approved the engagement of Ernst & Young LLP. During the two most recent fiscal years ended prior to CohnReznick LLP's dismissal, December 31, 2015 and 2014, and through the subsequent interim period through May 13, 2016, we did not consult with Ernst & Young LLP, regarding either (i) the application of accounting principles to a specific transaction, completed or proposed, or the type of audit opinion that might be rendered on our financial statements, and neither a written report nor oral advice was provided to us that was an important factor considered in reaching a decision as to accounting, auditing or financial reporting issues; or (ii) any matter that was either the subject of a disagreement, as that term is defined in Regulation S-K 304(a)(1)(iv) and the related instructions to Regulation S-K 304, or a reportable event, as that term is defined in Regulation S-K 304(a)(1)(v).

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

As of December 31, 2016, management, with the participation of our Chief Executive Officer and Chief Financial Officer, performed an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as amended, or the Exchange Act. Our disclosure controls and procedures are designed to ensure that information required to be disclosed in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including the Chief Executive Officer and the Chief Financial Officer, to allow timely decisions regarding required disclosures. Any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objective. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, as of December 31, 2016, the design and operation of our disclosure controls and procedures were effective.

Internal Control Over Financial Reporting

(a) Management's Annual Report on Internal Control over Financial Reporting

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rule 13a-15(f) and 15d-15(f) of the Securities Exchange Act of 1934, as amended, or the Exchange Act. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policy or procedures may deteriorate. Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, management has conducted an evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2016 based upon the Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework). Based on this evaluation, management, including our Chief Executive Officer and Chief Financial Officer, has concluded that our internal control over financial reporting was effective as of December 31, 2016.

The effectiveness of our internal control over financial reporting as of December 31, 2016 has been audited by Ernst and Young LLP, our independent registered public accounting firm, as stated in their report which is included herein.

(b) Report of Independent Registered Public Accounting Firm on Internal Control over Financial Reporting

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Stockholders of
Paratek Pharmaceuticals, Inc.

We have audited Paratek Pharmaceuticals, Inc.'s internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). Paratek Pharmaceuticals, Inc.'s management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, Paratek Pharmaceuticals, Inc. maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheet of Paratek Pharmaceuticals, Inc. as of December 31, 2016, and the related consolidated statements of operations and comprehensive loss, convertible preferred stock and stockholders' equity, and cash flows for the year then ended of Paratek Pharmaceuticals, Inc. and our report dated March 1, 2017 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Boston, Massachusetts
March 1, 2017

(c) Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act) during the fiscal quarter ended December 31, 2016, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

PART III

The information required by Part III is omitted from this report because we will file a definitive proxy statement within 120 days after the end of our 2016 fiscal year pursuant to Regulation 14A for our 2017 Annual Meeting of Stockholders, or the 2017 Proxy Statement, and the information to be included in the 2016 Proxy Statement is incorporated herein by reference.

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item will be contained in the 2017 Proxy Statement and is hereby incorporated by reference.

Section 16(a) Beneficial Ownership Reporting Compliance

The information required by this item will be contained in the 2017 Proxy Statement and is hereby incorporated by reference.

Code of Business Conduct and Ethics

Our board of directors has adopted a code of business conduct and ethics. The code of business conduct applies to all of our employees, officers and directors. The full texts of our code of business conduct and ethics are posted on our website at http://www.paratekpharma.com under the Investor Relations section. We intend to disclose future amendments to our code of business conduct and ethics, or certain waivers of such provisions, at the same location on our website identified above and also in public filings. The inclusion of our website address in this report does not include or incorporate by reference the information on our website into this report.

Item 11. Executive Compensation

The information required by this item will be contained in the 2017 Proxy Statement and is hereby incorporated by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this item will be contained in the 2017 Proxy Statement and is hereby incorporated by reference.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this item will be contained in the 2017 Proxy Statement and is hereby incorporated by reference.

Item 14. Principal Accountant Fees and Services

The information required by this item will be contained in the 2017 Proxy Statement and is hereby incorporated by reference.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a)(1) Financial Statements

See Index to Financial Statements under Item 8 of Part II of this Annual Report on Form 10-K, which listing is incorporated herein by reference.

(a)(2) Financial Statement Schedules

Financial statement schedules are omitted because they are not applicable or are not required or the information required to be set forth therein is included in the Financial Statements or notes thereto.

(a)(3) Exhibits

The exhibits listed in the Exhibit Index at the end of this Annual Report on Form 10-K are filed or incorporated by reference as part of this report and such listing is incorporated herein by reference.

(b) Exhibits

See Exhibits listed under Item 15(a)(3) above.

(c) Financial Statement Schedules

Financial statement schedules are omitted because they are not applicable or are not required or the information required to be set forth therein is included in the Financial Statements or notes thereto.

Item 16. Form 10-K Summary

Not applicable.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Boston, State of Massachusetts, on the 1st day of March, 2017.

Paratek Pharmaceuticals, Inc.

By: /s/ Michael F. Bigham
Michael F. Bigham
Chairman and Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints each of William M. Haskel and Douglas W. Pagán his true and lawful attorney-in-fact and agent, with full power of substitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments to this annual report on Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or his substitutes or substitute, may lawfully do or cause to be done by virtue hereof.

IN WITNESS WHEREOF, each of the undersigned has executed this Power of Attorney as of the date indicated opposite his name.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Michael F. Bigham **Michael F. Bigham**	Chairman of the Board of Directors and Chief Executive Officer *(Principal Executive Officer)*	March 1, 2017
/s/ Douglas W. Pagán **Douglas W. Pagán**	Chief Financial Officer *(Principal Financial and Accounting Officer)*	March 1, 2017
/s/ Evan Loh, M.D. **Evan Loh, M.D.**	President, Chief Operating Officer, Chief Medical Officer and Director	March 1, 2017
/s/ Thomas J. Dietz, Ph.D. **Thomas J. Dietz, Ph.D.**	Director	March 1, 2017
/s/ Timothy R. Franson, M.D. **Timothy R. Franson, M.D.**	Director	March 1, 2017
/s/ Richard J. Lim **Richard J. Lim**	Director	March 1, 2017
/s/ Kristine Peterson **Kristine Peterson**	Director	March 1, 2017
/s/ Robert S. Radie **Robert S. Radie**	Director	March 1, 2017
/s/ Jeffrey Stein, Ph.D. **Jeffrey Stein, Ph.D.**	Director	March 1, 2017

EXHIBIT INDEX

Exhibit No.	Exhibit Description	Incorporated by Reference			
		Schedule/ Form	File Number	Exhibit	Filing Date
1.1*	Controlled Equity Offering[SM] Sales Agreement between Paratek Pharmaceuticals, Inc. and Cantor Fitzgerald & Co., dated February 28, 2017.				
2.1	Agreement and Plan of Merger and Reorganization by and among Transcept Pharmaceuticals, Inc., Tigris Merger Sub, Inc., Tigris Acquisition Sub, LLC and Paratek Pharmaceuticals, Inc. dated as of June 30, 2014.	Form 8-K	001-36066	2.1	July 1, 2014
3.1	Amended and Restated Certificate of Incorporation.	Form 8-K	001-36066	3.1	October 31, 2014
3.2	Certificate of Amendment of Restated Certificate of Incorporation.	Form 8-K	001-36066	3.2	October 31, 2014
3.3	Amended and Restated Bylaws.	Form 8-K	001-36066	3.1	April 16, 2015
4.1	Specimen Common Stock Certificate.	Form S-3	333-201458	4.2	January 12, 2015
4.2	Form of Warrant Agreement issued to Hercules Technology II, L.P. and Hercules Technology III, L.P.	Form 8-K	001-36066	4.1	October 5, 2015
4.3	Form of Warrant Agreement issued to Hercules Technology II, L.P. and Hercules Technology III, L.P.	Form 8-K	001-36066	4.1	December 13, 2016
4.4	Warrant, dated as of April 7, 2014 issued to HBM Healthcare Investments (Cayman) Ltd.	Form 10-K	001-36066	10.22	April 2, 2015
4.5	Warrant, dated as of April 18, 2014 issued to K/S Danish BioVenture.	Form 10-K	001-36066	10.23	April 2, 2015
4.6	Warrant, dated as of April 7, 2014 issued to Omega Fund III, L.P.	Form 10-K	001-36066	10.24	April 2, 2015
5.1*	Opinion of Ropes & Gray LLP				
10.1A	2006 Incentive Award Plan, as amended and restated.	Form 10-K	001-36066	10.1A	March 9, 2016
10.1B+	Form of Stock Option Grant Notice and Stock Option Agreement under 2006 Incentive Award Plan.	Form S-8	333-172041	99.2	February 3, 2011
10.2+	Form of Restricted Stock Unit Award Grant Notice and Form of Restricted Stock Unit Award Agreement under the 2006 Incentive Award Plan, as amended.	Form 8-K	001-36066	10.1	February 10, 2015
10.3+	2009 Employee Stock Purchase Plan.	Form 8-K	000-51967	10.1	June 9, 2009
10.4A+	2014 Equity Incentive Plan, as amended.	Form S-8	333-201204	4.1	December 22, 2014
10.4B+	Form of Option Agreement under the 2014 Equity Incentive Plan, as amended.	Form S-8	333-201204	4.2	December 22, 2014
10.5A+	2015 Inducement Plan.	Form 8-K	001-36066	10.2	February 10, 2015
10.5B+	Form of Stock Option Grant Notice and Form of Option Agreement under the 2015 Inducement Plan.	Form 8-K	001-36066	10.3	February 10, 2015
10.6A+	2015 Equity Incentive Plan	Form S-8	333-205482	99.5	July 2, 2015
10.6B+	Form of Paratek Pharmaceuticals, Inc. Stock Option Grant Notice under the 2015 Equity Incentive Plan	Form S-8	333-205482	99.6	July 2, 2015

Exhibit No.	Exhibit Description	Incorporated by Reference			
		Schedule/ Form	File Number	Exhibit	Filing Date
10.6C+	Form of Paratek Pharmaceuticals, Inc. Restricted Stock Unit Grant Notice under the 2015 Equity Incentive Plan	Form S-8	333-205482	99.7	July 2, 2015
10.6D+	Form of Leadership Team Restricted Stock Unit Grant Notice and Form of Leadership Team Restricted Stock Unit Award Agreement under the 2015 Equity Incentive Plan.	Form 8-K	001-36066	10.1	February 8, 2017
10.6E*+	Form of Director Restricted Stock Unit Grant Notice and Form of Director Restricted Stock Unit Award Agreement under the 2015 Equity Incentive Plan.				
10.6F*+	Form of Director Stock Option Grant Notice and Form of Director Option Agreement under the 2015 Equity Incentive Plan.				
10.7*+	Non-Employee Director Compensation Policy.				
10.8+	Form of Indemnification Agreement between the Company, its executive officers and directors.	Form 10-K	001-36066	10.8	March 9, 2016
10.9†	United States License and Collaboration Agreement by and between the Company and Purdue Pharmaceutical Products L.P., dated as of July 31, 2009.	Form 10-Q	000-51967	10.1	November 16, 2009
10.10†	First Amendment to the United States License and Collaboration Agreement by and between the Company and Purdue Pharmaceutical Products L.P., dated as of November 1, 2011.	Form 10-K	000-51967	10.30	March 30, 2012
10.11†	Letter Agreement by and between the Company and Purdue Pharmaceutical Products L.P., dated as of July 31, 2009.	Form 10-Q	000-51967	10.2	November 16, 2009
10.12†	License Agreement by and between the Company and Shin Nippon Biomedical Laboratories, Ltd., dated as of September 24, 2013.	Form 10-Q	001-36066	10.6	November 7, 2013
10.13	Termination Agreement and Release, between the Company and Shin Nippon Biomedical Laboratories, dated as of September 19, 2014.	Form 10-Q	001-36066	10.1	October 28, 2014
10.14†	Collaborative Research and License Agreement by and between the Company and Warner Chilcott, dated as of July 2, 2007.	Form 10-K	001-36066	10.16	April 2, 2015
10.15†	License Agreement by and between the Company and Tufts University dated as of February 1, 1997, as amended.	Form 10-K	001-36066	10.17	April 2, 2015
10.16+	Employment Agreement, as amended, by and between the Company and Doug Pagán dated as of February 4, 2015.	Form 10-K	001-36066	10.18	April 2, 2015
10.17+	Employment Agreement, as amended, by and between the Company and Michael Bigham dated as of February 4, 2015.	Form 10-K	001-36066	10.19	April 2, 2015
10.18+	Employment Agreement, as amended, by and between the Company and Evan Loh dated as of February 4, 2015.	Form 10-K	001-36066	10.20	April 2, 2015

Exhibit No.	Exhibit Description	Incorporated by Reference			
		Schedule/ Form	File Number	Exhibit	Filing Date
10.19+	Employee Agreement, as amended, by and between the Company and Adam Woodrow dated as of February 4, 2015	Form 10-Q	001-36066	10.3	May 15, 2015
10.20+	Employment Agreement, by and between the Company and William Haskel dated as of June 12, 2015	Form 10-Q	001-36066	10.4	August 11, 2015
10.21	Stock Purchase Agreement dated October 1, 2015, by and between Paratek Pharmaceuticals, Inc. and Hercules Technology Growth Capital, Inc.	Form 8-K	001-36066	10.1	October 5, 2015
10.22	Loan and Security Agreement, dated September 30, 2015, between the Company and Hercules Technology II, L.P., Hercules Technology III, L.P., certain other lenders and Hercules Technology Growth Capital, Inc.	Form 10-Q/A	001-36066	10.5	December 3, 2015
10.23*	Amendment No. 1 to Loan and Security Agreement dated November 10, 2015, by and between Paratek Pharmaceuticals, Inc., Paratek Pharma, LLC, Hercules Technology II, L.P., Hercules Technology III, L.P., certain other lenders and Hercules Technology Growth Capital, Inc.				
10.24	Amendment No. 2 to Loan and Security Agreement dated December 12, 2016, by and between Paratek Pharmaceuticals, Inc., Paratek Pharma, LLC, Hercules Technology II, L.P., Hercules Technology III, L.P., certain other lenders and Hercules Technology Growth Capital, Inc.	Form 8-K	001-36066	10.1	December 13, 2016
10.25*	Boston Lease Agreement between the Company and The Heritage on The Garden, dated as of April 24, 2015.				
10.26*	King of Prussia Lease Agreement between the Company and Atlantic American Properties Trust, dated as of January 23, 2015.				
10.27*^	Manufacturing and Services Agreement by and between the Company and Almac Pharma Services Limited, dated as of December 30, 2016.				

Exhibit No.	Exhibit Description	Incorporated by Reference			
		Schedule/ Form	File Number	Exhibit	Filing Date
10.28*^	Manufacturing and Services Agreement by and between the Company and CIPAN – Companhia Industrial Produtora de Antibióticos, S.A., dated as of November 2, 2016.				
10.29*^	Outsourcing Agreement by and between the Company and CARBOGEN AMCIS AG, dated as of December 30, 2016.				
16.1	Letter from CohnReznick to the Securities and Exchange Commission dated as of May 16, 2016.	Form 8-K	001-36066	16.1	May 16, 2016
21.1*	Subsidiaries of the Company.				
23.1*	Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm.				
23.2*	Consent of CohnReznick LLP, Independent Registered Public Accounting Firm.				
23.3*	Consent of Ropes & Gray LLP (included in Exhibit 5.1).				
24.1	Power of Attorney (included on signature page)				
31.1*	Certification of the Company's Chief Executive Officer pursuant to Rule 13a-14(a) and Rule 15d-14(a) of the Securities and Exchange Act of 1934, as amended, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				
31.2*	Certification of the Company's Chief Financial Officer pursuant to Rule 13a-14(a) and Rule 15d-14(a) of the Securities and Exchange Act of 1934, as amended, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				
32.1*	Certification of the Company's Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				
32.2*	Certification of the Company's Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				
101.INS*	XBRL Instance Document.				
101.SCH*	XBRL Taxonomy Extension Schema Document.				
101.CAL*	XBRL Taxonomy Extension Calculation Linkbase Document.				
101.DEF*	XBRL Taxonomy Extension Definition Linkbase Document.				
101.LAB*	XBRL Taxonomy Extension Labels Linkbase Document.				
101.PRE*	XBRL Taxonomy Extension Presentation Linkbase Document.				

* Filed herewith.

† Confidential treatment has been granted as to certain portions, which portions have been omitted and submitted separately to the Securities and Exchange Commission.

^ Confidential treatment has been requested as to certain portions, which portions have been omitted and submitted separately to the Securities and Exchange Commission.
+ Management contract or compensatory plan, contract or arrangement.

Exhibit 1.1

EXECUTION VERSION

Paratek Pharmaceuticals, Inc.

Shares of Common Stock
(par value $0.001 per share)

Controlled Equity Offering℠

Sales Agreement

February 28, 2017

Cantor Fitzgerald & Co.
499 Park Avenue
New York, NY 10022

Ladies and Gentlemen:

Paratek Pharmaceuticals, Inc., a Delaware corporation (the "**Company**"), confirms its agreement (this "**Agreement**") with Cantor Fitzgerald & Co. (the "**Agent**"), as follows:

1. Issuance and Sale of Shares. The Company agrees that, from time to time during the term of this Agreement, on the terms and subject to the conditions set forth herein, it may issue and sell through the Agent up to $50,000,000 of shares (the "**Maximum Amount**") of common stock (the "**Placement Shares**") of the Company, par value $0.001 per share (the "**Common Stock**"). Notwithstanding anything to the contrary contained herein, the parties hereto agree that compliance with the limitations set forth in this Section 1 on the amount of Placement Shares issued and sold under this Agreement shall be the sole responsibility of the Company and that Agent shall have no obligation in connection with such compliance. The offer and sale of Placement Shares through Agent will be effected pursuant to the Registration Statement filed by the Company and declared effective by the Securities and Exchange Commission (the "**Commission**") on December 20, 2016, although nothing in this Agreement shall be construed as requiring the Company to use the Registration Statement to issue Common Stock.

The Company has filed, in accordance with the provisions of the Securities Act of 1933, as amended (the "**Securities Act**"), and the rules and regulations thereunder (the "**Securities Act Regulations**"), with the Commission a registration statement on Form S-3 (File No. 333-215123), including a base prospectus, relating to certain securities, including the Placement Shares to be issued from time to time by the Company, and which incorporates by reference documents that the Company has filed or will file in accordance with the provisions of the Securities Exchange Act of 1934, as amended (the "**Exchange Act**"), and the rules and regulations thereunder. The Company has prepared a prospectus supplement to the base prospectus included as part of the registration statement, which prospectus supplement relates to the Placement Shares to be issued from time to time by the Company (the "**Prospectus**

Supplement"). The Company will furnish to the Agent, for use by the Agent, copies of the prospectus included as part of such registration statement, as supplemented by the Prospectus Supplement, relating to the Placement Shares to be issued from time to time by the Company. The Company may file one or more additional registration statements from time to time that will contain a base prospectus and related prospectus or prospectus supplement, if applicable (which shall be a Prospectus Supplement). Except where the context otherwise requires, such registration statement(s), including all documents filed as part thereof or incorporated by reference therein, and including any information contained in a Prospectus (as defined below) subsequently filed with the Commission pursuant to Rule 424(b) under the Securities Act Regulations or deemed to be a part of such registration statement pursuant to Rule 430B of the Securities Act Regulations, is herein called the "**Registration Statement**." The base prospectus or base prospectuses, including all documents incorporated therein by reference, included in the Registration Statement, as it may be supplemented, if necessary, by any Prospectus Supplement, in the form in which such prospectus or prospectuses and/or Prospectus Supplement have most recently been filed by the Company with the Commission pursuant to Rule 424(b) under the Securities Act Regulations, is herein called the "**Prospectus**."

Any reference herein to the Registration Statement, Prospectus or any Issuer Free Writing Prospectus (defined below) shall be deemed to refer to and include the documents, if any, incorporated by reference therein (the "**Incorporated Documents**"), including, unless the context otherwise requires, the documents, if any, filed as exhibits to such Incorporated Documents. Any reference herein to the terms "amend," "amendment" or "supplement" with respect to the Registration Statement, any Prospectus Supplement, the Prospectus or any Issuer Free Writing Prospectus shall be deemed to refer to and include the filing of any document under the Exchange Act on or after the most-recent effective date of the Registration Statement, or the date of the Prospectus or such Issuer Free Writing Prospectus, as the case may be, and incorporated therein by reference. For purposes of this Agreement, all references to the Registration Statement, the Prospectus or to any amendment or supplement thereto shall be deemed to include the most recent copy filed with the Commission pursuant to its Electronic Data Gathering Analysis and Retrieval system, or if applicable, the Interactive Data Electronic Application system when used by the Commission (collectively, "**EDGAR**").

2. Placements. Each time that the Company wishes to issue and sell Placement Shares hereunder (each, a "**Placement**"), it will notify the Agent by email notice (or other method mutually agreed to in writing by the parties) of the number of Placement Shares to be sold, the time period during which sales are requested to be made, any limitation on the number of Placement Shares that may be sold in any one day and any minimum price below which sales may not be made (a "**Placement Notice**"), the form of which is attached hereto as Schedule 1. The Placement Notice shall originate from any of the individuals from the Company set forth on Schedule 3 (with a copy to each of the other individuals from the Company listed on such schedule), and shall be addressed to each of the individuals from the Agent set forth on Schedule 3, as such Schedule 3 may be amended from time to time. The Placement Notice shall be effective unless and until (i) the Agent declines to accept the terms contained therein for any reason, in its sole discretion, which declination, to be effective, must occur within two (2) Trading Days of the receipt of the Placement Notice, (ii) the entire amount of the Placement Shares thereunder have been sold, (iii) the Company suspends or terminates the Placement Notice or (iv) this Agreement has been terminated under the provisions of Section 12. The

amount of any discount, commission or other compensation to be paid by the Company to Agent in connection with the sale of the Placement Shares shall be calculated in accordance with the terms set forth in Schedule 2. It is expressly acknowledged and agreed that neither the Company nor the Agent will have any obligation whatsoever with respect to a Placement or any Placement Shares unless and until the Company delivers a Placement Notice to the Agent and the Agent does not decline such Placement Notice pursuant to the terms set forth above, and then only upon the terms specified therein and herein. In the event of a conflict between the terms of this Agreement and the terms of a Placement Notice, the terms of the Placement Notice will control.

3. Sale of Placement Shares by Agent. Subject to the provisions of Section 5(a), the Agent, for the period specified in the Placement Notice, will use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of the NASDAQ Global Market (the "**Exchange**"), to sell the Placement Shares up to the amount specified, and otherwise in accordance with the terms of such Placement Notice. The Agent will provide written confirmation to the Company no later than the opening of the Trading Day (as defined below) immediately following the Trading Day on which it has made sales of Placement Shares hereunder setting forth the number of Placement Shares sold on such day, the compensation payable by the Company to the Agent pursuant to Section 2 with respect to such sales, and the Net Proceeds (as defined below) payable to the Company, with an itemization of the deductions made by the Agent (as set forth in Section 5(b)) from the gross proceeds that it receives from such sales. Subject to the terms of the Placement Notice, the Agent may sell Placement Shares by any method permitted by law deemed to be an "at the market" offering as defined in Rule 415 of the Securities Act Regulations, including without limitation sales made directly on or through the Exchange, on any other existing trading market for the Common Stock or to or through a market maker. Subject to the terms of a Placement Notice, the Agent may also sell Placement Shares by any other method permitted by law, including but not limited to in privately negotiated transactions. "**Trading Day**" means any day on which Common Stock is traded on the Exchange.

4. Suspension of Sales. The Company or the Agent may, upon notice ("**Suspension Notice**") to the other party in writing (including by email correspondence to each of the individuals of the other party set forth on Schedule 3, if receipt of such correspondence is actually acknowledged by any of the individuals to whom the notice is sent, other than via auto-reply) or by telephone (confirmed immediately by verifiable facsimile transmission or email correspondence to each of the individuals of the other party set forth on Schedule 3), suspend any sale of Placement Shares (a "**Suspension**"); provided, however, that, unless such Suspension Notice indicates otherwise, such Suspension shall not affect or impair any party's obligations with respect to any Placement Shares sold hereunder prior to the receipt of such notice. While a Suspension is in effect any obligation under Sections 7(l), 7(m), and 7(n) with respect to the delivery of certificates, opinions, or comfort letters to the Agent, shall be waived. Each of the parties agrees that no such notice under this Section 4 shall be effective against any other party unless it is made to one of the individuals named on Schedule 3 hereto, as such Schedule may be amended from time to time by the Company with respect to the Company's individuals named thereon, and by the Agent with respect to the Agent's individuals named thereon.

5. Sale and Delivery to the Agent; Settlement.

(a) Sale of Placement Shares. On the basis of the representations and warranties herein contained and subject to the terms and conditions herein set forth, upon the Agent's acceptance of the terms of a Placement Notice, and unless the sale of the Placement Shares described therein has been declined, suspended, or otherwise terminated in accordance with the terms of this Agreement, the Agent, for the period specified in the Placement Notice, will use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable law and regulations to sell such Placement Shares up to the amount specified, and otherwise in accordance with the terms of such Placement Notice. The Company acknowledges and agrees that (i) there can be no assurance that the Agent will be successful in selling Placement Shares, (ii) the Agent will incur no liability or obligation to the Company or any other person or entity if it does not sell Placement Shares for any reason other than a failure by the Agent to use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable law and regulations to sell such Placement Shares as required under this Agreement and (iii) the Agent shall be under no obligation to purchase Placement Shares on a principal basis pursuant to this Agreement, except as otherwise agreed by the Agent and the Company.

(b) Settlement of Placement Shares. Unless otherwise specified in the applicable Placement Notice, settlement for sales of Placement Shares will occur on the third (3rd) Trading Day (or such earlier day as is industry practice for regular-way trading) following the date on which such sales are made (each, a "**Settlement Date**"). The Agent shall notify the Company of each sale of Placement Shares on the date of such sale. The amount of proceeds to be delivered to the Company on a Settlement Date against receipt of the Placement Shares sold (the "**Net Proceeds**") will be equal to the aggregate sales price received by the Agent, after deduction for (i) the Agent's commission, discount or other compensation for such sales payable by the Company pursuant to Section 2 hereof, and (ii) any transaction fees imposed by any governmental or self-regulatory organization in respect of such sales.

(c) Delivery of Placement Shares. On or before each Settlement Date, the Company will, or will cause its transfer agent to, electronically transfer the Placement Shares being sold by crediting the Agent's or its designee's account (provided the Agent shall have given the Company written notice of such designee at least one Trading Day prior to the Settlement Date) at The Depository Trust Company through its Deposit and Withdrawal at Custodian System or by such other means of delivery as may be mutually agreed upon by the parties hereto which in all cases shall be freely tradable, transferable, registered shares in good deliverable form. On each Settlement Date, the Agent will deliver the related Net Proceeds in same day funds to an account designated by the Company on, or prior to, the Settlement Date. The Company agrees that if the Company, or its transfer agent (if applicable), defaults in its obligation to deliver Placement Shares on a Settlement Date through no fault of the Agent, the Company agrees that in addition to and in no way limiting the rights and obligations set forth in Section 10(a) hereto, it will (i) hold the Agent harmless against any loss, claim, damage, or expense (including reasonable legal fees and expenses), as incurred, arising out of or in connection with such default by the Company or its transfer agent (if applicable) and (ii) pay to the Agent any commission, discount, or other compensation to which it would otherwise have been entitled absent such default.

(d) Denominations; Registration. Certificates for the Placement Shares, if any, shall be in such denominations and registered in such names as the Agent may request in writing at least one full Business Day (as defined below) before the Settlement Date. The certificates for the Placement Shares, if any, will be made available by the Company for examination and packaging by the Agent in The City of New York not later than 12:00 p.m. (New York time) on the Business Day prior to the Settlement Date.

(e) Limitations on Offering Size. Under no circumstances shall the Company cause or request the offer or sale of any Placement Shares if, after giving effect to the sale of such Placement Shares, the aggregate gross sales proceeds of Placement Shares sold pursuant to this Agreement would exceed the lesser of (A) together with all sales of Placement Shares under this Agreement, the Maximum Amount, (B) the amount available for offer and sale under the currently effective Registration Statement and (C) the amount authorized from time to time to be issued and sold under this Agreement by the Company's board of directors, a duly authorized committee thereof or a duly authorized executive committee, and notified to the Agent in writing. Under no circumstances shall the Company cause or request the offer or sale of any Placement Shares pursuant to this Agreement at a price lower than the minimum price authorized from time to time by the Company's board of directors, a duly authorized committee thereof or a duly authorized executive committee, and notified to the Agent in writing. Further, under no circumstances shall the Company cause or permit the aggregate offering amount of Placement Shares sold pursuant to this Agreement to exceed the Maximum Amount.

6. Representations and Warranties of the Company. The Company represents and warrants to, and agrees with Agent that as of the date of this Agreement and as of each Applicable Time (as defined below), unless such representation, warranty or agreement specifies a different time:

(a) Registration Statement and Prospectus. The Company and, assuming no act or omission on the part of the Agent that would make such statement untrue, the transactions contemplated by this Agreement meet the requirements for and comply with the conditions for the use of Form S-3 under the Securities Act. The Registration Statement has been filed or will be filed with the Commission and has been or will be declared effective by the Commission under the Securities Act prior to the issuance of any Placement Notices by the Company. The Prospectus Supplement will name the Agent as the agent in the section entitled "Plan of Distribution." The Company has not received, and has no notice of, any order of the Commission preventing or suspending the use of the Registration Statement, or threatening or instituting proceedings for that purpose. The Registration Statement and the offer and sale of Placement Shares as contemplated hereby meet the requirements of Rule 415 under the Securities Act and comply in all material respects with said Rule. Any statutes, regulations, contracts or other documents that are required to be described in the Registration Statement or the Prospectus or to be filed as exhibits to the Registration Statement have been so described or filed. Copies of the Registration Statement, the Prospectus, and any such amendments or supplements and all Incorporated Documents that were filed with the Commission on or prior to the date of this Agreement have been delivered, or are available through EDGAR, to the Agent and its counsel. The Company has not distributed and, prior to the later to occur of each Settlement Date and completion of the distribution of the Placement Shares, will not distribute any offering material in connection with the offering or sale of the Placement Shares other than the Registration

Statement and the Prospectus and any Issuer Free Writing Prospectus (as defined below) to which the Agent has consented, any such consent not to be unreasonably withheld, conditioned or delayed. The Common Stock is registered pursuant to Section 12(b) of the Exchange Act and is currently listed on the Exchange under the trading symbol "PRTK." The Company has taken no action designed to, or likely to have the effect of, terminating the registration of the Common Stock under the Exchange Act, delisting the Common Stock from the Exchange, nor has the Company received any notification that the Commission or the Exchange is contemplating terminating such registration or listing. To the Company's knowledge, it is in compliance with all applicable listing requirements of the Exchange. The Company has no reason to believe that it will not in the foreseeable future continue to be in compliance with all such listing and maintenance requirements.

(b) No Misstatement or Omission. The Registration Statement, when it became or becomes effective, and the Prospectus, and any amendment or supplement thereto, on the date of such Prospectus or amendment or supplement, conformed and will conform in all material respects with the requirements of the Securities Act. At each Settlement Date, the Registration Statement and the Prospectus, as of such date, will conform in all material respects with the requirements of the Securities Act. The Registration Statement, when it became or becomes effective, did not, and will not, contain an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading. The Prospectus and any amendment and supplement thereto, on the date thereof and at each Applicable Time (defined below), did not or will not include an untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in light of the circumstances under which they were made, not misleading. The Incorporated Documents did not, and any further Incorporated Documents filed after the date of this Agreement will not, when filed with the Commission, contain an untrue statement of a material fact or omit to state a material fact required to be stated in such document or necessary to make the statements in such document, in light of the circumstances under which they were made, not misleading. The foregoing shall not apply to statements in, or omissions from, any such document made in reliance upon, and in conformity with, information furnished to the Company by Agent specifically for use in the preparation thereof.

(c) Conformity with Securities Act and Exchange Act. The Registration Statement, the Prospectus, any Issuer Free Writing Prospectus or any amendment or supplement thereto, and the Incorporated Documents, when such documents were or are filed with the Commission under the Securities Act or the Exchange Act or became or become effective under the Securities Act, as the case may be, conformed or will conform in all material respects with the requirements of the Securities Act and the Exchange Act, as applicable.

(d) Financial Information. The consolidated financial statements of the Company included or incorporated by reference in the Registration Statement, the Prospectus and the Issuer Free Writing Prospectuses, if any, together with the related notes and schedules, present fairly, in all material respects, the consolidated financial position of the Company and the Subsidiaries (as defined below) as of the dates indicated and the consolidated results of operations, cash flows and changes in stockholders' equity of the Company for the periods specified and have been prepared in compliance with the requirements of the Securities Act and Exchange Act and in conformity with GAAP (as defined below) applied on a consistent basis

during the periods involved; the other financial and statistical data with respect to the Company and the Subsidiaries (as defined below) contained or incorporated by reference in the Registration Statement, the Prospectus and the Issuer Free Writing Prospectuses, if any, are accurately and fairly presented and prepared on a basis consistent with the financial statements and books and records of the Company; there are no financial statements (historical or pro forma) that are required to be included or incorporated by reference in the Registration Statement, or the Prospectus that are not included or incorporated by reference as required; the Company and the Subsidiaries (as defined below) do not have any material liabilities or obligations, direct or contingent (including any off-balance sheet obligations), not described in the Registration Statement (excluding the exhibits thereto), and the Prospectus; and all disclosures contained or incorporated by reference in the Registration Statement, the Prospectus and the Issuer Free Writing Prospectuses, if any, regarding "non-GAAP financial measures" (as such term is defined by the rules and regulations of the Commission) comply with Regulation G of the Exchange Act and Item 10(e) of Regulation S-K under the Securities Act, to the extent applicable. The interactive data in eXtensible Business Reporting Language included or incorporated by reference in the Registration Statement and the Prospectus fairly presents the information called for in all material respects and has been prepared in accordance with the Commission's rules and guidelines applicable thereto.

(e) Conformity with EDGAR Filing. The Prospectus delivered to the Agent for use in connection with the sale of the Placement Shares pursuant to this Agreement will be identical to the versions of the Prospectus created to be transmitted to the Commission for filing via EDGAR, except to the extent permitted by Regulation S-T.

(f) Organization. The Company and each of its Subsidiaries (as defined below) are, and will be, duly organized, validly existing as a corporation and in good standing under the laws of their respective jurisdictions of organization. The Company and each of its Subsidiaries (as defined below) are, and will be, duly licensed or qualified as a foreign corporation for transaction of business and in good standing under the laws of each other jurisdiction in which their respective ownership or lease of property or the conduct of their respective businesses requires such license or qualification, and have all corporate power and authority necessary to own or hold their respective properties and to conduct their respective businesses as described in the Registration Statement and the Prospectus, except where the failure to be so qualified or in good standing or have such power or authority would not, individually or in the aggregate, have a material adverse effect or would reasonably be expected to have a material adverse effect on or affecting the assets, business, operations, earnings, properties, condition (financial or otherwise), prospects, stockholders' equity or results of operations of the Company and the Subsidiaries (as defined below) taken as a whole, or prevent or materially interfere with consummation of the transactions contemplated hereby (a "**Material Adverse Effect**").

(g) Subsidiaries. The Company has no significant subsidiaries (as such term is defined in Rule 1-02 of Regulation S-X promulgated by the Commission) other than those indicated as such on Schedule 4 (collectively, the "**Subsidiaries**"). The Company owns, directly or indirectly, all of the equity interests of the Subsidiaries free and clear of any lien, charge, security interest, encumbrance, right of first refusal or other restriction, and all the equity interests of the Subsidiaries are validly issued and are fully paid, nonassessable and free of

preemptive and similar rights. The Company does not own, directly or indirectly, any shares of stock or any other equity or long-term debt securities of any other corporation or have any equity interest in any other corporation, partnership, joint venture, association, trust or other entity.

(h) No Violation or Default. Neither the Company nor any of its Subsidiaries is (i) in violation of its respective charter or by-laws or similar organizational documents; (ii) in default, and no event has occurred that, with notice or lapse of time or both, would constitute such a default, in the due performance or observance of any term, covenant or condition contained in any indenture, mortgage, deed of trust, loan agreement or other agreement or instrument to which the Company or any of its Subsidiaries is a party or by which the Company or any of its Subsidiaries is bound or to which any of the property or assets of the Company or any of its Subsidiaries are subject; or (iii) in violation of any law or statute or any judgment, order, rule or regulation of any court or arbitrator or governmental or regulatory authority, except, in the case of each of clauses (ii) and (iii) above, for any such violation or default that would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. To the Company's knowledge, no other party under any material contract or other agreement to which it or any of its Subsidiaries is a party is in default in any respect thereunder where such default would reasonably be expected to have a Material Adverse Effect.

(i) No Material Adverse Change. Subsequent to the respective dates as of which information is given in the Registration Statement, the Prospectus and the Free Writing Prospectuses, if any (including any Incorporated Document), there has not been (i) any Material Adverse Effect or the occurrence of any development that the Company reasonably expects will result in a Material Adverse Effect, (ii) any transaction which is material to the Company and the Subsidiaries taken as a whole, (iii) any obligation or liability, direct or contingent (including any off-balance sheet obligations), incurred by the Company or any Subsidiary, which is material to the Company and the Subsidiaries taken as a whole, (iv) any material change in the capital stock or outstanding long-term indebtedness of the Company or any of its Subsidiaries or (v) any dividend or distribution of any kind declared, paid or made on the capital stock of the Company or any Subsidiary, other than in each case above in the ordinary course of business or as otherwise disclosed or contemplated in the Registration Statement or Prospectus (including any document deemed incorporated by reference therein).

(j) Capitalization. The issued and outstanding shares of capital stock of the Company have been validly issued, are fully paid and nonassessable and, other than as disclosed in the Registration Statement or the Prospectus, are not subject to any preemptive rights, rights of first refusal or similar rights. The Company has an authorized, issued and outstanding capitalization as set forth in the Registration Statement and the Prospectus as of the dates referred to therein (other than the grant of additional options or other equity awards under the Company's existing equity incentive plans, or changes in the number of outstanding shares of Common Stock due to the issuance of shares upon the exercise or conversion of securities exercisable for, or convertible into, Common Stock) and such authorized capital stock conforms in all material respects to the description thereof set forth in the Registration Statement and the Prospectus. The description of the securities of the Company in the Registration Statement and the Prospectus is complete and accurate in all material respects. Except as disclosed in or contemplated by the Registration Statement or the Prospectus, as of the date referred to therein, the Company does not have outstanding any options to purchase, or any rights or warrants to subscribe for, or any securities or obligations convertible into, or exchangeable for, or any contracts or commitments to issue or sell, any shares of capital stock or other securities.

(k) Authorization; Enforceability. The Company has full legal right, power and authority to enter into this Agreement and perform the transactions contemplated hereby. This Agreement has been duly authorized, executed and delivered by the Company and is a legal, valid and binding agreement of the Company enforceable against the Company in accordance with its terms, except to the extent that (i) enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors' rights generally and by general equitable principles, and (ii) the indemnification and contribution provisions of Section 10 hereof may be limited by federal or state securities laws and public policy considerations in respect thereof.

(l) Authorization of Placement Shares. The Placement Shares, when issued and delivered to the Agent pursuant to the terms approved by the board of directors of the Company or a duly authorized committee thereof, or a duly authorized executive committee, against payment therefor as provided herein, will be duly and validly authorized and issued and fully paid and nonassessable, free and clear of any pledge, lien, encumbrance, security interest or other claim, including any statutory or contractual preemptive rights, resale rights, rights of first refusal or other similar rights, and will be registered pursuant to Section 12 of the Exchange Act. The Placement Shares, when issued, will conform in all material respects to the description thereof set forth in or incorporated into the Prospectus.

(m) No Consents Required. No consent, approval, authorization, order, registration or qualification of or with any court or arbitrator or governmental or regulatory authority is required for the execution, delivery and performance by the Company of this Agreement or the issuance and sale by the Company of the Placement Shares as contemplated by this Agreement, except for such consents, approvals, authorizations, orders and registrations or qualifications as have been obtained or as may be required under applicable state securities laws or by the by-laws and rules of the Financial Industry Regulatory Authority, Inc. ("**FINRA**") or the Exchange in connection with the sale of the Placement Shares by the Agent.

(n) No Preferential Rights. Except as set forth in the Registration Statement and the Prospectus, (i) no person, as such term is defined in Rule 1-02 of Regulation S-X promulgated under the Securities Act (each, a "**Person**"), has the right, contractual or otherwise, to cause the Company to issue or sell to such Person any Common Stock or shares of any other capital stock or other securities of the Company (other than upon the exercise or conversion of outstanding options or other equity awards under the Company's equity incentive plans, or pursuant to the exercise of warrants), (ii) no Person has any preemptive rights, resale rights, rights of first refusal, rights of co-sale or any other rights (whether pursuant to a "poison pill" provision or otherwise) to purchase from the Company any Common Stock or shares of any other capital stock or other securities of the Company, (iii) no Person has the right to act as an underwriter or as a financial advisor to the Company in connection with the offer and sale of the Common Stock, and (iv) no Person has the right, contractual or otherwise, to require the Company to register under the Securities Act any Common Stock or shares of any other capital stock or other securities of the Company, or to include any such shares or other securities in the Registration Statement or the offering contemplated thereby, whether as a result of the filing or effectiveness of the Registration Statement or the sale of the Placement Shares as contemplated thereby or otherwise.

(o) Independent Public Accounting Firm. Each of CohnReznick LLP and Ernst & Young LLP (the "**Accountants**"), whose reports on the consolidated financial statements of the Company are filed with the Commission as part of the Company's most recent Annual Report on Form 10-K filed with the Commission and incorporated by reference into the Registration Statement and the Prospectus, has represented to the Company, and the Company has no knowledge that would cause it to believe that such representation is not correct, that the Accountants are and, during the periods covered by their report, were an independent registered public accounting firm within the meaning of the Securities Act and the Public Company Accounting Oversight Board (United States). To the Company's knowledge, neither of the Accountants is in violation of the auditor independence requirements of the Sarbanes-Oxley Act of 2002 (the "**Sarbanes-Oxley Act**") with respect to the Company.

(p) Enforceability of Agreements. All agreements between the Company and third parties expressly referenced in the Prospectus, other than such agreements that have expired by their terms or the termination of which is disclosed in documents filed by the Company on EDGAR, are legal, valid and binding obligations of the Company enforceable in accordance with their respective terms, except to the extent that (i) enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors' rights generally and by general equitable principles and (ii) the indemnification provisions of certain agreements may be limited by federal or state securities laws or public policy considerations in respect thereof, except for any unenforceability that, individually or in the aggregate, would not reasonably be expected to have a Material Adverse Effect.

(q) No Litigation. Except as set forth in the Registration Statement or the Prospectus, there are no legal, governmental or regulatory actions, suits or proceedings pending, nor, to the Company's knowledge, any legal, governmental or regulatory audits or investigations, in each case to which the Company or a Subsidiary is a party or to which any property of the Company or any of its Subsidiaries is the subject that, individually or in the aggregate, would reasonably be expected to have a Material Adverse Effect or materially and adversely affect the ability of the Company to perform its obligations under this Agreement; to the Company's knowledge, no such actions, suits or proceedings are threatened or contemplated by any governmental or regulatory authority or threatened by others; and (i) there are no current or pending legal, governmental or regulatory audits or investigations, actions, suits or proceedings that are required under the Securities Act to be described in the Prospectus that are not so described; and (ii) there are no contracts or other documents that are required under the Securities Act to be filed as exhibits to the Registration Statement that are not so filed.

(r) Consents and Permits. Except as disclosed in the Registration Statement and the Prospectus, the Company and its Subsidiaries have made all filings, applications and submissions required by, possesses and is operating in compliance with, all approvals, licenses, certificates, certifications, clearances, consents, grants, exemptions, marks, notifications, orders, permits and other authorizations issued by, the appropriate federal, state or foreign governmental or regulatory authorities (including, without limitation, the United States Food and Drug Administration (the "**FDA**"), the United States Drug Enforcement Administration or any other foreign, federal, state, provincial, court or local government or regulatory authorities including self-regulatory organizations engaged in the regulation of clinical trials, pharmaceuticals, biologics or biohazardous substances or materials) necessary for the ownership or lease of their

respective properties or to conduct its businesses as described in the Registration Statement and the Prospectus (collectively, "**Permits**"), except for such Permits the failure of which to possess, obtain or make the same would not reasonably be expected to have a Material Adverse Effect; the Company and its Subsidiaries are in compliance with the terms and conditions of all such Permits, except where the failure to be in compliance would not reasonably be expected to have a Material Adverse Effect; all of the Permits are valid and in full force and effect, except where any invalidity, individually or in the aggregate, would not be reasonably expected to have a Material Adverse Effect; and neither the Company nor any of its Subsidiaries has received any written notice of proceedings relating to the limitation, revocation, cancellation, suspension, modification or non-renewal of any such Permit or has any reason to believe that any such license, certificate, permit or authorization will not be renewed in the ordinary course. To the extent required by applicable laws and regulations of the FDA, the Company or the applicable Subsidiary has submitted to the FDA an Investigational New Drug Application or amendment or supplement thereto for each clinical trial it has conducted or sponsored or is conducting or sponsoring; all such submissions were in material compliance with applicable laws and rules and regulations when submitted and no material deficiencies have been asserted by the FDA with respect to any such submissions.

(s) Regulatory Filings. Except as disclosed in the Registration Statement and the Prospectus, neither the Company nor any of its Subsidiaries has failed to file with the applicable regulatory authorities (including, without limitation, the FDA, or any foreign, federal, state, provincial or local governmental or regulatory authority performing functions similar to those performed by the FDA) any required filing, declaration, listing, registration, report or submission, except for such failures that, individually or in the aggregate, would not reasonably be expected to have a Material Adverse Effect; except as disclosed in the Registration Statement and the Prospectus, all such filings, declarations, listings, registrations, reports or submissions were in compliance with applicable laws when filed and no deficiencies have been asserted by any applicable regulatory authority with respect to any such filings, declarations, listings, registrations, reports or submissions, except for any deficiencies that, individually or in the aggregate, would not have a Material Adverse Effect. The Company has operated and currently is, in all material respects, in compliance with the United States Federal Food, Drug, and Cosmetic Act, all applicable rules and regulations of the FDA and other federal, state, local and foreign governmental bodies exercising comparable authority. The Company has no knowledge of any studies, tests or trials not described in the Prospectus the results of which reasonably call into question in any material respect the results of the studies, tests and trials described in the Prospectus.

(t) Intellectual Property. Except as disclosed in the Registration Statement and the Prospectus, the Company and its Subsidiaries own, possess, license or have other rights to use all foreign and domestic patents, patent applications, trade and service marks, trade and service mark registrations, trade names, copyrights, licenses, inventions, trade secrets, technology, Internet domain names, know-how and other intellectual property (collectively, the "**Intellectual Property**"), necessary for the conduct of their respective businesses as now conducted except to the extent that the failure to own, possess, license or otherwise hold adequate rights to use such Intellectual Property would not, individually or in the aggregate, have a Material Adverse Effect. Except as disclosed in the Registration Statement and the Prospectus (i) there are no rights of third parties to any such Intellectual Property owned by the Company

and its Subsidiaries; (ii) to the Company's knowledge, there is no infringement by third parties of any such Intellectual Property; (iii) there is no pending or, to the Company's knowledge, threatened action, suit, proceeding or claim by others challenging the Company's and its Subsidiaries' rights in or to any such Intellectual Property, and the Company is unaware of any facts which could form a reasonable basis for any such action, suit, proceeding or claim; (iv) there is no pending or, to the Company's knowledge, threatened action, suit, proceeding or claim by others challenging the validity or scope of any such Intellectual Property; (v) there is no pending or, to the Company's knowledge, threatened action, suit, proceeding or claim by others that the Company and its Subsidiaries infringe or otherwise violate any patent, trademark, copyright, trade secret or other proprietary rights of others; (vi) to the Company's knowledge, there is no third-party U.S. patent or published U.S. patent application which contains claims for which an Interference Proceeding (as defined in 35 U.S.C. § 135) has been commenced against any patent or patent application described in the Prospectus as being owned by or licensed to the Company; and (vii) the Company and its Subsidiaries have complied with the terms of each agreement pursuant to which Intellectual Property has been licensed to the Company or such Subsidiary, and all such agreements are in full force and effect, except, in the case of any of clauses (i)-(vii) above, for any such infringement by third parties or any such pending or threatened suit, action, proceeding or claim as would not, individually or in the aggregate, reasonably be expected to result in a Material Adverse Effect.

(u) Clinical Studies. The preclinical studies and tests and clinical trials described in the Prospectus were, and, if still pending, are being, conducted in all material respects in accordance with the experimental protocols, procedures and controls pursuant to, where applicable, accepted professional and scientific standards for products or product candidates comparable to those being developed by the Company; the descriptions of such studies, tests and trials, and the results thereof, contained in the Prospectus are fair and accurate summaries thereof in all material respects; the Company is not aware of any tests, studies or trials not described in the Prospectus, the results of which reasonably call into question the results of the tests, studies and trials described in the Prospectus; and the Company has not received any written notice or correspondence from the FDA or any foreign, state or local governmental body exercising comparable authority or any institutional review board or comparable authority requiring the termination, suspension, clinical hold or material modification of any tests, studies or trials.

(v) Market Capitalization. At the time the Registration Statement was or will be originally declared effective, and at the time the Company's most recent Annual Report on Form 10-K was filed with the Commission, the Company met or will meet the then applicable requirements for the use of Form S-3 under the Securities Act, including but not limited to Instruction I.B.1 of Form S-3. The Company satisfies the pre-1992 eligibility requirements for the use of a registration statement on Form S-3 in connection with this offering (the pre-1992 eligibility requirements for the use of the registration statement on Form S-3 include (i) having a non-affiliate, public common equity float of at least $150 million or a non-affiliate, public common equity float of at least $100 million and annual trading volume of at least three million shares and (ii) having been subject to the Exchange Act reporting requirements for a period of 36 months). The aggregate market value of the outstanding voting and non-voting common equity (as defined in Securities Act Rule 405) of the Company held by persons other than affiliates of the Company (pursuant to Securities Act Rule 144, those that directly, or indirectly through one

or more intermediaries, control, or are controlled by, or are under common control with, the Company) (the "**Non-Affiliate Shares**"), was equal to or greater than $75 million (calculated by multiplying (x) the highest price at which the common equity of the Company closed on the Exchange within 60 days of the date of this Agreement times (y) the number of Non-Affiliate Shares). The Company is not a shell company (as defined in Rule 405 under the Securities Act) and has not been a shell company for at least 12 calendar months previously and if it has been a shell company at any time previously, has filed current Form 10 information (as defined in Instruction I.B.6 of Form S-3) with the Commission at least 12 calendar months previously reflecting its status as an entity that is not a shell company.

(w) No Material Defaults. Neither the Company nor any of the Subsidiaries has defaulted on any installment on indebtedness for borrowed money or on any rental on one or more long-term leases, which defaults, individually or in the aggregate, would reasonably be expected to have a Material Adverse Effect. The Company has not filed a report pursuant to Section 13(a) or 15(d) of the Exchange Act since the filing of its last Annual Report on Form 10-K, indicating that it (i) has failed to pay any dividend or sinking fund installment on preferred stock or (ii) has defaulted on any installment on indebtedness for borrowed money or on any rental on one or more long-term leases, which defaults, individually or in the aggregate, would reasonably be expected to have a Material Adverse Effect.

(x) Certain Market Activities. Neither the Company, nor any of the Subsidiaries, any of their respective directors, officers or controlling persons has taken, directly or indirectly, any action designed, or that has constituted or might reasonably be expected to cause or result in, under the Exchange Act or otherwise, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Placement Shares; however, the Company makes no representation with respect to any actions taken by the Agent.

(y) Broker/Dealer Relationships. Neither the Company nor any of the Subsidiaries or any related entities (i) is required to register as a "broker" or "dealer" in accordance with the provisions of the Exchange Act or (ii) directly or indirectly through one or more intermediaries, controls or is a "person associated with a member" or "associated person of a member" (within the meaning set forth in the FINRA Manual).

(z) No Reliance. The Company has not relied upon the Agent or legal counsel for the Agent for any legal, tax or accounting advice in connection with the offering and sale of the Placement Shares.

(aa) Taxes. The Company and each of its Subsidiaries have filed all federal, state, local and foreign tax returns which have been required to be filed and paid all taxes shown thereon through the date hereof, to the extent that such taxes have become due and are not being contested in good faith, except where the failure to so file or pay would not have a Material Adverse Effect. Except as otherwise disclosed in or contemplated by the Registration Statement or the Prospectus, no tax deficiency has been determined adversely to the Company or any of its Subsidiaries which has had, or would reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect. The Company has no knowledge of any federal, state or other governmental tax deficiency, penalty or assessment which has been or might be asserted or threatened against it which would have a Material Adverse Effect.

(bb) Title to Real and Personal Property. Except as set forth in the Registration Statement or the Prospectus, the Company and its Subsidiaries have good and marketable title in fee simple to all items of real property owned by them, good and valid title to all personal property described in the Registration Statement or Prospectus as being owned by them that are material to the businesses of the Company or such Subsidiary, in each case free and clear of all liens, encumbrances and claims, except those matters that (i) do not materially interfere with the use made and proposed to be made of such property by the Company and any of its Subsidiaries or (ii) would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect. Any real or personal property described in the Registration Statement or Prospectus as being leased by the Company and any of its Subsidiaries is held by them under valid, existing and enforceable leases, except those that (A) do not materially interfere with the use made or proposed to be made of such property by the Company or any of its Subsidiaries or (B) would not be reasonably expected, individually or in the aggregate, to have a Material Adverse Effect. Each of the properties of the Company and its Subsidiaries complies with all applicable codes, laws and regulations (including, without limitation, building and zoning codes, laws and regulations and laws relating to access to such properties), except if and to the extent disclosed in the Registration Statement or Prospectus or except for such failures to comply that would not, individually or in the aggregate, reasonably be expected to interfere in any material respect with the use made and proposed to be made of such property by the Company and its Subsidiaries or otherwise have a Material Adverse Effect. None of the Company or its subsidiaries has received from any governmental or regulatory authorities any notice of any condemnation of, or zoning change affecting, the properties of the Company and its Subsidiaries, and the Company knows of no such condemnation or zoning change which is threatened, except for such that would not reasonably be expected to interfere in any material respect with the use made and proposed to be made of such property by the Company and its Subsidiaries or otherwise have a Material Adverse Effect, individually or in the aggregate.

(cc) Environmental Laws. Except as set forth in the Registration Statement or the Prospectus, the Company and its Subsidiaries (i) are in compliance with any and all applicable federal, state, local and foreign laws, rules, regulations, decisions and orders relating to the protection of human health and safety, the environment or hazardous or toxic substances or wastes, pollutants or contaminants (collectively, "**Environmental Laws**"); (ii) have received and are in compliance with all permits, licenses or other approvals required of them under applicable Environmental Laws to conduct their respective businesses as described in the Registration Statement and the Prospectus; and (iii) have not received notice of any actual or potential liability for the investigation or remediation of any disposal or release of hazardous or toxic substances or wastes, pollutants or contaminants, except, in the case of any of clauses (i), (ii) or (iii) above, for any such failure to comply or failure to receive required permits, licenses, other approvals or liability as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(dd) Disclosure Controls. Except as disclosed in the Registration Statement or the Prospectus, the Company and each of its Subsidiaries maintain systems of internal accounting controls sufficient to provide reasonable assurance that (i) transactions are executed in accordance with management's general or specific authorizations; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with generally accepted accounting principles and to maintain asset accountability; (iii) access to assets is

permitted only in accordance with management's general or specific authorization; and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences. The Company's internal control over financial reporting is effective and the Company is not aware of any material weaknesses in its internal control over financial reporting (other than as set forth in the Prospectus). Since the date of the latest audited financial statements of the Company included in the Prospectus, there has been no change in the Company's internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting (other than as set forth in the Prospectus). The Company has established disclosure controls and procedures (as defined in Exchange Act Rules 13a-15 and 15d-15) for the Company and designed such disclosure controls and procedures to provide reasonable assurance that material information relating to the Company and each of its Subsidiaries is made known to the certifying officers by others within those entities, particularly during the period in which the Company's Annual Report on Form 10-K or Quarterly Report on Form 10-Q, as the case may be, is being prepared. The Company's certifying officers have evaluated the effectiveness of the Company's controls and procedures as of a date within 90 days prior to the filing date of the Form 10-K for the fiscal year most recently ended (such date, the **"Evaluation Date**"). The Company presented in its Form 10-K for the fiscal year most recently ended the conclusions of the certifying officers about the effectiveness of the disclosure controls and procedures based on their evaluations as of the Evaluation Date and the disclosure controls and procedures are effective. Since the Evaluation Date, there have been no significant changes in the Company's internal controls (as such term is defined in Item 307(b) of Regulation S-K under the Securities Act) or, to the Company's knowledge, in other factors that could significantly affect the Company's internal controls.

(ee) Sarbanes-Oxley. Except as disclosed in the Registration Statement or the Prospectus, there is and has been no failure on the part of the Company or, to the knowledge of the Company, any of the Company's directors or officers, in their capacities as such, to comply in all material respects with any applicable provisions of the Sarbanes-Oxley Act and the rules and regulations promulgated thereunder. Each of the principal executive officer and the principal financial officer of the Company (or each former principal executive officer of the Company and each former principal financial officer of the Company as applicable) has made all certifications required by Sections 302 and 906 of the Sarbanes-Oxley Act with respect to all reports, schedules, forms, statements and other documents required to be filed by it or furnished by it to the Commission. For purposes of the preceding sentence, "principal executive officer" and "principal financial officer" shall have the meanings given to such terms in the Sarbanes-Oxley Act.

(ff) Finder's Fees. Neither the Company nor any of the Subsidiaries has incurred any liability for any finder's fees, brokerage commissions or similar payments in connection with the transactions herein contemplated, except as may otherwise exist with respect to Agent pursuant to this Agreement.

(gg) Labor Disputes. No labor disturbance by or dispute with employees of the Company or any of its Subsidiaries exists or, to the knowledge of the Company, is threatened which would reasonably be expected to result in a Material Adverse Effect.

(hh) Investment Company Act. Neither the Company nor any of the Subsidiaries is or, after giving effect to the offering and sale of the Placement Shares, will be an "investment company" or an entity "controlled" by an "investment company," as such terms are defined in the Investment Company Act of 1940, as amended (the "**Investment Company Act**").

(ii) Operations. The operations of the Company and its Subsidiaries are and have been conducted at all times in compliance with applicable financial record keeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all jurisdictions to which the Company or its Subsidiaries are subject, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency (collectively, the "**Money Laundering Laws**"), except as would not reasonably be expected to result in a Material Adverse Effect; and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any of its Subsidiaries with respect to the Money Laundering Laws is pending or, to the knowledge of the Company, threatened.

(jj) Off-Balance Sheet Arrangements. There are no transactions, arrangements and other relationships between and/or among the Company, and/or, to the knowledge of the Company, any of its affiliates and any unconsolidated entity, including, but not limited to, any structural finance, special purpose or limited purpose entity (each, an "**Off Balance Sheet Transaction**") that could reasonably be expected to affect materially the Company's liquidity or the availability of or requirements for its capital resources, including those Off Balance Sheet Transactions described in the Commission's Statement about Management's Discussion and Analysis of Financial Conditions and Results of Operations (Release Nos. 33-8056; 34-45321; FR-61), required to be described in the Prospectus which have not been described as required.

(kk) Underwriter Agreements. The Company is not a party to any agreement with an agent or underwriter for any other "at-the-market" or continuous equity transaction.

(ll) ERISA. To the knowledge of the Company, each material employee benefit plan, within the meaning of Section 3(3) of the Employee Retirement Income Security Act of 1974, as amended ("**ERISA**"), that is maintained, administered or contributed to by the Company or any of its affiliates for employees or former employees of the Company and any of its Subsidiaries has been maintained in material compliance with its terms and the requirements of any applicable statutes, orders, rules and regulations, including but not limited to ERISA and the Internal Revenue Code of 1986, as amended (the "**Code**"); no prohibited transaction, within the meaning of Section 406 of ERISA or Section 4975 of the Code, has occurred which would result in a material liability to the Company with respect to any such plan excluding transactions effected pursuant to a statutory or administrative exemption; and for each such plan that is subject to the funding rules of Section 412 of the Code or Section 302 of ERISA, no "accumulated funding deficiency" as defined in Section 412 of the Code has been incurred, whether or not waived, and the fair market value of the assets of each such plan (excluding for these purposes accrued but unpaid contributions) exceeds the present value of all benefits accrued under such plan determined using reasonable actuarial assumptions, other than in each case of such as would not result in a Material Adverse Effect.

(mm) Forward Looking Statements. No forward-looking statement (within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act) (a "**Forward Looking Statement**") contained in the Registration Statement and the Prospectus has been made or reaffirmed without a reasonable basis or has been disclosed other than in good faith. The Forward Looking Statements incorporated by reference in the Registration Statement and the Prospectus from the Company's Annual Report on Form 10-K for the fiscal year most recently ended (i) except for any Forward-Looking Statement included in any financial statements or notes thereto, are within the coverage of the safe harbor for forward looking statements set forth in Section 27A of the Securities Act, Rule 175(b) under the Securities Act or Rule 3b-6 under the Exchange Act, as applicable, (ii) were made by the Company with a reasonable basis and in good faith and reflect the Company's good faith commercially reasonable best estimate of the matters described therein, and (iii) have been prepared in accordance with Item 10 of Regulation S-K under the Securities Act.

(nn) Agent Purchases. The Company acknowledges and agrees that the Agent has informed the Company that the Agent may, to the extent permitted under the Securities Act and the Exchange Act, purchase and sell Common Stock for its own account while this Agreement is in effect, provided, that (i) no such purchase or sales shall take place while a Placement Notice is in effect (except to the extent each Agent may engage in sales of Placement Shares purchased or deemed purchased from the Company as a "riskless principal" or in a similar capacity) and (ii) the Company shall not be deemed to have authorized or consented to any such purchases or sales by the Agent.

(oo) Margin Rules. Neither the issuance, sale and delivery of the Placement Shares nor the application of the proceeds thereof by the Company as described in the Registration Statement and the Prospectus will violate Regulation T, U or X of the Board of Governors of the Federal Reserve System or any other regulation of such Board of Governors.

(pp) Insurance. The Company and each of its Subsidiaries carry, or are covered by, insurance in such amounts and covering such risks as the Company and each of its Subsidiaries reasonably believe are adequate for the conduct of their properties and as is customary for companies engaged in similar businesses in similar industries.

(qq) No Improper Practices. (i) Neither the Company nor, to the Company's knowledge, the Subsidiaries, nor to the Company's knowledge, any of its or their respective executive officers has, in the past five years, made any unlawful contributions to any candidate for any political office (or failed fully to disclose any contribution in violation of law) or made any contribution or other payment to any official of, or candidate for, any federal, state, municipal, or foreign office or other person charged with similar public or quasi-public duty in violation of any law or of the character required to be disclosed in the Prospectus; (ii) no relationship, direct or indirect, exists between or among the Company or, to the Company's knowledge, any Subsidiary or any affiliate of any of them, on the one hand, and the directors, officers and stockholders of the Company or, to the Company's knowledge, any Subsidiary, on the other hand, that is required by the Securities Act to be described in the Registration Statement and the Prospectus that is not so described; (iii) no relationship, direct or indirect, exists between or among the Company or any Subsidiary or any affiliate of them, on the one hand, and the directors, officers, or stockholders of the Company or, to the Company's knowledge, any Subsidiary, on the other hand, that is required by the rules of FINRA to be

described in the Registration Statement and the Prospectus that is not so described; (iv) except as described in the Prospectus, there are no material outstanding loans or advances or material guarantees of indebtedness by the Company or, to the Company's knowledge, any Subsidiary to or for the benefit of any of their respective officers or directors or any of the members of the families of any of them; and (v) the Company has not offered, or caused any placement agent to offer, Common Stock to any person with the intent to influence unlawfully (A) a customer or supplier of the Company or any Subsidiary to alter the customer's or supplier's level or type of business with the Company or any Subsidiary or (B) a trade journalist or publication to write or publish favorable information about the Company or any Subsidiary or any of their respective products or services, and, (vi) neither the Company nor any Subsidiary nor, to the Company's knowledge, any employee or agent of the Company or any Subsidiary has made any payment of funds of the Company or any Subsidiary or received or retained any funds in violation of any law, rule or regulation (including, without limitation, the Foreign Corrupt Practices Act of 1977), which payment, receipt or retention of funds is of a character required to be disclosed in the Registration Statement or the Prospectus.

(rr) Status Under the Securities Act. The Company was not and is not an ineligible issuer as defined in Rule 405 under the Securities Act at the times specified in Rules 164 and 433 under the Securities Act in connection with the offering of the Placement Shares.

(ss) No Misstatement or Omission in an Issuer Free Writing Prospectus. Each Issuer Free Writing Prospectus, as of its issue date and as of each Applicable Time (as defined in Section 24 below), did not, does not and will not include any information that conflicted, conflicts or will conflict with the information contained in the Registration Statement or the Prospectus, including any Incorporated Document that has not been superseded or modified. The foregoing sentence does not apply to statements in or omissions from any Issuer Free Writing Prospectus based upon and in conformity with written information furnished to the Company by the Agent specifically for use therein.

(tt) No Conflicts. Neither the execution of this Agreement by the Company, nor the issuance, offering or sale of the Placement Shares, nor the consummation by the Company of any of the transactions contemplated herein and therein, nor the compliance by the Company with the terms and provisions hereof and thereof will conflict with, or will result in a breach of, any of the terms and provisions of, or has constituted or will constitute a default under, or has resulted in or will result in the creation or imposition of any lien, charge or encumbrance upon any property or assets of the Company pursuant to the terms of any contract or other agreement to which the Company may be bound or to which any of the property or assets of the Company is subject, except (i) such conflicts, breaches or defaults as may have been waived and (ii) such conflicts, breaches and defaults that would not have a Material Adverse Effect; nor will such action result (x) in any violation of the provisions of the organizational or governing documents of the Company, or (y) in any material violation of the provisions of any statute or any order, rule or regulation applicable to the Company or of any court or of any federal, state or other regulatory authority or other government body having jurisdiction over the Company.

(uu) Sanctions. (i) The Company represents that, neither the Company nor any of its Subsidiaries (collectively, the "**Entity**") or any director, officer, employee, agent, affiliate or representative of the Entity, is a government, individual, or entity (in this paragraph (uu), "**Person**") that is, or is owned or controlled by a Person that is:

(A) the subject of any sanctions administered or enforced by the U.S. Department of Treasury's Office of Foreign Assets Control, the United Nations Security Council, the European Union, Her Majesty's Treasury, or other relevant sanctions authority (collectively, "**Sanctions**"), nor

(B) located, organized or resident in a country or territory that is the subject of Sanctions (including, without limitation, the Crimean region, Cuba, Iran, North Korea, Sudan and Syria).

(ii) The Entity represents and covenants that it will not, directly or indirectly, use the proceeds of the offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other Person:

(A) to fund or facilitate any activities or business of or with any Person or in any country or territory that, at the time of such funding or facilitation, is the subject of Sanctions; or

(B) in any other manner that will result in a violation of Sanctions by any Person (including any Person participating in the offering, whether as underwriter, advisor, investor or otherwise).

(iii) The Entity represents and covenants that, except as detailed in the Registration Statement and the Prospectus, for the past 5 years, it has not knowingly engaged in, is not now knowingly engaged in, and will not engage in, any dealings or transactions with any Person, or in any country or territory, that at the time of the dealing or transaction is or was the subject of Sanctions.

(vv) Stock Transfer Taxes. On each Settlement Date, all stock transfer or other taxes (other than income taxes) which are required to be paid in connection with the sale and transfer of the Placement Shares to be sold hereunder will be, or will have been, fully paid or provided for by the Company and all laws imposing such taxes will be or will have been fully complied with.

(ww) Compliance with Laws. Each of the Company and its Subsidiaries: (A) is and at all times has been in compliance with all statutes, rules, or regulations applicable to the ownership, testing, development, manufacture, packaging, processing, use, distribution, marketing, labeling, promotion, sale, offer for sale, storage, import, export or disposal of any product manufactured or distributed by the Company or its Subsidiaries ("**Applicable Laws**"), except as could not, individually or in the aggregate, reasonably be expected to result in a Material Adverse Effect; (B) has not received any FDA Form 483, notice of adverse finding, warning letter, untitled letter or other correspondence or notice from the FDA or any other governmental authority alleging or asserting noncompliance with any Applicable Laws or any licenses, certificates, approvals, clearances, authorizations, permits and supplements or

amendments thereto required by any such Applicable Laws ("**Authorizations**"); (C) possesses all material Authorizations and such Authorizations are valid and in full force and effect and are not in material violation of any term of any such Authorizations; (D) has not received notice of any claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from any governmental authority or third party alleging that any product operation or activity is in violation of any Applicable Laws or Authorizations and has no knowledge that any such governmental authority or third party is considering any such claim, litigation, arbitration, action, suit, investigation or proceeding; (E) has not received notice that any governmental authority has taken, is taking or intends to take action to limit, suspend, modify or revoke any Authorizations and has no knowledge that any such governmental authority is considering such action; (F) has filed, obtained, maintained or submitted all material reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments as required by any Applicable Laws or Authorizations and that all such reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments were complete and correct on the date filed (or were corrected or supplemented by a subsequent submission); and (G) has not, either voluntarily or involuntarily, initiated, conducted, or issued or caused to be initiated, conducted or issued, any recall, market withdrawal or replacement, safety alert, post-sale warning, "dear doctor" letter, or other notice or action relating to the alleged lack of safety or efficacy of any product or any alleged product defect or violation and, to the Company's knowledge, no third party has initiated, conducted or intends to initiate any such notice or action. Without limiting the generality of the foregoing, neither the Company nor any of its Subsidiaries, nor any of their respective employees, officers, directors and agents, nor any of their respective business operations, is in violation of any applicable Health Care Laws, except where the failure to be in compliance would not, individually or in the aggregate, result in a Material Adverse Effect. For purposes of this Agreement, "**Health Care Laws**" means: (i) the Federal Food, Drug, and Cosmetic Act and the regulations promulgated thereunder, including the U.S. Prescription Drug Marketing Act of 1987, as amended, and the regulations promulgated thereunder; (ii) all federal, state, local and all foreign health care related fraud and abuse laws, including, without limitation, the U.S. Anti-Kickback Statute (42 U.S.C. Section 1320a-7b(b)), the U.S. Civil False Claims Act (31 U.S.C. Section 3729 et seq.), Sections 1320a-7 and 1320a-7a of Title 42 of the United States Code and the regulations promulgated pursuant to such statutes; (iii) any criminal laws relating to health care fraud and abuse, including but not limited to 18 U.S.C. Sections 286 and 287, and the health care fraud criminal provisions under the U.S. Health Insurance Portability and Accountability Act of 1996 ("**HIPAA**"); (iv) the Standards for Privacy of Individually Identifiable Health Information, the Security Standards, the Standards for Electronic Transactions and Code Sets promulgated under HIPAA (42 U.S.C. Section 1320d et seq.), the Health Information Technology for Economic and Clinical Health Act (42 U.S.C. Section 17921 et seq.), and the regulations promulgated thereunder and any state or non-U.S. counterpart thereof or other law or regulation the purpose of which is to protect the privacy of individuals or prescribers; (iv) the U.S. Controlled Substances Act; (v) any laws or regulations that govern participation in or coverage or reimbursement from any U.S. or state health care program, including but not limited to the federal TRICARE statute (10 U.S.C. §1071 et seq.), the Veterans Administration drug pricing program (38 U.S.C. Section 8126), and any regulations promulgated thereunder; (vi) quality, safety and accreditation standards and requirements of any applicable federal, state, local or foreign laws or regulatory bodies; and (vii) any and all other applicable health care laws and regulations in any jurisdiction, as well as contractual agreements mandated by such laws. Additionally, neither the Company nor any of its Subsidiaries, nor any of their

respective employees, officers, directors, agents or contractors has been excluded, suspended or debarred from participation in any federal health care program or, to the knowledge of Company and its Subsidiaries, is subject to an inquiry, investigation, proceeding, or other similar matter that could subject the Company, any of its Subsidiaries, or any of their respective employees, officers, directors, agents or contractors to exclusion, suspension or debarment.

Any certificate signed by an officer of the Company and delivered to the Agent or to counsel for the Agent pursuant to or in connection with this Agreement shall be deemed to be a representation and warranty by the Company, as applicable, to the Agent as to the matters set forth therein.

7. Covenants of the Company. The Company covenants and agrees with Agent that:

(a) Registration Statement Amendments. After the date of this Agreement and during any period in which a Prospectus relating to any Placement Shares is required to be delivered by Agent under the Securities Act (including in circumstances where such requirement may be satisfied pursuant to Rule 172 under the Securities Act), (i) the Company will notify the Agent promptly of the time when any subsequent amendment to the Registration Statement, other than documents incorporated by reference, has been filed with the Commission and/or has become effective or any subsequent supplement to the Prospectus has been filed and of any request by the Commission for any amendment or supplement to the Registration Statement or Prospectus or for additional information, (ii) the Company will prepare and file with the Commission, promptly upon the Agent's request, any amendments or supplements to the Registration Statement or Prospectus that, in such Agent's reasonable opinion, may be necessary or advisable in connection with the distribution of the Placement Shares by the Agent (provided, however, that the failure of the Agent to make such request shall not relieve the Company of any obligation or liability hereunder, or affect the Agent's right to rely on the representations and warranties made by the Company in this Agreement and provided, further, that the only remedy the Agent shall have with respect to the failure to make such filing shall be to cease making sales under this Agreement until such amendment or supplement is filed); (iii) the Company will not file any amendment or supplement to the Registration Statement or Prospectus relating to the Placement Shares or a security convertible into the Placement Shares unless a copy thereof has been submitted to Agent within a reasonable period of time before the filing and the Agent has not reasonably objected thereto (provided, however, that (A) the failure of the Agent to make such objection shall not relieve the Company of any obligation or liability hereunder, or affect the Agent's right to rely on the representations and warranties made by the Company in this Agreement and (B) the Company has no obligation to provide the Agent any advance copy of such filing or to provide the Agent an opportunity to object to such filing if such filing does not name the Agent or does not relate to the Placement Shares or to the transactions contemplated hereunder, provided, further, that the only remedy Agent shall have with respect to the failure by the Company to obtain such consent shall be to cease making sales under this Agreement) and the Company will furnish to the Agent at the time of filing thereof a copy of any document that upon filing is deemed to be incorporated by reference into the Registration Statement or Prospectus, except for those documents available via EDGAR; and (iv) the Company will cause each amendment or supplement to the Prospectus to be filed with the Commission as required pursuant to the applicable paragraph of Rule 424(b) of the Securities Act or, in the case of any document to be incorporated therein by reference, to be filed with the Commission as required

pursuant to the Exchange Act, within the time period prescribed (the determination to file or not file any amendment or supplement with the Commission under this Section 7(a), based on the Company's reasonable opinion or reasonable objections, shall be made exclusively by the Company).

(b) Notice of Commission Stop Orders. The Company will advise the Agent, promptly after it receives notice or obtains knowledge thereof, of the issuance or threatened issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement, of the suspension of the qualification of the Placement Shares for offering or sale in any jurisdiction, or of the initiation or threatening of any proceeding for any such purpose; and it will promptly use its commercially reasonable efforts to prevent the issuance of any stop order or to obtain its withdrawal if such a stop order should be issued. The Company will advise the Agent promptly after it receives any request by the Commission for any amendments to the Registration Statement or any amendment or supplements to the Prospectus or any Issuer Free Writing Prospectus or for additional information related to the offering of the Placement Shares or for additional information related to the Registration Statement, the Prospectus or any Issuer Free Writing Prospectus.

(c) Delivery of Prospectus; Subsequent Changes. During any period in which a Prospectus relating to the Placement Shares is required to be delivered by the Agent under the Securities Act with respect to the offer and sale of the Placement Shares, (including in circumstances where such requirement may be satisfied pursuant to Rule 172 under the Securities Act), the Company will comply with all requirements imposed upon it by the Securities Act, as from time to time in force, and to file on or before their respective due dates all reports and any definitive proxy or information statements required to be filed by the Company with the Commission pursuant to Sections 13(a), 13(c), 14, 15(d) or any other provision of or under the Exchange Act. If the Company has omitted any information from the Registration Statement pursuant to Rule 430B under the Securities Act, it will use its best efforts to comply with the provisions of and make all requisite filings with the Commission pursuant to said Rule 430B and to notify the Agent promptly of all such filings. If during such period any event occurs as a result of which the Prospectus as then amended or supplemented would include an untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances then existing, not misleading, or if during such period it is necessary to amend or supplement the Registration Statement or Prospectus to comply with the Securities Act, the Company will promptly notify Agent to suspend the offering of Placement Shares during such period and the Company will promptly amend or supplement the Registration Statement or Prospectus (at the expense of the Company) so as to correct such statement or omission or effect such compliance; *provided, however,* that the Company may delay any such amendment or supplement if, in the judgment of the Company, it is in the best interest of the Company to do so, provided that no Placement Notice is in effect during such time.

(d) Listing of Placement Shares. During any period in which the Prospectus relating to the Placement Shares is required to be delivered by the Agent under the Securities Act with respect to the offer and sale of the Placement Shares, the Company will use its commercially reasonable efforts to cause the Placement Shares to be listed on the Exchange.

(e) Delivery of Registration Statement and Prospectus. The Company will furnish to the Agent and its counsel (at the expense of the Company) copies of the Registration Statement, the Prospectus (including all Incorporated Documents) and all amendments and supplements to the Registration Statement or Prospectus that are filed with the Commission during any period in which a Prospectus relating to the Placement Shares is required to be delivered under the Securities Act (including all Incorporated Documents filed with the Commission during such period), in each case as soon as reasonably practicable and in such quantities as the Agent may from time to time reasonably request and, at the Agent's request, will also furnish copies of the Prospectus to each exchange or market on which sales of the Placement Shares may be made; provided, however, that the Company shall not be required to furnish any document (other than the Prospectus) to the Agent to the extent such document is available on EDGAR.

(f) Earnings Statement. The Company will make generally available to its security holders as soon as practicable, but in any event not later than 15 months after the end of the Company's current fiscal quarter, an earnings statement covering a 12-month period that satisfies the provisions of Section 11(a) and Rule 158 of the Securities Act.

(g) Use of Proceeds. The Company will use the Net Proceeds as described in the Prospectus in the section entitled "Use of Proceeds."

(h) Notice of Other Sales. Without the prior written consent of Agent, the Company will not, directly or indirectly, offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any Common Stock (other than the Placement Shares offered pursuant to this Agreement) or securities convertible into or exchangeable for Common Stock, warrants or any rights to purchase or acquire, Common Stock during the period beginning on the fifth (5th) Trading Day immediately prior to the date on which any Placement Notice is delivered to Agent hereunder and ending on the fifth (5th) Trading Day immediately following the final Settlement Date with respect to Placement Shares sold pursuant to such Placement Notice (or, if the Placement Notice has been terminated or suspended prior to the sale of all Placement Shares covered by a Placement Notice, the date of such suspension or termination); and will not directly or indirectly in any other "at-the-market" or continuous equity transaction offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any Common Stock (other than the Placement Shares offered pursuant to this Agreement) or securities convertible into or exchangeable for Common Stock, warrants or any rights to purchase or acquire, Common Stock prior to the later of the termination of this Agreement and the twentieth (20th) day immediately following the final Settlement Date with respect to Placement Shares sold pursuant to such Placement Notice; provided, however, that such restrictions will not be required in connection with the Company's issuance or sale of (i) Common Stock, options to purchase Common Stock, other equity awards to acquire Common Stock, or Common Stock issuable upon the exercise or vesting of options or other equity awards, pursuant to any employee or director equity awards or benefits plan, stock ownership plan or dividend reinvestment plan (but not Common Stock subject to a waiver to exceed plan limits in its dividend reinvestment plan) of the Company whether now in effect or hereafter implemented, (ii) Common Stock issuable upon conversion of securities or the exercise or vesting of warrants, options or other rights in effect or outstanding, and disclosed in filings by the Company available on EDGAR or otherwise in writing to the Agent, (iii) Common Stock or securities convertible into or exchangeable for shares of Common

Stock as consideration for mergers, acquisitions, other business combinations or strategic alliances, or offered and sold in a privately negotiated transaction to vendors, customers, lenders, investors, strategic partners or potential strategic partners, occurring after the date of this Agreement which are not issued primarily for capital raising purposes and (iv) Common Stock offered and sold through the Agent pursuant to a sales agreement substantially similar to this Agreement.

(i) Change of Circumstances. The Company will, at any time during the pendency of a Placement Notice, advise the Agent promptly after it shall have received notice or obtained knowledge thereof, of any information or fact that would alter or affect in any material respect any opinion, certificate, letter or other document required to be provided to the Agent pursuant to this Agreement.

(j) Due Diligence Cooperation. The Company will cooperate with any reasonable due diligence review conducted by the Agent or its representatives in connection with the transactions contemplated hereby, including, without limitation, providing information and making available documents and senior corporate officers, during regular business hours and at the Company's principal offices, as the Agent may reasonably request.

(k) Required Filings Relating to Placement of Placement Shares. The Company agrees that on such dates, and to the extent, as the Securities Act shall require, the Company will (i) file a prospectus supplement with the Commission under the applicable paragraph of Rule 424(b) under the Securities Act (each and every filing date under Rule 424(b), a "**Filing Date**"), which prospectus supplement will set forth, within the relevant period, the amount of Placement Shares sold through the Agent, the Net Proceeds to the Company and the compensation payable by the Company to the Agent with respect to such Placement Shares, and (ii) deliver such number of copies of each such prospectus supplement to each exchange or market on which such sales were effected as may be required by the rules or regulations of such exchange or market.

(l) Representation Dates; Certificate. (1) Prior to the date of the first Placement Notice and (2) each time the Company:

(i) amends or supplements (other than a prospectus supplement relating solely to an offering of securities other than the Placement Shares) the Registration Statement or the Prospectus relating to the Placement Shares by means of a post-effective amendment, sticker, or supplement but not by means of incorporation of documents by reference into the Registration Statement or the Prospectus relating to the Placement Shares;

(ii) files an annual report on Form 10-K under the Exchange Act (including any Form 10-K/A containing amended financial statements or a material amendment to the previously filed Form 10-K);

(iii) files its quarterly reports on Form 10-Q under the Exchange Act; or

(iv) files a current report on Form 8-K containing amended financial information (other than information "furnished" pursuant to Items 2.02 or 7.01 of Form 8-K or to provide disclosure pursuant to Item 8.01 of Form 8-K relating to the reclassification of certain properties as discontinued operations in accordance with Statement of Financial Accounting Standards No. 144) under the Exchange Act (each date of filing of one or more of the documents referred to in clauses (i) through (iv) shall be a "**Representation Date**");

the Company shall furnish the Agent (but in the case of clauses (ii) and (iii) above only if requested by the Agent, and in the case of clause (iv) above only if the Agent reasonably determines that the information contained in such Form 8-K is material) with a certificate dated the Representation Date, in the form attached hereto as Exhibit 7(l). The requirement to provide a certificate under this Section 7(l) shall be waived for any Representation Date occurring at a time no Placement Notice is pending or a Suspension is in effect, which waiver shall continue until the earlier to occur of the date the Company delivers instructions for the sale of Placement Shares hereunder (which for such calendar quarter shall be considered a Representation Date) and the next occurring Representation Date. Notwithstanding the foregoing, if the Company subsequently decides to sell Placement Shares following a Representation Date when the Company relied on such waiver and did not provide the Agent with a certificate under this Section 7(l), then before the Company delivers the instructions for the sale of Placement Shares or the Agent sells any Placement Shares pursuant to such instructions, the Company shall provide the Agent with a certificate in conformity with this Section 7(l) dated as of the date that the instructions for the sale of Placement Shares are issued.

(m) Legal Opinions. (1) Prior to the date of the first Placement Notice and (2) within five (5) Trading Days of each Representation Date with respect to which the Company is obligated to deliver a certificate in the form attached hereto as Exhibit 7(l) for which no waiver is applicable and excluding the date of this Agreement, the Company shall cause to be furnished to the Agent (A) a written opinion and negative assurance letter of Ropes & Gray LLP ("**Company Counsel**"), or other counsel satisfactory to the Agent and (B) a written opinion of McCarter & English LLP ("**IP Counsel**"), or other counsel satisfactory to the Agent, in each case in form and substance satisfactory to Agent and its counsel, in each case substantially similar to the form previously agreed to with counsel to the Agent, respectively, modified, as necessary, to relate to the Registration Statement and the Prospectus as then amended or supplemented; provided, however, the Company shall be required to furnish to Agent no more than one opinion and negative assurance letter from Company Counsel and one opinion from IP Counsel hereunder per calendar quarter; provided, further, that in lieu of such opinions for subsequent periodic filings under the Exchange Act, counsel may furnish the Agent with a letter (a "**Reliance Letter**") to the effect that the Agent may rely on a prior opinion delivered under this Section 7(m) to the same extent as if it were dated the date of such letter (except that statements in such prior opinion shall be deemed to relate to the Registration Statement and the Prospectus as amended or supplemented as of the date of the Reliance Letter).

(n) Comfort Letter. (1) Prior to the date of the first Placement Notice and (2) within five (5) Trading Days of each Representation Date with respect to which the Company is obligated to deliver a certificate in the form attached hereto as Exhibit 7(l) for which no waiver is applicable and excluding the date of this Agreement, the Company shall cause its independent registered public accounting firm to furnish the Agent letters (the "**Comfort Letters**"), dated the date the Comfort Letter is delivered, which shall meet the requirements set forth in this Section 7(n); provided, that if requested by the Agent, the Company shall cause a Comfort Letter to be furnished to the Agent within ten (10) Trading Days of the date of occurrence of any material transaction or event requiring the filing of a Current Report on Form 8-K containing material financial information, including the restatement of the Company's financial statements. The Comfort Letter from the Company's independent registered public accounting firm shall be in a form and substance reasonably satisfactory to the Agent, (i) confirming that they are an independent registered public accounting firm within the meaning of the Securities Act and the PCAOB, (ii) stating, as of such date, the conclusions and findings of such firm with respect to the financial information and other matters ordinarily covered by accountants' "comfort letters" to underwriters in connection with registered public offerings (the first such letter, the "**Initial Comfort Letter**") and (iii) updating the Initial Comfort Letter with any information that would have been included in the Initial Comfort Letter had it been given on such date and modified as necessary to relate to the Registration Statement and the Prospectus, as amended and supplemented to the date of such letter.

(o) Market Activities. The Company will not, directly or indirectly, (i) take any action designed to cause or result in, or that constitutes or might reasonably be expected to constitute, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of Common Stock or (ii) sell, bid for, or purchase Common Stock, or pay anyone any compensation for soliciting purchases of the Placement Shares other than the Agent. Nothing to the contrary in this Agreement shall prohibit the Company, at any time at which a Placement Notice is not in effect, from engaging in sales of its securities, including Common Stock, through public offerings, private placements or otherwise, including through other underwriters or placement agents.

(p) Investment Company Act. The Company will conduct its affairs in such a manner so as to reasonably ensure that neither it nor any of its Subsidiaries will be or become, at any time prior to the termination of this Agreement, required to register as an "investment company," as such term is defined in the Investment Company Act.

(q) No Offer to Sell. Other than an Issuer Free Writing Prospectus approved in advance by the Company and the Agent in its capacity as agent hereunder, neither the Agent nor the Company (including its agents and representatives, other than the Agent in its capacity as such) will make, use, prepare, authorize, approve or refer to any written communication (as defined in Rule 405 under the Securities Act), required to be filed with the Commission, that constitutes an offer to sell or solicitation of an offer to buy Placement Shares hereunder.

(r) Blue Sky and Other Qualifications. The Company will use its commercially reasonable efforts, in cooperation with the Agent, to qualify the Placement Shares for offering and sale, or to obtain an exemption for the Placement Shares to be offered and sold, under the applicable securities laws of such states and other jurisdictions (domestic or foreign) as the Agent may designate and to maintain such qualifications and exemptions in effect for so long as required for the distribution of the Placement Shares; *provided*, *however*, that the Company shall not be obligated to file any general consent to service of process or to qualify as a foreign corporation or as a dealer in securities in any jurisdiction in which it is not so qualified or to subject itself to taxation in respect of doing business in any jurisdiction in which it is not otherwise so subject. In each jurisdiction in which the Placement Shares have been so qualified or exempt, the Company will file such statements and reports as may be required by the laws of such jurisdiction to continue such qualification or exemption, as the case may be, in effect for so long as required for the distribution of the Placement Shares.

(s) Sarbanes-Oxley Act. The Company and the Subsidiaries will maintain and keep accurate books and records reflecting their assets and maintain internal accounting controls in a manner designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles and including those policies and procedures that (i) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the Company, (ii) provide reasonable assurance that transactions are recorded as necessary to permit the preparation of the Company's consolidated financial statements in accordance with generally accepted accounting principles, (iii) that receipts and expenditures of the Company are being made only in accordance with management's and the Company's directors' authorization, and (iv) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on its financial statements. The Company and the Subsidiaries will maintain such controls and other procedures, including, without limitation, those required by Sections 302 and 906 of the Sarbanes-Oxley Act, and the applicable regulations thereunder that are designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Commission's rules and forms, including, without limitation, controls and procedures designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the Company's management, including its principal executive officer and principal financial officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure and to ensure that material information relating to the Company or the Subsidiaries is made known to them by others within those entities, particularly during the period in which such periodic reports are being prepared.

(t) Secretary's Certificate; Further Documentation. Prior to the date of the first Placement Notice, the Company shall deliver to the Agent a certificate of the Secretary of the Company and attested to by an executive officer of the Company, dated as of such date, certifying as to (i) the Certificate of Incorporation of the Company, (ii) the By-laws of the Company, (iii) the resolutions of the Board of Directors of the Company authorizing the execution, delivery and performance of this Agreement and the issuance of the Placement Shares

and (iv) the incumbency of the officers duly authorized to execute this Agreement and the other documents contemplated by this Agreement. Within five (5) Trading Days of each Representation Date, the Company shall have furnished to the Agent such further information, certificates and documents as the Agent may reasonably request.

8. Payment of Expenses. The Company will pay all expenses incident to the performance of its obligations under this Agreement, including (i) the preparation and filing of the Registration Statement, including any fees required by the Commission, and the printing or electronic delivery of the Prospectus as originally filed and of each amendment and supplement thereto, in such number as the Agent shall reasonably deem necessary, (ii) the printing and delivery to the Agent of this Agreement and such other documents as may be required in connection with the offering, purchase, sale, issuance or delivery of the Placement Shares, (iii) the preparation, issuance and delivery of the certificates, if any, for the Placement Shares to the Agent, including any stock or other transfer taxes and any capital duties, stamp duties or other duties or taxes payable upon the sale, issuance or delivery of the Placement Shares to the Agent, (iv) the fees and disbursements of the counsel, accountants and other advisors to the Company, (v) the out-of-pocket expenses of the Agent (including, without limitation, the fees and disbursements of the counsel to the Agent), payable upon the execution of this Agreement, in an amount not to exceed $50,000; (vi) the qualification or exemption of the Placement Shares under state securities laws in accordance with the provisions of Section 7(r) hereof, including filing fees but excluding the fees of the Agent's counsel, (vii) the printing and delivery to the Agent of copies of any Permitted Issuer Free Writing Prospectus and the Prospectus and any amendments or supplements thereto in such number as the Agent shall deem necessary, (viii) the preparation, printing and delivery to the Agent of copies of the blue sky survey, (ix) the fees and expenses of the transfer agent and registrar for the Common Stock, (x) the filing and other fees incident to any review by FINRA of the terms of the sale of the Placement Shares including the fees of the Agent's counsel (subject to the cap, set forth in clause (v) above), and (xi) the fees and expenses incurred in connection with the listing of the Placement Shares on the Exchange.

9. Conditions to Agent's Obligations. The obligations of the Agent hereunder with respect to a Placement will be subject to the continuing accuracy and completeness of the representations and warranties made by the Company herein, to the due performance by the Company of its obligations hereunder, to the completion by the Agent of a due diligence review satisfactory to it in its reasonable judgment, and to the continuing satisfaction (or waiver by the Agent in its sole discretion) of the following additional conditions:

(a) Registration Statement Effective. The Registration Statement shall have become effective and shall be available for the (i) resale of all Placement Shares issued to the Agent and not yet sold by the Agent and (ii) sale of all Placement Shares contemplated to be issued by any Placement Notice.

(b) No Material Notices. None of the following events shall have occurred and be continuing: (i) receipt by the Company of any request for additional information from the Commission or any other federal or state governmental authority during the period of effectiveness of the Registration Statement, the response to which would require any post-effective amendments or supplements to the Registration Statement or the Prospectus; (ii) the issuance by the Commission or any other federal or state governmental authority of any stop order suspending the effectiveness of the Registration Statement or the initiation of any

proceedings for that purpose; (iii) receipt by the Company of any notification with respect to the suspension of the qualification or exemption from qualification of any of the Placement Shares for sale in any jurisdiction or the initiation or threatening of any proceeding for such purpose; or (iv) the occurrence of any event that makes any material statement made in the Registration Statement or the Prospectus or any material document incorporated or deemed to be incorporated therein by reference untrue in any material respect or that requires the making of any changes in the Registration Statement, the Prospectus or documents so that, in the case of the Registration Statement, it will not contain any materially untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein not misleading and, that in the case of the Prospectus, it will not contain any materially untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(c) No Misstatement or Material Omission. The Agent shall not have advised the Company that the Registration Statement or Prospectus, or any amendment or supplement thereto, contains an untrue statement of fact that in the Agent's reasonable opinion is material, or omits to state a fact that in the Agent's reasonable opinion is material and is required to be stated therein or is necessary to make the statements therein not misleading.

(d) Material Changes. Except as contemplated in the Prospectus, or disclosed in the Company's reports filed with the Commission, there shall not have been any material adverse change in the authorized capital stock of the Company or any Material Adverse Effect or any development that could reasonably be expected to cause a Material Adverse Effect, or a downgrading in or withdrawal of the rating assigned to any of the Company's securities (other than asset backed securities) by any rating organization or a public announcement by any rating organization that it has under surveillance or review its rating of any of the Company's securities (other than asset backed securities), the effect of which, in the case of any such action by a rating organization described above, in the reasonable judgment of the Agent (without relieving the Company of any obligation or liability it may otherwise have), is so material as to make it impracticable or inadvisable to proceed with the offering of the Placement Shares on the terms and in the manner contemplated in the Prospectus.

(e) Legal Opinion. The Agent shall have received the opinion and negative assurance letter of Company Counsel and the opinion of IP Counsel required to be delivered pursuant to Section 7(m) on or before the date on which such delivery of such opinions and negative assurance letter is required pursuant to Section 7(m).

(f) Comfort Letter. The Agent shall have received the Comfort Letter required to be delivered pursuant to Section 7(n) on or before the date on which such delivery of such Comfort Letter is required pursuant to Section 7(n).

(g) Representation Certificate. The Agent shall have received the certificate required to be delivered pursuant to Section 7(l) on or before the date on which delivery of such certificate is required pursuant to Section 7(l).

(h) No Suspension. Trading in the Common Stock shall not have been suspended on the Exchange and the Common Stock shall not have been delisted from the Exchange.

(i) Other Materials. On each date on which the Company is required to deliver a certificate pursuant to Section 7(l), the Company shall have furnished to the Agent such appropriate further information, certificates, letters and other documents as the Agent may reasonably request. All such certificates, letters and other documents will be in compliance with the provisions hereof.

(j) Securities Act Filings Made. All filings with the Commission required by Rule 424 under the Securities Act to have been filed prior to the issuance of any Placement Notice hereunder shall have been made within the applicable time period prescribed for such filing by Rule 424.

(k) Approval for Listing. The Placement Shares shall either have been approved for listing on the Exchange, subject only to notice of issuance, or the Company shall have filed an application for listing of the Placement Shares on the Exchange at, or prior to, the issuance of any Placement Notice and the Exchange shall have reviewed such application and not provided any objections thereto.

(l) FINRA. FINRA shall have raised no objection to the terms of this offering and the amount of compensation allowable or payable to the Agent as described in the Prospectus.

(m) No Termination Event. There shall not have occurred any event that would permit the Agent to terminate this Agreement pursuant to Section 12(a).

10. Indemnification and Contribution.

(a) Company Indemnification. The Company agrees to indemnify and hold harmless the Agent, its partners, members, directors, officers, employees and agents and each person, if any, who controls the Agent within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act as follows:

(i) against any and all loss, liability, claim, damage and expense whatsoever, as incurred, joint or several, arising out of or based upon any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement (or any amendment thereto), or the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein not misleading, or arising out of any untrue statement or alleged untrue statement of a material fact included in any related Issuer Free Writing Prospectus or the Prospectus (or any amendment or supplement thereto), or the omission or alleged omission therefrom of a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading;

(ii) against any and all loss, liability, claim, damage and expense whatsoever, as incurred, joint or several, to the extent of the aggregate amount paid in settlement of any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or of any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission; provided that any such settlement is effected with the written consent of the Company, which consent shall not unreasonably be delayed or withheld; and

(iii) against any and all expense whatsoever, as incurred (including the fees and disbursements of counsel), reasonably incurred in investigating, preparing or defending against any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission, to the extent that any such expense is not paid under (i) or (ii) above,

provided, however, that this indemnity agreement shall not apply to any loss, liability, claim, damage or expense to the extent arising out of any untrue statement or omission or alleged untrue statement or omission made solely in reliance upon and in conformity with written information furnished to the Company by the Agent expressly for use in the Registration Statement (or any amendment thereto), or in any related Issuer Free Writing Prospectus or the Prospectus (or any amendment or supplement thereto).

(b) Agent Indemnification. Agent agrees to indemnify and hold harmless the Company and its directors and each officer and director of the Company who signed the Registration Statement, and each person, if any, who controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act against any and all loss, liability, claim, damage and expense described in the indemnity contained in Section 10(a), as incurred, but only with respect to untrue statements or omissions, or alleged untrue statements or omissions, made in the Registration Statement (or any amendments thereto) or the Prospectus (or any amendment or supplement thereto) in reliance upon and in conformity with information furnished to the Company in writing by the Agent expressly for use therein. The Company hereby acknowledges that the only information that the Agent has furnished to the Company expressly for use in the Registration Statement, the Prospectus or any Issuer Free Writing Prospectus (or any amendment or supplement thereto) are the statements set forth in the last three sentences of the second paragraph under the caption “Plan of Distribution” in the Prospectus.

(c) Procedure. Any party that proposes to assert the right to be indemnified under this Section 10 will, promptly after receipt of notice of commencement of any action against such party in respect of which a claim is to be made against an indemnifying party or parties under this Section 10, notify each such indemnifying party of the commencement of such action, enclosing a copy of all papers served, but the omission so to notify such indemnifying party will not relieve the indemnifying party from (i) any liability that it might have to any indemnified party otherwise than under this Section 10 and (ii) any liability that it may have to any indemnified party under the foregoing provision of this Section 10 unless, and only to the extent that, such omission results in the forfeiture of substantive rights or defenses by the indemnifying party. If any such action is brought against any indemnified party and it notifies the indemnifying party of its commencement, the indemnifying party will be entitled to

participate in and, to the extent that it elects by delivering written notice to the indemnified party promptly after receiving notice of the commencement of the action from the indemnified party, jointly with any other indemnifying party similarly notified, to assume the defense of the action, with counsel reasonably satisfactory to the indemnified party, and after notice from the indemnifying party to the indemnified party of its election to assume the defense, the indemnifying party will not be liable to the indemnified party for any legal or other expenses except as provided below and except for the reasonable costs of investigation subsequently incurred by the indemnified party in connection with the defense. The indemnified party will have the right to employ its own counsel in any such action, but the fees, expenses and other charges of such counsel will be at the expense of such indemnified party unless (1) the employment of counsel by the indemnified party has been authorized in writing by the indemnifying party, (2) the indemnified party has reasonably concluded (based on advice of counsel) that there may be legal defenses available to it or other indemnified parties that are different from or in addition to those available to the indemnifying party, (3) a conflict or potential conflict exists (based on advice of counsel to the indemnified party) between the indemnified party and the indemnifying party (in which case the indemnifying party will not have the right to direct the defense of such action on behalf of the indemnified party) or (4) the indemnifying party has not in fact employed counsel to assume the defense of such action within a reasonable time after receiving notice of the commencement of the action, in each of which cases the reasonable fees, disbursements and other charges of counsel will be at the expense of the indemnifying party or parties. It is understood that the indemnifying party or parties shall not, in connection with any proceeding or related proceedings in the same jurisdiction, be liable for the reasonable fees, disbursements and other charges of more than one separate firm admitted to practice in such jurisdiction at any one time for all such indemnified party or parties. All such fees, disbursements and other charges will be reimbursed by the indemnifying party promptly after the indemnifying party receives a written invoice relating to the fees, disbursements and other charges in reasonable detail. An indemnifying party will not, in any event, be liable for any settlement of any action or claim effected without its written consent. No indemnifying party shall, without the prior written consent of each indemnified party, settle or compromise or consent to the entry of any judgment in any pending or threatened claim, action or proceeding relating to the matters contemplated by this Section 10 (whether or not any indemnified party is a party thereto), unless such settlement, compromise or consent (1) includes an unconditional release of each indemnified party from all liability arising out of such litigation, investigation, proceeding or claim and (2) does not include a statement as to or an admission of fault, culpability or a failure to act by or on behalf of any indemnified party.

(d) Contribution. In order to provide for just and equitable contribution in circumstances in which the indemnification provided for in the foregoing paragraphs of this Section 10 is applicable in accordance with its terms but for any reason is held to be unavailable from the Company or the Agent, the Company and the Agent will contribute to the total losses, claims, liabilities, expenses and damages (including any investigative, legal and other expenses reasonably incurred in connection with, and any amount paid in settlement of, any action, suit or proceeding or any claim asserted, but after deducting any contribution received by the Company from persons other than the Agent, such as persons who control the Company within the meaning of the Securities Act, officers of the Company who signed the Registration Statement and directors of the Company, who also may be liable for contribution) to which the Company and the Agent may be subject in such proportion as shall be appropriate to reflect the relative

benefits received by the Company on the one hand and the Agent on the other hand. The relative benefits received by the Company on the one hand and the Agent on the other hand shall be deemed to be in the same proportion as the total Net Proceeds from the sale of the Placement Shares (before deducting expenses) received by the Company bear to the total compensation received by the Agent (before deducting expenses) from the sale of Placement Shares on behalf of the Company. If, but only if, the allocation provided by the foregoing sentence is not permitted by applicable law, the allocation of contribution shall be made in such proportion as is appropriate to reflect not only the relative benefits referred to in the foregoing sentence but also the relative fault of the Company, on the one hand, and the Agent, on the other hand, with respect to the statements or omission that resulted in such loss, claim, liability, expense or damage, or action in respect thereof, as well as any other relevant equitable considerations with respect to such offering. Such relative fault shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact relates to information supplied by the Company or the Agent, the intent of the parties and their relative knowledge, access to information and opportunity to correct or prevent such statement or omission. The Company and the Agent agree that it would not be just and equitable if contributions pursuant to this Section 10(d) were to be determined by pro rata allocation or by any other method of allocation that does not take into account the equitable considerations referred to herein. The amount paid or payable by an indemnified party as a result of the loss, claim, liability, expense, or damage, or action in respect thereof, referred to above in this Section 10(d) shall be deemed to include, for the purpose of this Section 10(d), any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending any such action or claim to the extent consistent with Section 10(c) hereof. Notwithstanding the foregoing provisions of this Section 10(d), the Agent shall not be required to contribute any amount in excess of the commissions received by it under this Agreement and no person found guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) will be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. For purposes of this Section 10(d), any person who controls a party to this Agreement within the meaning of the Securities Act, and any officers, directors, partners, employees or agents of the Agent, will have the same rights to contribution as that party, and each officer and director of the Company who signed the Registration Statement will have the same rights to contribution as the Company, subject in each case to the provisions hereof. Any party entitled to contribution, promptly after receipt of notice of commencement of any action against such party in respect of which a claim for contribution may be made under this Section 10(d), will notify any such party or parties from whom contribution may be sought, but the omission to so notify will not relieve that party or parties from whom contribution may be sought from any other obligation it or they may have under this Section 10(d) except to the extent that the failure to so notify such other party materially prejudiced the substantive rights or defenses of the party from whom contribution is sought. Except for a settlement entered into pursuant to the last sentence of Section 10(c) hereof, no party will be liable for contribution with respect to any action or claim settled without its written consent if such consent is required pursuant to Section 10(c) hereof.

11. Representations and Agreements to Survive Delivery. The indemnity and contribution agreements contained in Section 10 of this Agreement and all representations and warranties of the Company herein or in certificates delivered pursuant hereto shall survive, as of their respective dates, regardless of (i) any investigation made by or on behalf of the Agent, any controlling persons, or the Company (or any of their respective officers, directors or controlling persons), (ii) delivery and acceptance of the Placement Shares and payment therefor or (iii) any termination of this Agreement.

12. Termination.

(a) The Agent may terminate this Agreement, by notice to the Company, as hereinafter specified at any time (1) if there has been, since the time of execution of this Agreement or since the date as of which information is given in the Prospectus, any change, or any development or event involving a prospective change, in the condition, financial or otherwise, or in the business, properties, earnings, results of operations or prospects of the Company and its Subsidiaries considered as one enterprise, whether or not arising in the ordinary course of business, which individually or in the aggregate, in the sole judgment of the Agent is material and adverse and makes it impractical or inadvisable to market the Placement Shares or to enforce contracts for the sale of the Placement Shares, (2) if there has occurred any material adverse change in the financial markets in the United States or the international financial markets, any outbreak of hostilities or escalation thereof or other calamity or crisis or any change or development involving a prospective change in national or international political, financial or economic conditions, in each case the effect of which is such as to make it, in the judgment of the Agent, impracticable or inadvisable to market the Placement Shares or to enforce contracts for the sale of the Placement Shares, (3) if trading in the Common Stock has been suspended or limited by the Commission or the Exchange, or if trading generally on the Exchange has been suspended or limited, or minimum prices for trading have been fixed on the Exchange, (4) if any suspension of trading of any securities of the Company on any exchange or in the over-the-counter market shall have occurred and be continuing, (5) if a major disruption of securities settlements or clearance services in the United States shall have occurred and be continuing, or (6) if a banking moratorium has been declared by either U.S. Federal or New York authorities. Any such termination shall be without liability of any party to any other party except that the provisions of Section 8 (Payment of Expenses), Section 10 (Indemnification and Contribution), Section 11 (Representations and Agreements to Survive Delivery), Section 17 (Governing Law and Time; Waiver of Jury Trial) and Section 18 (Consent to Jurisdiction) hereof shall remain in full force and effect notwithstanding such termination. If the Agent elects to terminate this Agreement as provided in this Section 12(a), the Agent shall provide the required notice as specified in Section 13 (Notices).

(b) The Company shall have the right, by giving ten (10) days' notice as hereinafter specified to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 8, Section 10, Section 11, Section 17 and Section 18 hereof shall remain in full force and effect notwithstanding such termination.

(c) The Agent shall have the right, by giving ten (10) days' notice as hereinafter specified to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 8, Section 10, Section 11, Section 17 and Section 18 hereof shall remain in full force and effect notwithstanding such termination.

(d) Unless earlier terminated pursuant to this Section 12, this Agreement shall automatically terminate upon the issuance and sale of all of the Placement Shares through the Agent on the terms and subject to the conditions set forth herein; provided that the provisions of Section 8, Section 10, Section 11, Section 17 and Section 18 hereof shall remain in full force and effect notwithstanding such termination.

(e) This Agreement shall remain in full force and effect unless terminated pursuant to Sections 12(a), (b), (c), or (d) above or otherwise by mutual agreement of the parties; provided, however, that any such termination by mutual agreement shall in all cases be deemed to provide that Section 8, Section 10, Section 11, Section 17 and Section 18 shall remain in full force and effect.

(f) Any termination of this Agreement shall be effective on the date specified in such notice of termination; provided, however, that such termination shall not be effective until the close of business on the date of receipt of such notice by the Agent or the Company, as the case may be. If such termination shall occur prior to the Settlement Date for any sale of Placement Shares, such Placement Shares shall settle in accordance with the provisions of this Agreement.

13. Notices. All notices or other communications required or permitted to be given by any party to any other party pursuant to the terms of this Agreement shall be in writing, unless otherwise specified, and if sent to the Agent, shall be delivered to:

Cantor Fitzgerald & Co.
499 Park Avenue
New York, NY 10022
Attention: Capital Markets
Facsimile: (212) 307-3730

with copies to

Cantor Fitzgerald & Co.
499 Park Avenue
New York, NY 10022
Attention: General Counsel
Facsimile: (212) 307-3730

and with a copy to:

Latham & Watkins LLP
12670 High Bluff Drive
San Diego, CA 92130
Attention: Cheston J. Larson, Esq.
Facsimile: (858) 523-5450

and if to the Company, shall be delivered to:

Paratek Pharmaceuticals, Inc.
75 Park Plaza
Boston, Massachusetts 02116
Attention: General Counsel
Facsimile: (617) 275-0039

with a copy to:

Ropes & Gray LLP
Prudential Tower
800 Boylston Street
Boston, MA 02199
Attention: Chris Comeau
Facsimile: (617) 951-7000

Each party to this Agreement may change such address for notices by sending to the parties to this Agreement written notice of a new address for such purpose. Each such notice or other communication shall be deemed given (i) when delivered personally or by verifiable facsimile transmission (with an original to follow) on or before 4:30 p.m., New York City time, on a Business Day or, if such day is not a Business Day, on the next succeeding Business Day, (ii) by Electronic Notice as set forth in the next paragraph, (iii) on the next Business Day after timely delivery to a nationally-recognized overnight courier and (iv) on the Business Day actually received if deposited in the U.S. mail (certified or registered mail, return receipt requested, postage prepaid). For purposes of this Agreement, "**Business Day**" shall mean any day on which the Exchange and commercial banks in the City of New York are open for business.

An electronic communication ("**Electronic Notice**") shall be deemed written notice for purposes of this Section 13 if sent to the electronic mail address specified by the receiving party under separate cover. Electronic Notice shall be deemed received at the time the party sending Electronic Notice receives verification of receipt by the receiving party. Any party receiving Electronic Notice may request and shall be entitled to receive the notice on paper, in a nonelectronic form ("**Nonelectronic Notice**") which shall be sent to the requesting party within ten (10) days of receipt of the written request for Nonelectronic Notice.

14. Successors and Assigns. This Agreement shall inure to the benefit of and be binding upon the Company and the Agent and their respective successors and the affiliates, controlling persons, officers and directors referred to in Section 10 hereof. References to any of the parties contained in this Agreement shall be deemed to include the successors and permitted assigns of such party. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and permitted assigns any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement. Neither party may assign its rights or obligations under this Agreement without the prior written consent of the other party; provided, however, that the Agent may assign its rights and obligations hereunder to an affiliate thereof without obtaining the Company's consent.

15. Adjustments for Stock Splits. The parties acknowledge and agree that all share-related numbers contained in this Agreement shall be adjusted to take into account any stock split, stock dividend or similar event effected with respect to the Placement Shares.

16. Entire Agreement; Amendment; Severability; Waiver. This Agreement (including all schedules and exhibits attached hereto and Placement Notices issued pursuant hereto) constitutes the entire agreement and supersedes all other prior and contemporaneous agreements and undertakings, both written and oral, among the parties hereto with regard to the subject matter hereof. Neither this Agreement nor any term hereof may be amended except pursuant to a written instrument executed by the Company and the Agent. In the event that any one or more of the provisions contained herein, or the application thereof in any circumstance, is held invalid, illegal or unenforceable as written by a court of competent jurisdiction, then such provision shall be given full force and effect to the fullest possible extent that it is valid, legal and enforceable, and the remainder of the terms and provisions herein shall be construed as if such invalid, illegal or unenforceable term or provision was not contained herein, but only to the extent that giving effect to such provision and the remainder of the terms and provisions hereof shall be in accordance with the intent of the parties as reflected in this Agreement. No implied waiver by a party shall arise in the absence of a waiver in writing signed by such party. No failure or delay in exercising any right, power, or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any right, power, or privilege hereunder.

17. GOVERNING LAW AND TIME; WAIVER OF JURY TRIAL. THIS AGREEMENT SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK WITHOUT REGARD TO THE PRINCIPLES OF CONFLICTS OF LAWS. SPECIFIED TIMES OF DAY REFER TO NEW YORK CITY TIME. EACH PARTY HERETO HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY.

18. **CONSENT TO JURISDICTION. EACH PARTY HEREBY IRREVOCABLY SUBMITS TO THE NON-EXCLUSIVE JURISDICTION OF THE STATE AND FEDERAL COURTS SITTING IN THE CITY OF NEW YORK, BOROUGH OF MANHATTAN, FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION WITH ANY TRANSACTION CONTEMPLATED HEREBY, AND HEREBY IRREVOCABLY WAIVES, AND AGREES NOT TO ASSERT IN ANY SUIT, ACTION OR PROCEEDING, ANY CLAIM THAT IT IS NOT PERSONALLY SUBJECT TO THE JURISDICTION OF ANY SUCH COURT, THAT SUCH SUIT, ACTION OR PROCEEDING IS BROUGHT IN AN INCONVENIENT FORUM OR THAT THE VENUE OF SUCH SUIT, ACTION OR PROCEEDING IS IMPROPER. EACH PARTY HEREBY IRREVOCABLY WAIVES PERSONAL SERVICE OF PROCESS AND CONSENTS TO PROCESS BEING SERVED IN ANY SUCH SUIT, ACTION OR PROCEEDING BY MAILING A COPY THEREOF (CERTIFIED OR REGISTERED MAIL, RETURN RECEIPT REQUESTED) TO SUCH PARTY AT THE ADDRESS IN EFFECT FOR NOTICES TO IT UNDER THIS**

AGREEMENT AND AGREES THAT SUCH SERVICE SHALL CONSTITUTE GOOD AND SUFFICIENT SERVICE OF PROCESS AND NOTICE THEREOF. NOTHING CONTAINED HEREIN SHALL BE DEEMED TO LIMIT IN ANY WAY ANY RIGHT TO SERVE PROCESS IN ANY MANNER PERMITTED BY LAW.

19. Use of Information. The Agent may not provide any information gained in connection with this Agreement and the transactions contemplated by this Agreement, including due diligence, to any third party other than its legal counsel advising it on this Agreement unless expressly approved by the Company in writing.

20. Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Delivery of an executed Agreement by one party to the other may be made by facsimile transmission.

21. Construction. The section and exhibit headings herein are for convenience only and shall not affect the construction hereof. References herein to any law, statute, ordinance, code, regulation, rule or other requirement of any Governmental Authority shall be deemed to refer to such law, statute, ordinance, code, regulation, rule or other requirement of any Governmental Authority as amended, reenacted, supplemented or superseded in whole or in part and in effect from time to time and also to all rules and regulations promulgated thereunder.

22. Permitted Free Writing Prospectuses.

The Company represents, warrants and agrees that, unless it obtains the prior consent of the Agent, and the Agent represents, warrants and agrees that, unless it obtains the prior consent of the Company, it has not made and will not make any offer relating to the Placement Shares that would constitute an Issuer Free Writing Prospectus, or that would otherwise constitute a "free writing prospectus," as defined in Rule 405, required to be filed with the Commission. Any such free writing prospectus consented to by the Agent or by the Company, as the case may be, is hereinafter referred to as a "Permitted Free Writing Prospectus." The Company represents and warrants that it has treated and agrees that it will treat each Permitted Free Writing Prospectus as an "issuer free writing prospectus," as defined in Rule 433, and has complied and will comply with the requirements of Rule 433 applicable to any Permitted Free Writing Prospectus, including timely filing with the Commission where required, legending and record keeping. For the purposes of clarity, the parties hereto agree that all free writing prospectuses, if any, listed in Exhibit 22 hereto are Permitted Free Writing Prospectuses.

23. Absence of Fiduciary Relationship.

The Company acknowledges and agrees that:

(a) the Agent is acting solely as agent in connection with the public offering of the Placement Shares and in connection with each transaction contemplated by this Agreement and the process leading to such transactions, and no fiduciary or advisory relationship between the Company or any of its respective affiliates, stockholders (or other equity holders), creditors or employees or any other party, on the one hand, and the Agent, on the other hand, has been or will be created in respect of any of the transactions contemplated by this Agreement,

irrespective of whether or not the Agent has advised or is advising the Company on other matters, and the Agent has no obligation to the Company with respect to the transactions contemplated by this Agreement except the obligations expressly set forth in this Agreement;

(b) it is capable of evaluating and understanding, and understands and accepts, the terms, risks and conditions of the transactions contemplated by this Agreement;

(c) neither the Agent nor its affiliates have provided any legal, accounting, regulatory or tax advice with respect to the transactions contemplated by this Agreement and it has consulted its own legal, accounting, regulatory and tax advisors to the extent it has deemed appropriate;

(d) it is aware that the Agent and its affiliates are engaged in a broad range of transactions which may involve interests that differ from those of the Company and the Agent and its affiliates have no obligation to disclose such interests and transactions to the Company by virtue of any fiduciary, advisory or agency relationship or otherwise; and

(e) it waives, to the fullest extent permitted by law, any claims it may have against the Agent or its affiliates for breach of fiduciary duty or alleged breach of fiduciary duty in connection with the sale of Placement Shares under this Agreement and agrees that the Agent and its affiliates shall not have any liability (whether direct or indirect, in contract, tort or otherwise) to it in respect of such a fiduciary duty claim or to any person asserting a fiduciary duty claim on its behalf or in right of it or the Company, employees or creditors of Company, other than in respect of the Agent's obligations under this Agreement and to keep information provided by the Company to the Agent and the Agent's counsel confidential to the extent not otherwise publicly-available.

24. Definitions.

As used in this Agreement, the following terms have the respective meanings set forth below:

"**Applicable Time**" means (i) each Representation Date and (ii) the time of each sale of any Placement Shares pursuant to this Agreement.

"**Issuer Free Writing Prospectus**" means any "issuer free writing prospectus," as defined in Rule 433, relating to the Placement Shares that (1) is required to be filed with the Commission by the Company, (2) is a "road show" that is a "written communication" within the meaning of Rule 433(d)(8)(i) whether or not required to be filed with the Commission, or (3) is exempt from filing pursuant to Rule 433(d)(5)(i) because it contains a description of the Placement Shares or of the offering that does not reflect the final terms, in each case in the form filed or required to be filed with the Commission or, if not required to be filed, in the form retained in the Company's records pursuant to Rule 433(g) under the Securities Act Regulations.

"**Rule 164**," "**Rule 172**," "**Rule 405**," "**Rule 415**," "**Rule 424**," "**Rule 424(b)**," "**Rule 430B**," and "**Rule 433**" refer to such rules under the Securities Act Regulations.

All references in this Agreement to financial statements and schedules and other information that is "contained," "included" or "stated" in the Registration Statement or the Prospectus (and all other references of like import) shall be deemed to mean and include all such financial statements and schedules and other information that is incorporated by reference in the Registration Statement or the Prospectus, as the case may be.

All references in this Agreement to the Registration Statement, the Prospectus or any amendment or supplement to any of the foregoing shall be deemed to include the copy filed with the Commission pursuant to EDGAR; all references in this Agreement to any Issuer Free Writing Prospectus (other than any Issuer Free Writing Prospectuses that, pursuant to Rule 433, are not required to be filed with the Commission) shall be deemed to include the copy thereof filed with the Commission pursuant to EDGAR; and all references in this Agreement to "supplements" to the Prospectus shall include, without limitation, any supplements, "wrappers" or similar materials prepared in connection with any offering, sale or private placement of any Placement Shares by the Agent outside of the United States.

[***Signature Page Follows***]

If the foregoing correctly sets forth the understanding between the Company and the Agent, please so indicate in the space provided below for that purpose, whereupon this letter shall constitute a binding agreement between the Company and the Agent.

Very truly yours,

PARATEK PHARMACEUTICALS, INC.

By: /s/ Douglas W. Pagán
Name: Douglas W. Pagán
Title: Chief Financial Officer

ACCEPTED as of the date first-above written:

CANTOR FITZGERALD & CO.

By: /s/ Jeffrey Lumby
Name: Jeffrey Lumby
Title: Sr. MD – Head of ECM

SCHEDULE 1

_____

FORM OF PLACEMENT NOTICE

_____

From: Paratek Pharmaceuticals, Inc.

To: Cantor Fitzgerald & Co.
Attention: _____

Subject: Placement Notice

Gentlemen:

Pursuant to the terms and subject to the conditions contained in the Sales Agreement between Paratek Pharmaceuticals, Inc., a Delaware corporation (the "**Company**"), and Cantor Fitzgerald & Co. ("**Agent**"), dated February 28, 2017, the Company hereby requests that the Agent sell up to _____ of the Company's Common Stock, par value $0.001 per share, at a minimum market price of $_____ per share, during the time period beginning [month, day, time] and ending [month, day, time].

SCHEDULE 2

Compensation

The Company shall pay to the Agent in cash, upon each sale of Placement Shares pursuant to this Agreement, an amount equal to 3.0% of the aggregate gross proceeds from each sale of Placement Shares.

SCHEDULE 3

Notice Parties

The Company

Michael F. Bigham (mbigham@paratekpharm.com)

Evan Loh (eloh@paratekpharm.com)

Douglas Pagán (dpagan@paratekpharm.com)

William Haskel (bhaskel@paratekpharm.com)

The Agent

Jeff Lumby (jlumby@cantor.com)

Josh Feldman (jfeldman@cantor.com)

Sameer Vasudev (svasudev@cantor.com)

With copies to:

CFControlledEquityOffering@cantor.com

SCHEDULE 4

Subsidiaries

Subsidiaries of Paratek Pharmaceuticals, Inc.

Name	State or Jurisdiction of Incorporation or Organization
Paratek Bermuda Ltd.	Bermuda
Paratek Pharma, LLC	Delaware
Paratek Securities Corporation	Massachusetts
Paratek UK, LTD	United Kingdom
Transcept Pharma, Inc.	Delaware

EXHIBIT 7(l)

Form of Representation Date Certificate

The undersigned, the duly qualified and elected _____, of Paratek Pharmaceuticals, Inc., a Delaware corporation (the "Company"), does hereby certify in such capacity and on behalf of the Company, pursuant to Section 7(l) of the Sales Agreement, dated February 28, 2017 (the "Sales Agreement"), between the Company and Cantor Fitzgerald & Co., that to the best of the knowledge of the undersigned:

(i) The representations and warranties of the Company in Section 6 of the Sales Agreement (A) to the extent such representations and warranties are subject to qualifications and exceptions contained therein relating to materiality or Material Adverse Effect, are true and correct on and as of the date hereof with the same force and effect as if expressly made on and as of the date hereof, except for those representations and warranties that speak solely as of a specific date and which were true and correct as of such date, and (B) to the extent such representations and warranties are not subject to any qualifications or exceptions, are true and correct in all material respects as of the date hereof as if made on and as of the date hereof with the same force and effect as if expressly made on and as of the date hereof, except for those representations and warranties that speak solely as of a specific date and which were true and correct as of such date; *provided, however,* that in the case of clauses (A) and (B), such representations and warranties also shall be qualified by the disclosure included or incorporated by reference in the Registration Statement and Prospectus; and

(ii) The Company has complied with all agreements and satisfied all conditions on its part to be performed or satisfied pursuant to the Sales Agreement at or prior to the date hereof.

Capitalized terms used herein without definition shall have the meanings given to such terms in the Sales Agreement.

PARATEK PHARMACEUTICALS, INC.

By: _____
Name: _____
Title: _____

Date: _____

Exhibit 22

Permitted Free Writing Prospectus

None.

Exhibit 5.1

ROPES & GRAY LLP
PRUDENTIAL TOWER
800 BOYLSTON STREET
BOSTON, MA 02199-3600
WWW.ROPESGRAY.COM

March 1, 2017

Paratek Pharmaceuticals, Inc.
75 Park Plaza
Boston, MA 02116

Re: Registration Statement on Form S-3 (File No. 333-215123)

Ladies and Gentlemen:

We have acted as counsel to Paratek Pharmaceuticals, Inc., a Delaware corporation (the "Company") in connection with the issuance and sale of up to $50,000,000 of shares (the "Shares") of common stock, $0.001 par value ("Common Stock"), of the Company pursuant to the above-referenced registration statement (the "Registration Statement"), filed by the Company with the Securities and Exchange Commission (the "Commission") under the Securities Act of 1933, as amended (the "Securities Act"). The Shares will be sold pursuant to a Controlled Equity Offering℠ Sales Agreement, by and between the Company and Cantor Fitzgerald & Co. (the "Agreement").

In connection with this opinion letter, we have examined such certificates, documents and records and have made such investigation of fact and such examination of law as we have deemed appropriate in order to enable us to render the opinions set forth herein. In conducting such investigation, we have relied, without independent verification, upon certificates of officers of the Company, public officials and other appropriate persons.

The opinion expressed below is limited to the Delaware General Corporation Law.

Based upon and subject to the foregoing, we are of the opinion that the Shares have been duly authorized and, when the Shares are issued out of the Company's duly authorized Common Stock and sold in accordance with the terms of the Agreement, the Shares will be validly issued, fully paid and non-assessable.

We hereby consent to your filing this opinion as an exhibit to the Registration Statement and to the use of our name therein and in the related prospectus under the caption "Legal Matters." In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Sections 7 of the Securities Act or the rules and regulations of the Commission thereunder.

Very truly yours,
/s/ Ropes & Gray LLP
Ropes & Gray LLP

Exhibit 10.6E

PARATEK PHARMACEUTICALS, INC.
DIRECTOR RESTRICTED STOCK UNIT GRANT NOTICE
(2015 EQUITY INCENTIVE PLAN)

Paratek Pharmaceuticals, Inc. (the "***Company***"), pursuant to Section 6(b) of the Company's 2015 Equity Incentive Plan (the "***Plan***"), hereby awards to Participant a Restricted Stock Unit Award for the number of shares of the Company's Common Stock ("***Restricted Stock Units***") set forth below (the "***Award***"). The Award is subject to all of the terms and conditions as set forth in this notice of grant (this "***Restricted Stock Unit Grant Notice***") and in the Plan and the Director Restricted Stock Unit Award Agreement (the "***Award Agreement***"), both of which are attached hereto and incorporated herein in their entirety. Capitalized terms not explicitly defined herein shall have the meanings set forth in the Plan or the Award Agreement. In the event of any conflict between the terms in the Award and the Plan, the terms of the Plan shall control.

Participant:	_____
Date of Grant:	_____
Vesting Commencement Date:	_____
Number of Restricted Stock Units/Shares:	_____

Vesting Schedule: The Award shall vest as to 100% of the Restricted Stock Units on the one-year anniversary of the Vesting Commencement Date, provided that vesting will cease upon the termination of Participant's Continuous Service.

If a Change in Control occurs, then, as of immediately prior to such Change in Control, the vesting of the Award shall be accelerated to the extent of one-hundred percent (100%) of the then outstanding Restricted Stock Units, provided that Participant has remained in Continuous Service from the Vesting Commencement Date until immediately prior to such Change in Control.

Issuance Schedule: Subject to any change on a Capitalization Adjustment, one share of Common Stock will be issued for each Restricted Stock Unit that vests at the time set forth in Section 6 of the Award Agreement.

ADDITIONAL TERMS/ACKNOWLEDGEMENTS: Participant acknowledges receipt of, and understands and agrees to, this Restricted Stock Unit Grant Notice, the Award Agreement and the Plan. Participant further acknowledges that as of the Date of Grant, this Restricted Stock Unit Grant Notice, the Award Agreement and the Plan set forth the entire understanding between Participant and the Company regarding the acquisition of the Common Stock pursuant to the Award specified above and supersede all prior oral and written agreements on the terms of this Award with the exception, if applicable, of any compensation recovery policy that is adopted by the Company or is otherwise required by applicable law.

By accepting this Award, Participant acknowledges having received and read this Restricted Stock Unit Grant Notice, the Award Agreement and the Plan and agrees to all of the terms and conditions set forth in these documents. Participant consents to receive Plan documents by electronic delivery and to participate in the Plan through an on-line or electronic system established and maintained by the Company or another third party designated by the Company.

PARATEK PHARMACEUTICALS, INC.	**PARTICIPANT**
By: _____	_____
Signature	Signature
Title: _____	Date: _____
Date: _____	

ATTACHMENTS: Director Restricted Stock Unit Award Agreement and 2015 Equity Incentive Plan

ATTACHMENT I

DIRECTOR RESTRICTED STOCK UNIT AWARD AGREEMENT

PARATEK PHARMACEUTICALS, INC.
DIRECTOR RESTRICTED STOCK UNIT AWARD AGREEMENT
(2015 EQUITY INCENTIVE PLAN)

Pursuant to the Director Restricted Stock Unit Grant Notice (the "***Grant Notice***") and this Director Restricted Stock Unit Award Agreement (the "***Agreement***"), Paratek Pharmaceuticals, Inc. (the "***Company***") has awarded you ("***Participant***") a Restricted Stock Unit Award (the "***Award***") pursuant to Section 6(b) of the Company's 2015 Equity Incentive Plan (the "***Plan***") for the number of Restricted Stock Units/shares indicated in the Grant Notice. Capitalized terms not explicitly defined in this Agreement or the Grant Notice shall have the same meanings given to them in the Plan. The terms of your Award, in addition to those set forth in the Grant Notice, are as follows.

1. GRANT OF THE AWARD. This Award represents the right to be issued on a future date one (1) share of Common Stock for each Restricted Stock Unit that vests on the applicable vesting date(s) (subject to any adjustment under Section 3 below) as indicated in the Grant Notice. As of the Date of Grant, the Company will credit to a bookkeeping account maintained by the Company for your benefit (the "***Account***") the number of Restricted Stock Units/shares of Common Stock subject to the Award. This Award was granted in consideration of your services to the Company.

2. VESTING. Subject to the limitations contained herein, your Award will vest, if at all, in accordance with the vesting schedule provided in the Grant Notice, provided that vesting will cease upon the termination of your Continuous Service. Upon such termination of your Continuous Service, the Restricted Stock Units/shares of Common Stock credited to the Account that were not vested on the date of such termination will be forfeited at no cost to the Company and you will have no further right, title or interest in or to such underlying shares of Common Stock.

3. NUMBER OF SHARES. The number of Restricted Stock Units/shares subject to your Award may be adjusted from time to time for Capitalization Adjustments, as provided in the Plan. Any additional Restricted Stock Units, shares, cash or other property that becomes subject to the Award pursuant to this Section 3, if any, shall be subject, in a manner determined by the Board, to the same forfeiture restrictions, restrictions on transferability, and time and manner of delivery as applicable to the other Restricted Stock Units and shares covered by your Award. Notwithstanding the provisions of this Section 3, no fractional shares or rights for fractional shares of Common Stock shall be created pursuant to this Section 3. Any fraction of a share will be rounded down to the nearest whole share.

4. SECURITIES LAW COMPLIANCE. You may not be issued any Common Stock under your Award unless the shares of Common Stock underlying the Restricted Stock Units are either (i) then registered under the Securities Act, or (ii) the Company has determined that such issuance would be exempt from the registration requirements of the Securities Act. Your Award must also comply with other applicable laws and regulations governing the Award, and you shall not receive such Common Stock if the Company determines that such receipt would not be in material compliance with such laws and regulations.

5. **Transfer Restrictions**. Prior to the time that shares of Common Stock have been delivered to you, you may not transfer, pledge, sell or otherwise dispose of this Award or the shares issuable in respect of your Award, except as expressly provided in this Section 5. For example, you may not use shares that may be issued in respect of your Restricted Stock Units as security for a loan. The restrictions on transfer set forth herein will lapse upon delivery to you of shares in respect of your vested Restricted Stock Units.

(a) **Death**. Your Award is transferable by will and by the laws of descent and distribution. At your death, vesting of your Award will cease and your executor or administrator of your estate shall be entitled to receive, on behalf of your estate, any Common Stock or other consideration that vested but was not issued before your death.

(b) **Domestic Relations Orders.** Upon receiving written permission from the Board or its duly authorized designee, and provided that you and the designated transferee enter into transfer and other agreements required by the Company, you may transfer your right to receive the distribution of Common Stock or other consideration hereunder, pursuant to a domestic relations order or marital settlement agreement that contains the information required by the Company to effectuate the transfer. You are encouraged to discuss the proposed terms of any division of this Award with the Company General Counsel prior to finalizing the domestic relations order or marital settlement agreement to verify that you may make such transfer, and if so, to help ensure the required information is contained within the domestic relations order or marital settlement agreement.

6. **Date of Issuance.**

(a) The issuance of shares in respect of the Restricted Stock Units is intended to comply with Treasury Regulations Section 1.409A-1(b)(4) and will be construed and administered in such a manner. In the event one or more Restricted Stock Units vests, the Company shall issue to you one (1) share of Common Stock for each Restricted Stock Unit that vests on the applicable vesting date(s) (subject to any adjustment under Section 3 above). The issuance date determined by this paragraph is referred to as the "***Original Issuance Date***".

(b) If the Original Issuance Date falls on a date that is not a business day, delivery shall instead occur on the next following business day.

(c) The form of delivery (*e.g.*, a stock certificate or electronic entry evidencing such shares) shall be determined by the Company.

7. **Dividends.** You shall receive no benefit or adjustment to your Award with respect to any cash dividend, stock dividend or other distribution that does not result from a Capitalization Adjustment.

8. **Restrictive Legends.** The shares of Common Stock issued under your Award shall be endorsed with appropriate legends as determined by the Company.

9. Execution of Documents. You hereby acknowledge and agree that the manner selected by the Company by which you indicate your consent to your Grant Notice is also deemed to be your execution of your Grant Notice and of this Agreement. You further agree that such manner of indicating consent may be relied upon as your signature for establishing your execution of any documents to be executed in the future in connection with your Award.

10. Award not a Service Contract.

(a) Nothing in this Agreement (including, but not limited to, the vesting of your Award or the issuance of the shares subject to your Award), the Plan or any covenant of good faith and fair dealing that may be found implicit in this Agreement or the Plan shall: (i) confer upon you any right to continue in the employ of, or affiliation with, the Company or an Affiliate; (ii) constitute any promise or commitment by the Company or an Affiliate regarding the fact or nature of future positions, future work assignments, future compensation or any other term or condition of employment or affiliation; (iii) confer any right or benefit under this Agreement or the Plan unless such right or benefit has specifically accrued under the terms of this Agreement or Plan; or (iv) deprive the Company of the right to terminate you at will and without regard to any future vesting opportunity that you may have.

(b) The Company has the right to reorganize, sell, spin-out or otherwise restructure one or more of its businesses or Affiliates at any time or from time to time, as it deems appropriate (a "***reorganization***"). Such a reorganization could result in the termination of your Continuous Service, or the termination of Affiliate status of your employer and the loss of benefits available to you under this Agreement, including but not limited to, the termination of the right to continue vesting in the Award. This Agreement, the Plan, the transactions contemplated hereunder and the vesting schedule set forth herein or any covenant of good faith and fair dealing that may be found implicit in any of them do not constitute an express or implied promise of continued engagement as an employee or consultant for the term of this Agreement, for any period, or at all, and shall not interfere in any way with the Company's right to conduct a reorganization.

11. Withholding Obligations. You expressly acknowledge and agree that you shall be responsible for satisfying and paying all taxes arising from or due in connection with the grant or vesting of the Restricted Stock Units and/or the delivery of any Common Stock hereunder. The Company shall have no liability or obligation relating to the foregoing.

12. Tax Consequences. The Company has no duty or obligation to minimize the tax consequences to you of this Award and shall not be liable to you for any adverse tax consequences to you arising in connection with this Award. You are hereby advised to consult with your own personal tax, financial and/or legal advisors regarding the tax consequences of this Award and by signing the Grant Notice, you have agreed that you have done so or knowingly and voluntarily declined to do so. You understand that you (and not the Company) shall be responsible for your own tax liability that may arise as a result of this investment or the transactions contemplated by this Agreement.

13. **UNSECURED OBLIGATION.** Your Award is unfunded, and as a holder of a vested Award, you shall be considered an unsecured creditor of the Company with respect to the Company's obligation, if any, to issue shares or other property pursuant to this Agreement. You shall not have voting or any other rights as a stockholder of the Company with respect to the shares to be issued pursuant to this Agreement until such shares are issued to you pursuant to Section 6 of this Agreement. Upon such issuance, you will obtain full voting and other rights as a stockholder of the Company. Nothing contained in this Agreement, and no action taken pursuant to its provisions, shall create or be construed to create a trust of any kind or a fiduciary relationship between you and the Company or any other person.

14. **NOTICES**. Any notice or request required or permitted hereunder shall be given in writing to each of the other parties hereto and shall be deemed effectively given on the earlier of (i) the date of personal delivery, including delivery by express courier, or delivery via electronic means, or (ii) the date that is five (5) days after deposit in the United States Post Office (whether or not actually received by the addressee), by registered or certified mail with postage and fees prepaid, addressed at the following addresses, or at such other address(es) as a party may designate by ten (10) days' advance written notice to each of the other parties hereto:

COMPANY:	Paratek Pharmaceuticals, Inc. Attn: Stock Administrator 75 Park Plaza, Fourth Floor Boston, MA 02116 USA
PARTICIPANT:	Your address as on file with the Company at the time notice is given

15. **HEADINGS**. The headings of the Sections in this Agreement are inserted for convenience only and shall not be deemed to constitute a part of this Agreement or to affect the meaning of this Agreement.

16. **MISCELLANEOUS.**

(a) The rights and obligations of the Company under your Award shall be transferable by the Company to any one or more persons or entities, and all covenants and agreements hereunder shall inure to the benefit of, and be enforceable by, the Company's successors and assigns.

(b) You agree upon request to execute any further documents or instruments necessary or desirable in the sole determination of the Company to carry out the purposes or intent of your Award.

(c) You agree that you will not sell, dispose of, transfer, make any short sale of, grant any option for the purchase of, or enter into any hedging or similar transaction with the same economic effect as a sale with respect to any shares of Common Stock or other securities of the Company held by you, for a period of 180 days following the effective date of a registration statement of the Company filed under the Securities Act or such longer period as the underwriters or the Company will request to facilitate compliance with FINRA Rule 2711 or NYSE Member Rule 472 or any successor or similar rules or regulation (the "***Lock-Up***

Period"). You further agree to execute and deliver such other agreements as may be reasonably requested by the Company or the underwriters that are consistent with the foregoing or that are necessary to give further effect thereto. In order to enforce the foregoing covenant, the Company may impose stop-transfer instructions with respect to your shares of Common Stock until the end of such period. You also agree that any transferee of any shares of Common Stock (or other securities) of the Company held by you will be bound by this Section 16(c). The underwriters of the Company's stock are intended third party beneficiaries of this Section 16(c) and will have the right, power and authority to enforce the provisions hereof as though they were a party hereto.

(d) You acknowledge and agree that you have reviewed your Award in its entirety, have had an opportunity to obtain the advice of counsel prior to executing and accepting your Award and fully understand all provisions of your Award.

(e) This Agreement shall be subject to all applicable laws, rules, and regulations, and to such approvals by any governmental agencies or national securities exchanges as may be required.

(f) All obligations of the Company under the Plan and this Agreement shall be binding on any successor to the Company, whether the existence of such successor is the result of a direct or indirect purchase, merger, consolidation, or otherwise, of all or substantially all of the business and/or assets of the Company.

17. Governing Plan Document. Your Award is subject to all the provisions of the Plan, the provisions of which are hereby made a part of your Award, and is further subject to all interpretations, amendments, rules and regulations which may from time to time be promulgated and adopted pursuant to the Plan. Your Award (and any compensation paid or shares issued under your Award) is subject to recoupment in accordance with The Dodd–Frank Wall Street Reform and Consumer Protection Act and any implementing regulations thereunder, any clawback policy adopted by the Company and any compensation recovery policy otherwise required by applicable law. No recovery of compensation under such a clawback policy will be an event giving rise to a right to voluntarily terminate employment upon a resignation for "good reason," or for a "constructive termination" or any similar term under any plan of or agreement with the Company.

18. Effect on Other Employee Benefit Plans. The value of the Award subject to this Agreement shall not be included as compensation, earnings, salaries, or other similar terms used when calculating benefits under any employee benefit plan (other than the Plan) sponsored by the Company or any Affiliate except as such plan otherwise expressly provides. The Company expressly reserves its rights to amend, modify, or terminate any or all of the employee benefit plans of the Company or any Affiliate.

19. Choice of Law. The interpretation, performance and enforcement of this Agreement shall be governed by the law of the State of Delaware without regard to that state's conflicts of laws rules.

20. **Severability**. If all or any part of this Agreement or the Plan is declared by any court or governmental authority to be unlawful or invalid, such unlawfulness or invalidity shall not invalidate any portion of this Agreement or the Plan not declared to be unlawful or invalid. Any Section of this Agreement (or part of such a Section) so declared to be unlawful or invalid shall, if possible, be construed in a manner which will give effect to the terms of such Section or part of a Section to the fullest extent possible while remaining lawful and valid.

21. **Other Documents**. You acknowledge receipt of and the right to receive a document providing the information required by Rule 428(b)(1) promulgated under the Securities Act, which includes the Plan prospectus. In addition, you acknowledge receipt of the Company's Insider Trading Policy.

22. **Amendment.** This Agreement may not be modified, amended or terminated except by an instrument in writing, signed by you and by a duly authorized representative of the Company. Notwithstanding the foregoing, this Agreement may be amended solely by the Board by a writing which specifically states that it is amending this Agreement, so long as a copy of such amendment is delivered to you, and provided that, except as otherwise expressly provided in the Plan, no such amendment materially adversely affecting your rights hereunder may be made without your written consent. Without limiting the foregoing, the Board reserves the right to change, by written notice to you, the provisions of this Agreement in any way it may deem necessary or advisable to carry out the purpose of the Award as a result of any change in applicable laws or regulations or any future law, regulation, ruling, or judicial decision, provided that any such change shall be applicable only to rights relating to that portion of the Award which is then subject to restrictions as provided herein.

23. **Compliance with Section 409A of the Code**. This Award is intended to comply with the "short-term deferral" rule set forth in Treasury Regulation Section 1.409A-1(b)(4). Notwithstanding the foregoing, if it is determined that the Award fails to satisfy the requirements of the short-term deferral rule and is otherwise deferred compensation subject to Section 409A, and if you are a "Specified Employee" (within the meaning set forth in Section 409A(a)(2)(B)(i) of the Code) as of the date of your "separation from service" (within the meaning of Treasury Regulation Section 1.409A-1(h) and without regard to any alternative definition thereunder), then the issuance of any shares that would otherwise be made upon the date of the separation from service or within the first six (6) months thereafter will not be made on the originally scheduled date(s) and will instead be issued in a lump sum on the date that is six (6) months and one day after the date of the separation from service, with the balance of the shares issued thereafter in accordance with the original vesting and issuance schedule set forth above, but if and only if such delay in the issuance of the shares is necessary to avoid the imposition of adverse taxation on you in respect of the shares under Section 409A of the Code. Each installment of shares that vests is intended to constitute a "separate payment" for purposes of Treasury Regulation Section 1.409A-2(b)(2).

* * * * *

This Restricted Stock Unit Award Agreement shall be deemed to be signed by the Company and the Participant upon the signing by the Participant of the Restricted Stock Unit Grant Notice to which it is attached.

ATTACHMENT II

2015 EQUITY INCENTIVE PLAN

Exhibit 10.6F

Paratek Pharmaceuticals, Inc.
Director Stock Option Grant Notice
(2015 Equity Incentive Plan)

Paratek Pharmaceuticals, Inc. (the "***Company***"), pursuant to its 2015 Equity Incentive Plan (the "***Plan***"), hereby grants to Optionholder an option to purchase the number of shares of the Company's Common Stock set forth below (the "***Option***"). This Option is subject to all of the terms and conditions as set forth in this notice of grant (this "***Stock Option Grant Notice***") and in the Director Option Agreement, the Plan and the Notice of Exercise, all of which are attached hereto and incorporated herein in their entirety. Capitalized terms not explicitly defined herein shall have the meanings set forth in the Plan or the Director Option Agreement. In the event of a conflict between the terms in this Stock Option Grant Notice and the Plan, the terms of the Plan will control.

Optionholder:	_____
Date of Grant:	_____
Vesting Commencement Date:	_____
Number of Shares Subject to Option:	_____
Exercise Price (Per Share):	_____
Total Exercise Price:	_____
Expiration Date:	_____

Type of Grant: Nonstatutory Stock Option

Exercise Schedule: Same as Vesting Schedule

Vesting Schedule: The shares subject to each such stock option will vest as to 1/12 of the shares on the last day of the month following the month of the date of grant, and on the last day of each successive month thereafter until fully vested, subject to Optionholder's Continuous Service (as defined in the Plan) through such vesting date.

If a Change in Control occurs, then, as of immediately prior to such Change in Control, the vesting of the Options shall be accelerated to the extent of one-hundred percent (100%) of the then outstanding Options, provided that Optionholder has remained in Continuous Service from the Vesting Commencement Date until immediately prior to such Change in Control.

Payment: By one or a combination of the following items (described in the Option Agreement):

☐ By cash, check, bank draft or money order payable to the Company
☐ Pursuant to a Regulation T Program
☐ By delivery of already-owned shares
☐ If and only to the extent this option is a Nonstatutory Stock Option, and subject to the Company's consent at the time of exercise, by a "net exercise" arrangement

Additional Terms/Acknowledgements: Optionholder acknowledges receipt of, and understands and agrees to, this Stock Option Grant Notice, the Option Agreement and the Plan. Optionholder acknowledges and agrees that this Stock Option Grant Notice and the Option Agreement may not be modified, amended or revised except as provided in the Plan. Optionholder further acknowledges that as of the Date of Grant, this Stock Option Grant Notice, the Option Agreement, and the Plan set forth the entire understanding between Optionholder and the Company regarding this option award and supersede all prior oral and written agreements, promises and/or representations on that subject with the exception of (i) options previously granted and delivered to Optionholder and (ii) any compensation recovery policy that is adopted by the Company or is otherwise required by applicable law.

By accepting this option, Optionholder acknowledges having received and read the Stock Option Grant Notice, the Option Agreement and the Plan and agrees to all of the terms and conditions set forth in these documents. Optionholder consents to receive such documents by electronic delivery and to participate in the Plan through an online or electronic system established and maintained by the Company or another third party designated by the Company.

Paratek Pharmaceuticals, Inc.	**Optionholder:**
By: _____	_____
Signature	Signature
Title: _____	Date: _____
Date: _____	

Attachments: Director Option Agreement, 2015 Equity Incentive Plan and Notice of Exercise

Attachment I

Director Option Agreement

Paratek Pharmaceuticals, Inc.
Director Option Agreement
(2015 Equity Incentive Plan)

Pursuant to your Stock Option Grant Notice ("***Grant Notice***") and this Director Option Agreement, Paratek Pharmaceuticals, Inc. (the "***Company***") has granted you an option under its 2015 Equity Incentive Plan (the "***Plan***") to purchase the number of shares of the Company's Common Stock indicated in your Grant Notice at the exercise price indicated in your Grant Notice. The option is granted to you effective as of the date of grant set forth in the Grant Notice (the "***Date of Grant***"). If there is any conflict between the terms in this Option Agreement and the Plan, the terms of the Plan will control. Capitalized terms not explicitly defined in this Option Agreement or in the Grant Notice but defined in the Plan will have the same definitions as in the Plan.

The details of your option, in addition to those set forth in the Grant Notice and the Plan, are as follows:

1. Vesting. Subject to the provisions contained herein, your option will vest as provided in your Grant Notice. Vesting will cease upon the termination of your Continuous Service.

2. Number of Shares and Exercise Price. The number of shares of Common Stock subject to your option and your exercise price per share in your Grant Notice will be adjusted for Capitalization Adjustments.

3. Method of Payment. You must pay the full amount of the exercise price for the shares you wish to exercise. You may pay the exercise price in cash or by check, bank draft or money order payable to the Company or in any other manner permitted by your Grant Notice, which may include one or more of the following:

(a) Pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board that, prior to the issuance of Common Stock, results in either the receipt of cash (or check) by the Company or the receipt of irrevocable instructions to pay the aggregate exercise price to the Company from the sales proceeds. This manner of payment is also known as a "broker-assisted exercise", "same day sale", or "sell to cover".

(b) By delivery to the Company (either by actual delivery or attestation) of already-owned shares of Common Stock that are owned free and clear of any liens, claims, encumbrances or security interests, and that are valued at Fair Market Value on the date of exercise. "Delivery" for these purposes, in the sole discretion of the Company at the time you exercise your option, will include delivery to the Company of your attestation of ownership of such shares of Common Stock in a form approved by the Company. You may not exercise your option by delivery to the Company of Common Stock if doing so would violate the provisions of any law, regulation or agreement restricting the redemption of the Company's stock.

(c) If this option is a Nonstatutory Stock Option, subject to the consent of the Company at the time of exercise, by a "net exercise" arrangement pursuant to which the Company will reduce the number of shares of Common Stock issued upon exercise of your option by the largest whole number of shares with a Fair Market Value that does not exceed the aggregate exercise price. You must pay any remaining balance of the aggregate exercise price not satisfied by the "net exercise" in cash or other permitted form of payment. Shares of Common Stock will no longer be outstanding under your option and will not be exercisable thereafter if those shares (i) are used to pay the exercise price pursuant to the "net exercise," (ii) are delivered to you as a result of such exercise, and (iii) are withheld to satisfy your tax withholding obligations.

4. Whole Shares. You may exercise your option only for whole shares of Common Stock.

5. Securities Law Compliance. In no event may you exercise your option unless the shares of Common Stock issuable upon exercise are then registered under the Securities Act or, if not registered, the Company has determined that your exercise and the issuance of the shares would be exempt from the registration requirements of the Securities Act. The exercise of your option also must comply with all other applicable laws and regulations governing your option, and you may not exercise your option if the Company determines that such exercise would not be in material compliance with such laws and regulations (including any restrictions on exercise required for compliance with Treas. Reg. 1.401(k)-1(d)(3), if applicable).

6. Term. You may not exercise your option before the Date of Grant or after the expiration of the option's term. The term of your option expires, subject to the provisions of Section 5(h) of the Plan, upon the earliest of the following:

(a) immediately upon the date on which the event giving rise to your termination of Continuous Service for Cause occurs (or, if required by law, the date of termination of Continuous Service for Cause);

(b) three (3) months after the termination of your Continuous Service for any reason other than Cause, your Disability or your death (except as otherwise provided in Section 7(d) below); *provided*, *however*, that if during any part of such three (3) month period your option is not exercisable solely because of the condition set forth in the section above relating to "Securities Law Compliance," your option will not expire until the earlier of the Expiration Date or until it has been exercisable for an aggregate period of three (3) months after the termination of your Continuous Service; *provided further,* if during any part of such three (3) month period, the sale of any Common Stock received upon exercise of your option would violate the Company's insider trading policy, then your option will not expire until the earlier of the Expiration Date or until it has been exercisable for an aggregate period of three (3) months after the termination of your Continuous Service during which the sale of the Common Stock received upon exercise of your option would not be in violation of the Company's insider trading policy ;

(c) twelve (12) months after the termination of your Continuous Service due to your Disability (except as otherwise provided in Section 7(d)) below;

(d) eighteen (18) months after your death if you die either during your Continuous Service or within three (3) months after your Continuous Service terminates for any reason other than Cause;

(e) the Expiration Date indicated in your Grant Notice; or

(f) the day before the tenth (10th) anniversary of the Date of Grant.

7. Exercise. You may exercise the vested portion of your option during its term by (i) delivering a Notice of Exercise (in a form designated by the Company) or completing such other documents and/or procedures designated by the Company for exercise and (ii) paying the exercise price to the Company's Secretary, stock plan administrator, or such other person as the Company may designate, together with such additional documents as the Company may then require.

8. Transferability. Except as otherwise provided in this Section 9, your option is not transferable, except by will or by the laws of descent and distribution, and is exercisable during your life only by you.

(a) Certain Trusts. Upon receiving written permission from the Board or its duly authorized designee, you may transfer your option to a trust if you are considered to be the sole beneficial owner (determined under Section 671 of the Code and applicable state law) while the option is held in the trust. You and the trustee must enter into transfer and other agreements required by the Company.

(b) Domestic Relations Orders. Upon receiving written permission from the Board or its duly authorized designee, and provided that you and the designated transferee enter into transfer and other agreements required by the Company, you may transfer your option pursuant to the terms of a domestic relations order, official marital settlement agreement or other divorce or separation instrument as permitted by Treasury Regulation 1.421-1(b)(2) that contains the information required by the Company to effectuate the transfer. You are encouraged to discuss the proposed terms of any division of this option with the Company prior to finalizing the domestic relations order or marital settlement agreement to help ensure the required information is contained within the domestic relations order or marital settlement agreement.

(c) Beneficiary Designation. Upon receiving written permission from the Board or its duly authorized designee, you may, by delivering written notice to the Company, in a form approved by the Company and any broker designated by the Company to handle option exercises, designate a third party who, on your death, will thereafter be entitled to exercise this option and receive the Common Stock or other consideration resulting from such exercise. In the absence of such a designation, your executor or administrator of your estate will be entitled to exercise this option and receive, on behalf of your estate, the Common Stock or other consideration resulting from such exercise.

9. Option not a Service Contract. Your option is not an employment or service contract, and nothing in your option will be deemed to create in any way whatsoever any obligation on your part to continue in the employ of the Company or an Affiliate, or of the Company or an Affiliate to continue your employment. In addition, nothing in your option will obligate the Company or an Affiliate, their respective stockholders, boards of directors, officers or employees to continue any relationship that you might have as a Director or Consultant for the Company or an Affiliate.

10. Withholding Obligations. You expressly acknowledge and agree that you shall be responsible for satisfying and paying all taxes arising from or due in connection with the vesting or exercise of the options and/or the delivery of any Common Stock hereunder. The Company shall have no liability or obligation relating to the foregoing.

11. Tax Consequences. You hereby agree that the Company does not have a duty to design or administer the Plan or its other compensation programs in a manner that minimizes your tax liabilities. You will not make any claim against the Company, or any of its Officers, Directors, Employees or Affiliates related to tax liabilities arising from your option or your other compensation. In particular, you acknowledge that this option is exempt from Section 409A of the Code only if the exercise price per share specified in the Grant Notice is at least equal to the "fair market value" per share of the Common Stock on the Date of Grant and there is no other impermissible deferral of compensation associated with the option.

12. Notices. Any notices provided for in your option or the Plan will be given in writing (including electronically) and will be deemed effectively given upon receipt or, in the case of notices delivered by mail by the Company to you, five (5) days after deposit in the United States mail, postage prepaid, addressed to you at the last address you provided to the Company. The Company may, in its sole discretion, decide to deliver any documents related to participation in the Plan and this option by electronic means or to request your consent to participate in the Plan by electronic means. By accepting this option, you consent to receive such documents by electronic delivery and to participate in the Plan through an on-line or electronic system established and maintained by the Company or another third party designated by the Company.

13. Governing Plan Document. Your option is subject to all the provisions of the Plan, the provisions of which are hereby made a part of your option, and is further subject to all interpretations, amendments, rules and regulations, which may from time to time be promulgated and adopted pursuant to the Plan. If there is any conflict between the provisions of your option and those of the Plan, the provisions of the Plan will control. In addition, your option (and any compensation paid or shares issued under your option) is subject to recoupment in accordance with The Dodd–Frank Wall Street Reform and Consumer Protection Act and any implementing regulations thereunder, any clawback policy adopted by the Company and any compensation recovery policy otherwise required by applicable law.

14. Other Documents. You hereby acknowledge receipt of and the right to receive a document providing the information required by Rule 428(b)(1) promulgated under the Securities Act, which includes the Plan prospectus. In addition, you acknowledge receipt of the Company's policy permitting certain individuals to sell shares only during certain "window" periods and the Company's insider trading policy, in effect from time to time.

15. Effect on Other Employee Benefit Plans. The value of this option will not be included as compensation, earnings, salaries, or other similar terms used when calculating your benefits under any employee benefit plan sponsored by the Company or any Affiliate, except as such plan otherwise expressly provides. The Company expressly reserves its rights to amend, modify, or terminate any of the Company's or any Affiliate's employee benefit plans.

16. Voting Rights. You will not have voting or any other rights as a stockholder of the Company with respect to the shares to be issued pursuant to this option until such shares are issued to you. Upon such issuance, you will obtain full voting and other rights as a stockholder of the Company. Nothing contained in this option, and no action taken pursuant to its provisions, will create or be construed to create a trust of any kind or a fiduciary relationship between you and the Company or any other person.

17. Severability. If all or any part of this Option Agreement or the Plan is declared by any court or governmental authority to be unlawful or invalid, such unlawfulness or invalidity will not invalidate any portion of this Option Agreement or the Plan not declared to be unlawful or invalid. Any Section of this Option Agreement (or part of such a Section) so declared to be unlawful or invalid shall, if possible, be construed in a manner which will give effect to the terms of such Section or part of a Section to the fullest extent possible while remaining lawful and valid.

18. Miscellaneous.

(a) The rights and obligations of the Company under your option will be transferable to any one or more persons or entities, and all covenants and agreements hereunder will inure to the benefit of, and be enforceable by the Company's successors and assigns.

(b) You agree upon request to execute any further documents or instruments necessary or desirable in the sole determination of the Company to carry out the purposes or intent of your option.

(c) You acknowledge and agree that you have reviewed your option in its entirety, have had an opportunity to obtain the advice of counsel prior to executing and accepting your option, and fully understand all provisions of your option.

(d) This Option Agreement will be subject to all applicable laws, rules, and regulations, and to such approvals by any governmental agencies or national securities exchanges as may be required.

(e) All obligations of the Company under the Plan and this Option Agreement will be binding on any successor to the Company, whether the existence of such successor is the result of a direct or indirect purchase, merger, consolidation, or otherwise, of all or substantially all of the business and/or assets of the Company.

* * *

This Option Agreement will be deemed to be signed by you upon the signing by you of the Grant Notice to which it is attached.

Attachment II

2015 Equity Incentive Plan

Attachment III

Notice of Exercise

Notice Of Exercise
Under the Paratek Pharmaceuticals, Inc.
2015 Equity Incentive Plan

Paratek Pharmaceuticals, Inc.
Attention: Stock Plan Administrator
75 Park Plaza, Fourth Floor
Boston, MA 02116, USA

Date of Exercise: _____

This constitutes notice to Paratek Pharmaceuticals, Inc. (the "***Company***") under my stock option that I elect to purchase the below number of shares of Common Stock of the Company (the "***Shares***") for the price set forth below.

Type of option (check one):	Incentive ☐	Nonstatutory ☐
Stock option dated:	_____	_____
Number of Shares as to which option is exercised:	_____	_____
Certificates to be issued in name of:	_____	_____
Total exercise price:	$_____	$_____
Cash payment delivered herewith:	$_____	$_____
Value of _____ Shares delivered herewith:	$_____	$_____
Value of _____ Shares pursuant to net exercise:	$_____	$_____
Regulation T Program (cashless exercise):	$_____	$_____

By this exercise, I agree (i) to provide such additional documents as you may require pursuant to the terms of the Paratek Pharmaceuticals, Inc. 2015 Equity Incentive Plan, (ii) to provide for the payment by me to you (in the manner designated by you) of your withholding obligation, if any, relating to the exercise of this option, and (iii) if this exercise relates to an Incentive Stock Option, to notify you in writing within fifteen (15) days after the date of any disposition of any of the Shares issued upon exercise of this option that occurs within two (2) years after the date of grant of this option or within one (1) year after such Shares are issued upon exercise of this option.

Very truly yours,

Signature

Print Name

Exhibit 10.7

PARATEK PHARMACEUTICALS, INC.

NON-EMPLOYEE DIRECTOR COMPENSATION POLICY

Each member of the Board of Directors (the *"Board")* who is not also serving as an employee of Paratek Pharmaceuticals, Inc. (the *"Company")* or any of its subsidiaries (each such member, an *"Eligible Director")* will receive the compensation described in this Non-Employee Director Compensation Policy for his or her Board service. This Non-Employee Director Compensation Policy is effective on January 1, 2017 (the *"Effective Date").* An Eligible Director may decline all or any portion of his or her compensation by giving notice to the Company prior to the date for which service begins for a cash payment, or the date of grant for an equity award, as the case may be *(e.g.,* an election to decline the cash payment to be made for a quarter must be made prior to the date the quarter begins). This policy may be amended at any time in the sole discretion of the Board or the Compensation Committee of the Board, and supersedes any prior policies related to compensation of Eligible Directors.

Annual Cash Compensation

The annual cash compensation amount set forth below is payable in equal quarterly installments, payable in arrears on the last day of each fiscal quarter in which the service occurred. If an Eligible Director joins the Board or a committee of the Board at a time other than effective as of the first day of a fiscal quarter, each annual retainer set forth below will be pro-rated based on days served in the applicable fiscal year, with a pro-rated amount paid for the first fiscal quarter in which the Eligible Director provides the service, and regular full quarterly payments thereafter. All annual cash fees are vested upon payment.

1. Annual Board Service Retainer:
   a. All Eligible Directors: $45,000

2. Annual Committee Chair Service Retainer:
   a. Chairman of the Audit Committee: $18,000
   b. Chairman of the Compensation Committee: $12,000
   c. Chairman of the Nominating and Corporate Governance Committee: $8,000

3. Annual Committee Member Service Retainer (other than Chairman):
   a. Member of the Audit Committee: $7,500
   b. Member of the Compensation Committee: $6,000
   c. Member of the Nominating and Corporate Governance Committee: $4,500

Equity Compensation

The stock options set forth below will be granted under the Company's 2015 Equity Incentive Plan (the *"Plan").* All stock options granted under this policy will be nonstatutory stock options, with an exercise price per share equal to 100% of the Fair Market Value (as defined in the Plan) of the underlying Common Stock on the date of grant, and a term of ten years from the date of grant (subject to earlier termination in connection with a termination of service as provided in the Plan). In addition to the vesting schedules described below, in the event of a Change in Control or a Corporate Transaction (each, as defined in the Plan), any unvested portion of the stock options described below will fully vest and become exercisable as of immediately prior to the effective time of such Change in Control or Corporate Transaction, subject to the Eligible Director's Continuous Service (as defined in the Plan) on the effective date of such transaction.

1. Initial Grant: On the last trading day of the month in which an Eligible Director is initially elected or appointed to the Board (or if there is no trading day in that month on or after the date of election or appointment of the Eligible Director, then on the last trading day of the month following the month in which an Eligible Director is initially elected or appointed to the Board), the Eligible Director will be granted automatically, without further action by the Board or Compensation Committee of the Board, (i) stock options to purchase 10,000 shares of the Company's Common Stock and (ii) Restricted Stock Units (RSUs) representing 10,000 shares of the Company's Common Stock. The shares subject to each such (i) stock option will vest as to 1/36 of the shares on the last day of the month following the month of the date of grant, and on the last day of each successive month thereafter until fully vested, and (ii) 1/3 of the RSUs will vest on each successive one-year anniversary following the grant date over a three-year period, in either case, subject to the Eligible Director's Continuous Service (as defined in the Plan) through such vesting dates. No Initial Grant will be granted to an Eligible Director who is already serving as a director on the Effective Date.

2. Annual Grant: At the Compensation Committee meeting held in January or February of each year for the purpose of granting executives annual equity incentive awards following the Effective Date or, if a Compensation Committee meeting is not held by the end of February of any year, on the last trading date in February of such year following the Effective Date, each Eligible Director who continues to serve as a non-employee member of the Board on such date will be granted automatically, without further action by the Board or Compensation Committee of the Board, a stock option to purchase 6,000 shares of the Company's Common Stock and Restricted Stock Units (RSUs) representing 6,000 shares of the Company's Common Stock. The shares subject to each such (i) stock option will vest as to 1/12 of the shares on the one-month anniversary following the vesting commencement date, and on the same calendar date of each successive month thereafter until fully vested, and (ii) RSUs on the one-year anniversary following the grant date, subject, in either case, to the Eligible Director's Continuous Service (as defined in the Plan) through such vesting date.

Expenses

The Company will reimburse Eligible Directors for ordinary, necessary and reasonable out-of-pocket travel expenses to cover in-person attendance at and participation in Board and/or Committee meetings.

Exhibit 10.23

AMENDMENT NO. 1
TO
LOAN AND SECURITY AGREEMENT

This Amendment No. 1 to Loan and Security Agreement (this "Amendment") is dated as of November 10, 2015 (the "First Amendment Date") and is entered into by and among (a) (i) PARATEK PHARMACEUTICALS, INC. ("Inc."), a Delaware corporation, (ii) PARATEK PHARMA, LLC, a Delaware limited liability company ("LLC" and, together with Inc., hereinafter collectively referred to as the "Borrower") and (iii) each of its subsidiaries (hereinafter collectively referred to as the "Borrower"), (b) (i) HERCULES TECHNOLOGY II, L.P., a Delaware limited partnership, (ii) HERCULES TECHNOLOGY III, L.P., a Delaware limited partnership, and (iii) the several banks and other financial institutions or entities from time to time parties to this Agreement (collectively, referred to as "Lender") and (c) HERCULES TECHNOLOGY GROWTH CAPITAL, INC., a Maryland corporation, in its capacity as administrative agent for itself and the Lender (in such capacity, the "Agent"). Capitalized terms used herein without definition shall have the same meanings given them in the Loan Agreement (as defined below).

Recitals

A. Borrower and Lender have entered into that certain Loan and Security Agreement dated as of September 30, 2015 (as may be amended, restated, or otherwise modified, the "Loan Agreement"), pursuant to which Lender has agreed to extend and make available to Borrower certain advances of money.

B. Borrower and Lender have agreed to amend the Loan Agreement upon the terms and conditions more fully set forth herein.

Agreement

NOW, THEREFORE, in consideration of the foregoing Recitals and intending to be legally bound, the parties hereto agree as follows:

1. Amendments.

1.1 Section 1.1. The defined term "Excluded Accounts" in Section 1.1 is hereby amended and restated in its entirety as follows:

> "Excluded Account" means (i) any Account (including, for the avoidance of doubt, any cash, cash equivalents or other property contained therein) to the extent, and for so long as, such Account is pledged and used exclusively to secure performance of obligations arising under clause (vi) of the defined term "Permitted Liens", and whether such pledge is by escrow or otherwise and (ii) the Transcept Royalty Account.

1.2 **Section 1.1**. Section 1.1 is hereby amended by adding the following defined term in alphabetical order:

"Transcept Royalty Account" means Bank of America account no. xxxxxxxx1066, provided that such account is exclusively used for and the only proceeds transferred, deposited, maintained in such account are with respect to: (i) royalty payments on account of sales of Intermezzo and (ii) proceeds from any sale of rights to receive the foregoing.

1.3 **Section 7.7.** Section 7.7 is hereby amended and restated in its entirety as follows:

7.7 **Distributions.** Borrower shall not, and shall not allow any Subsidiary to, (a) repurchase or redeem any class of stock or other equity interest other than (i) pursuant to employee, director or consultant stock purchase or repurchase plans or other similar agreements so long as an Event of Default does not exist at the time of such repurchase and would not exist after giving effect to such repurchase, and provided that the aggregate amount of all such repurchases does not exceed $500,000, or (ii) conversion of any of its convertible securities into other securities pursuant to the terms of such convertible securities or otherwise in exchange thereof; provided, however, in each case (i) and (ii), the repurchase or redemption price does not exceed the original consideration paid for such stock or equity interest, or (b) declare or pay any cash dividend or make a cash distribution on any class of stock or other equity interest, except that (i) a Subsidiary may pay dividends or make distributions to Borrower or any other Subsidiary of Borrower, provided that such Subsidiary has entered into a Joinder Agreement and other documents as shall be reasonably requested by Agent and (ii) Borrower or any Subsidiary may pay dividends consisting solely of amounts contained in the Transcept Royalty Account, or (c) lend money to any employees, officers or directors or guarantee the payment of any such loans granted by a third party in excess of $100,000 in the aggregate or (d) waive, release or forgive any Indebtedness owed by any employees, officers or directors in excess of $100,000 in the aggregate.

1.4 **Section 7.16.** Section 7.16 is hereby amended and restated in its entirety as follows:

7.16 Post-Closing Deliverables. Borrower shall deliver to Agent, within thirty (30) Business Days after the Closing Date, fully-executed Account Control Agreements by and among LLC, Agent, and Bank of America, covering LLC's account no. xxxxxxxx9095, and (b) within thirty (30) days after the Closing Date, endorsements to Borrower's property and liability policies, which endorsements shall name Agent as lender loss payee and additional insured and provide that Agent shall receive prior notice of cancellation of such property and liability policies.

2. **Borrower's Representations And Warranties**. Borrower represents and warrants that:

2.1 Immediately upon giving effect to this Amendment (i) the representations and warranties contained in the Loan Documents are true, accurate and complete in all material respects as of the date hereof (except to the extent such representations and warranties relate to an earlier date, in which case they are true and correct as of such date), and (ii) no Event of Default has occurred and is continuing with respect to which Borrower has not been notified in writing by Lender.

2.2 Borrower has the corporate power and authority to execute and deliver this Amendment and to perform its obligations under the Loan Agreement, as amended by this Amendment.

2.3 The certificate of incorporation, bylaws and other organizational documents of Borrower delivered to Lender on the Closing Date remain true, accurate and complete and have not been amended, supplemented or restated and are and continue to be in full force and effect.

2.4 The execution and delivery by Borrower of this Amendment and the performance by Borrower of its obligations under the Loan Agreement, as amended by this Amendment, have been duly authorized by all necessary corporate action on the part of Borrower.

2.5 This Amendment has been duly executed and delivered by Borrower and is the binding obligation of Borrower, enforceable against it in accordance with its terms, except as such enforceability may be limited by bankruptcy, insolvency, reorganization, liquidation, moratorium or other similar laws of general application and equitable principles relating to or affecting creditors' rights; and

2.6 As of the date hereof, it has no defenses against the obligations to pay any amounts under the Obligations. Borrower acknowledges that Lender has acted in good faith and has conducted in a commercially reasonable manner its relationships with Borrower in connection with this Amendment and in connection with the Loan Documents.

Borrower understands and acknowledges that Lender is entering into this Amendment in reliance upon, and in partial consideration for, the above representations and warranties, and agrees that such reliance is reasonable and appropriate.

3. Limitation. The amendments set forth in this Amendment shall be limited precisely as written and shall not be deemed (a) to be a waiver or modification of any other term or condition of the Loan Agreement or of any other instrument or agreement referred to therein or to prejudice any right or remedy which Lender may now have or may have in the future under or in connection with the Loan Agreement (as amended hereby) or any instrument or agreement referred to therein; or (b) to be a consent to any future amendment or modification or waiver to any instrument or agreement the execution and delivery of which is consented to hereby, or to any waiver of any of the provisions thereof. Except as expressly amended hereby, the Loan Agreement shall continue in full force and effect.

4. Effectiveness. This Amendment shall become effective upon the satisfaction of all the following conditions precedent:

4.1 Amendment. Borrower and Lender shall have duly executed and delivered this Amendment to Lender.

4.2 Payment of Lender Expenses. Borrower shall have paid all Lender Expenses (including all reasonable attorneys' fees and reasonable expenses) incurred through the date of this Amendment.

5. Counterparts. This Amendment may be signed in any number of counterparts, and by different parties hereto in separate counterparts, with the same effect as if the signatures to each such counterpart were upon a single instrument. All counterparts shall be deemed an original of this Amendment. This Amendment may be executed by facsimile, portable document format (.pdf) or similar technology signature, and such signature shall constitute an original for all purposes.

6. Incorporation By Reference. The provisions of Section 11 of the Agreement shall be deemed incorporated herein by reference, *mutatis mutandis*.

In Witness Whereof, the parties have duly authorized and caused this Amendment to be executed as of the date first written above.

BORROWER:

PARATEK PHARMACEUTICALS, INC.

Signature: /s/ Douglas W. Pagán
Print Name: Douglas W. Pagán
Title: Chief Financial Officer

PARATEK PHARMA, LLC.

Signature: /s/ Douglas W. Pagán
Print Name: Douglas W. Pagán
Title: Chief Financial Officer

Accepted in Palo Alto, California:

AGENT:

HERCULES TECHNOLOGY GROWTH CAPITAL, INC.

Signature: /s/ Ben Bang
Print Name: Ben Bang
Title: Associate General Counsel

LENDER:

HERCULES TECHNOLOGY II, L.P.,
a Delaware limited partnership

By: Hercules Technology SBIC Management, LLC,
its General Partner

By: Hercules Technology Growth Capital, Inc.,
its Manager

Signature: /s/ Ben Bang
Print Name: Ben Bang
Title: Associate General Counsel

HERCULES TECHNOLOGY III, L.P.,
a Delaware limited partnership

By: Hercules Technology SBIC Management, LLC,
its General Partner

By: Hercules Technology Growth Capital, Inc.,
its Manager

Signature: /s/ Ben Bang
Print Name: Ben Bang
Title: Associate General Counsel

Exhibit 10.25

DRUHERT OFFICE PARATEK PHARMA LSE

OFFICE LEASE

THE HERITAGE ON THE GARDEN

BOSTON, MASSACHUSETTS

PARATEK PHARMA, LLC.

THIS INSTRUMENT IS AN INDENTURE OF LEASE in which the Landlord and the Tenant are the parties hereinafter named, and which relates to space in the building (the "Building") now known as The Heritage on The Garden, the office portion of which is now numbered 75 Park Plaza, and located at the southeasterly intersection of Arlington Street and Boylston Street in Boston, Massachusetts.

The parties to this instrument hereby agree with each other as follows:

ARTICLE I

BASIC LEASE PROVISIONS

1.1 INTRODUCTION. As further supplemented in the balance of this instrument and its Exhibits, the following sets forth the basic terms of this Lease and, where appropriate, constitutes definitions of certain terms used in this Lease.

1.2 BASIC DATA.

Date:	April 24, 2015 ,
Landlord:	TDC Heritage LLC; a Delaware limited liability company
Present Mailing Address of Landlord:	c/o The Druker Company, Ltd. 50 Federal Street Suite 1000 Boston, Massachusetts 02110
Tenant:	Paratek Pharma, LLC.
Present Mailing Address of Tenant:	75 Kneeland Street Boston, Massachusetts 02111
Lease Term or Term:	Forty-Eight (48) calendar months (plus the partial month, if any, immediately following the Rent Commencement Date as defined Section 2.1(b)).
Anticipated Delivery Date:	June 30, 2015
Rent Commencement Date:	Sixty (60) days after the Commencement Date.

Fixed Rent: For and with respect to the first twelve (12) calendar months, plus the partial month, if any, immediately following the Rent Commencement Date at the rate of $421,408.00 per annum, payable at the rate of $35,117.33 per calendar month and proportionately at such monthly rate for any partial month.

For and with respect to the next twelve (12) calendar months of the term of this lease at the rate of $429,512.00 per annum, payable at the rate of $35,792.67 per calendar month and proportionately at such monthly rate for any partial month.

For and with respect to the next twelve (12) calendar months of the term of this lease at the rate of $437,616.00 per annum, payable at the rate of $36,468.00 per calendar month and proportionately at such monthly rate for any partial month.

For and with respect to the next twelve (12) calendar months of the term of this lease at the rate of $445,720.00 per annum, payable at the rate of $37,143.33 per calendar month and proportionately at such monthly rate for any partial month.

Use: For executive, administrative and general offices only.

Description of Space: The portion of the Building located on the 4th floor as shown on Exhibit A attached hereto consisting of approximately 8,104 square feet of floor area.

(herein the "Premises")

Tenant's Share:	4.9%
Base Tax Amount:	The Taxes for the tax period ending June 30, 2015.
Base Premises Operating Expenses:	The sum of (x) The Tenant's Commercial Expenses Share of the Commercial Operating Expenses and (y) the Tenant's Office Expenses Share of the Office Operating Expenses, in each case, for and with respect to calendar year 2015.
Lot:	The parcel of land described on Exhibit B hereto.
Security Deposit:	$250,000.00.
Guarantor:	Paratek Pharmaceuticals, Inc., a Delaware corporation.
Brokers:	Cushman & Wakefield of Massachusetts, Inc.
Parking Spaces:	Three (3) parking spaces, consisting of one individual space and two tandem spaces.

ARTICLE II

DESCRIPTION OF PREMISES AND APPURTENANT RIGHTS; TERM

2.1 LOCATION OF PREMISES; TERM. (a) Landlord hereby demises and leases to Tenant, and Tenant hereby accepts from Landlord, the Premises identified in the foregoing portions of this Lease for and during the Lease Term.

(b) The Lease Term shall begin on the earlier of (i) the date the Premises are conclusively deemed delivered to Tenant in accordance with Section 6.1 hereof or (ii) the date the Tenant commences its operations at the Premises (the "Commencement Date"). The Lease Term shall continue for the period set forth in Section 1.2 hereof, unless sooner terminated as hereinafter provided, and without any right of renewal or extension, except as expressly set forth in this Lease. After the Commencement Date, upon the request of either party, Landlord and Tenant shall enter unto an instrument confirming the Commencement Date.

(c) Subject to delays from causes beyond the control of Landlord or caused by the action or inaction of the Tenant, Landlord shall use reasonable speed and diligence in the construction of the Building and shall use all reasonable efforts to deliver the Premises to Tenant for its occupancy on or before the Anticipated Delivery Date. Except as expressly set forth herein, the failure to deliver the Premises to Tenant for its occupancy by the Anticipated Delivery Date shall in no way affect the validity of this Lease or the obligations of Tenant hereunder nor shall the same be construed in any way to extend the term of this Lease. If the Premises are not deemed delivered to Tenant under Section 6.1 hereof by the date which is sixty (60) days after the Anticipated Delivery Date (extended to the extent of delays from causes resulting from the action or inaction of Tenant) then Tenant shall have the right to terminate this Lease by written notice to such effect given to the Landlord before the expiration ofsuch 60 day period.

2.2 APPURTENANT RIGHTS AND RESERVATIONS. Tenant shall have, as appurtenant to the Premises, the exclusive right to use any terrace area directly bordering on the Premises which area is accessible only through the Premises as shown on the plan annexed hereto as Exhibit A (said terrace area is to be included as part of the Premises for all purposes hereunder) and the nonexclusive right to use and to permit its invitees to use in common with others, public or common lobbies, hallways, stairways, passenger and freight elevators and sanitary facilities in the Commercial Unit, but such rights shall always be subject to reasonable rules and regulations from time to time established by Landlord by suitable notice and to the right of Landlord to designate and change from time to time areas and facilities so to be used.

Excepted and excluded from the Premises are the structural roof or ceiling, the structural floor and all perimeter walls of the Premises, except in each case the inner surfaces thereof, but the entry doors to the Premises are not excluded from the Premises and are a part thereof for all purposes; and Tenant agrees that Landlord shall have the right to place in the Premises (but in such manner as to reduce to a minimum interference with Tenant's use of the Premises) utility lines, pipes and the like to serve premises other than the Premises, and to replace, maintain and repair such utility lines, pipes and the like, in, over and upon the Premises.

During the hours of 8:00 A.M. to 6:00 P.M., Monday through Friday, and 8:00 A.M. to 1:00 P.M. on Saturdays, legal holidays in all cases excepted (hereinafter referred to as “Normal Building Operating Hours”), the Building shall be open and access to the Premises shall be freely available, subject to interruption due to causes beyond Landlord's reasonable control. During periods other than Normal Building Operating Hours, Landlord shall provide means of access to the Premises on a 24/7 basis, but access to the Premises during Normal Building Operating Hours and at other times shall always be subject to reasonable rules and regulations therefor from time to time established by Landlord by suitable notice.

Tenant acknowledges that, in all events, Tenant is responsible for providing security to the Premises and its own personnel, and Tenant shall indemnify, defend with counsel of Landlord's selection, and save Landlord harmless from any claim for injury to person or damage to property asserted by any personnel, employee, guest, invitee or agent of Tenant which is suffered or occurs in or about the Premises or in or about the Building by reason of the act of an intruder or any other person in or about the Premises or the Building.

ARTICLE III

RENT

3.1 FIXED RENT. Tenant agrees to pay to Landlord, without notice, demand, or off-set or deduction, except as set forth herein, on the Rent Commencement Date and thereafter, monthly, in advance, on the first day of each and every calendar month during the Lease Term, a sum equal to the monthly Fixed Rent specified in Section 1.2 hereof. Until further notice all payments of rent hereunder shall be sent in accordance with the rent payment direction attached as Exhibit F.

ARTICLE IV

USE OF PREMISES

4.1 PERMITTED USE. Tenant agrees that the Premises shall be used and occupied by Tenant only for the purpose specified as the use thereof in Section 1.2 of this Lease, and for no other purpose or purposes.

Tenant further agrees to conform to the following provisions during the entire Lease Term:

(a) Tenant shall cause all freight (including furniture, fixtures and equipment used by Tenant in the occupancy of the Premises) to be delivered to or removed from the Building and the Premises in accordance with reasonable rules and regulations established by Landlord therefor, and in accordance with the Condominium Documents (as hereinafter defined), and Landlord may require that such deliveries or removals be undertaken during periods other than Normal Building Operating Hours;

(b) Tenant shall not place on the exterior of exterior walls (including both interior and exterior surfaces of windows and doors) or on any part of the Building outside the Premises, any sign, symbol, advertisement or the like visible to public view outside of the Premises. Landlord shall install, at Landlord’s cost, on the door to the Premises a building standard sign identifying Tenant and shall list Tenant on the Building directory. Landlord has established standards for such signs and Tenant agrees to conform to the same and to submit for Landlord's prior approval a plan or

sketch of the sign to be placed on such entry doors. Without limitation, lettering on windows and window displays are expressly prohibited. Tenant will not install drapes, window blinds or other window coverings on exterior windows except for those approved by Landlord and in all events all such coverings shall be of a color approved by Landlord;

(c) Tenant shall not perform any act or any practice which may injure the Premises, or any other part of the Building, or cause any offensive odors or loud noise, or constitute a nuisance or a menace to any other tenant or tenants or occupants or other persons in the Building, or be detrimental to the reputation or appearance of the Building. In no event may any cooking or food preparation be carried on in the Premises without Landlord's prior consent, nor may any vending machines be installed at the Premises except those expressly approved by Landlord;

(d) Tenant shall conduct Tenant's business in the Premises in such a manner that Tenant's invitees shall not collect, line up or linger in the lobby or corridors of the Building, but shall be entirely accommodated within the Premises;

(e) Tenant shall comply and shall cause all employees to comply with all rules and regulations from time to time established by Landlord by suitable notice, with the Condominium Documents and with the Land Disposition Agreement, dated June 26, 1986 by and among certain parties, including the Boston Redevelopment Authority and Landlord, as in effect from time to time (the "Land Disposition Agreement"). Landlord shall not, however, be responsible for the noncompliance with any such rules, regulations, Condominium Documents and Land Disposition Agreement by any other tenant or occupant of the Building. It is understood that this lease is subject and subordinate to the Condominium Documents and all rights of Tenant hereunder shall be exercised in accordance with the Condominium Documents;

(f) Tenant shall not use the name of the Building directly or indirectly in connection with Tenant's business, except as a part of Tenant's address and directing visitors to Tenant's location in the Building, and Landlord reserves the right to change the name of the Building at any time;

(g) The Tenant shall not use, handle, store, release or discharge hazardous materials, oil, or hazardous wastes in the demised premises.

4.2 ALTERATIONS. After initial completion of any work to be done by Tenant as provided in Article VI, Tenant shall not alter or add to the Premises, except in accordance with written consent from Landlord, which Landlord agrees not unreasonably to withhold as to alterations or additions which (i) are not visible from the exterior of the Premises and (ii) do not affect the structure or any

mechanical, electrical or plumbing system of the Building. Tenant's work as described in Article VI and all other alterations made by Tenant shall be made in accordance with all applicable laws, in a good and first-class workmanlike manner and in accordance with the requirements of Landlord's insurers and Tenant's insurers. Without limitation, said Tenant's work as described in Article VI and all other alterations made by Tenant shall be performed in accordance with the provisions of this Article IV and of Article VI. Any contractor or other person undertaking any alterations of the Premises on behalf of Tenant shall be covered by Commercial General Liability and Workmen's Compensation insurance with coverage limits acceptable to Landlord and evidence thereof shall be furnished to Landlord prior to the performance by such contractor or person of any work in respect of the Premises. All work performed by Tenant in the Premises shall remain therein (unless Landlord directs Tenant to remove the same on termination) and, at termination, shall be surrendered as a part thereof, except for Tenant's usual trade furniture and equipment, if movable, installed prior to or during the Lease Term at Tenant's cost, which trade furniture and equipment Tenant may remove upon the termination of this Lease provided that Tenant is not then in default hereunder. Until such time as any such default is cured, Landlord shall have a security interest in such trade furniture and equipment. Tenant agrees to repair any and all damage to the Premises resulting from such removal (including removal of Tenant's improvements directed by Landlord) or, if Landlord so elects, to pay Landlord for the cost of any such repairs forthwith after billing therefor. Notwithstanding the foregoing, Tenant may, without Landlord's prior consent or approval, make cosmetic alterations (i.e., any interior alterations that are non-structural and do not affect the Building systems) that do not exceed $10,000 per project.

ARTICLE V

ASSIGNMENT AND SUBLETTING

5.1 PROHIBITION. Notwithstanding any other provisions of this Lease, except as set forth in this Article V, Tenant covenants and agrees that it will not assign this Lease or sublet (which term, without limitation, shall include the granting of concessions, licenses, management arrangements and the like) the whole or any part of the Premises without, in each instance, having first received the express written consent of Landlord, which shall not be unreasonably withheld, conditioned or delayed; provided, however, that in granting such consent, Landlord shall be entitled to take into account all factors which a reasonable landlord would consider and, without limitation, Landlord may withhold such consent if Landlord determines in the exercise of its reasonable business judgment that (a) the proposed assignee or sublessee does not have the financial capacity to perform its obligations under this lease or the sublease, as the case may be, (b) the proposed assignee or sublessee does not have a business reputation and image consistent with the quality and image of the Building, (c) the proposed assignee or sublessee is then engaged in negotiations with the Landlord for space in the

Commercial Unit (or within the prior six (6) months has been so involved) or (d) the proposed assignee or sublessee is a governmental or quasi governmental agency or authority; and notwithstanding anything to the contrary herein, Landlord may withhold, in its sole discretion, its consent to a subletting of less than all the Premises. Any assignment of this Lease (which term shall include the sale or transfer of fifty percent (50%) or more of the stock in Tenant (other than in a Financing Transaction) as set forth below), or subletting of the whole or any part of the Premises (other than as permitted to a subsidiary or a controlling corporation as set forth below) by Tenant without Landlord's express consent shall be invalid, void and of no force or effect. In any case where Landlord shall consent to such assignment or subletting, the Tenant named herein shall remain fully liable for the obligations of Tenant hereunder, including, without limitation, the obligation to pay the Fixed Rent and other amounts provided under this Lease. Any such request shall set forth, in detail reasonably satisfactory to Landlord, the identification of the proposed assignee or sublessee, its financial condition and the terms on which the proposed assignment or subletting is to be made, including, without limitation, the rent or any other consideration to be paid in respect thereto and such request shall be treated as Tenant's warranty in respect of the information submitted therewith.

For the avoidance of doubt, any sale of the capital stock of the Tenant in any transaction or series of related transactions the goal of which is to finance the ongoing business and operations of the Tenant and which involve professional investors who typically invest in businesses like Tenant (a “Financing Transaction”) shall not be deemed a sublease or assignment under this Article V, provided that the management of Tenant has not changed as a result of such a financing transaction..

It shall be a condition of the validity of any such assignment or subletting that the assignee or sublessee agrees directly with Landlord, in form satisfactory to Landlord, to be bound by all the obligations of Tenant hereunder, including, without limitation, the obligation to pay Fixed Rent and other amounts provided for under this Lease and the covenant against further assignment and subletting, but such assignment or subletting shall not relieve the Tenant named herein of any of the obligations of Tenant hereunder, and Tenant shall remain fully liable therefor. In no event, however, shall Tenant assign this Lease or sublet the whole or any part of the Premises to a proposed assignee or sublessee which has been judicially declared bankrupt or insolvent according to law, or with respect to which an assignment has been made of property for the benefit of creditors, or with respect to which a receiver, guardian, conservator, trustee in involuntary bankruptcy or similar officer has been appointed to take charge of all or any substantial part of the proposed assignee's or sublessee's property by a court of competent jurisdiction, or with respect to which a petition has been filed for reorganization under any provisions of the Bankruptcy Code now or hereafter enacted, or if a proposed assignee or sublessee has filed a petition for such reorganization, or for arrangements under any provisions of the Bankruptcy Code

now or hereafter enacted and providing a plan for a debtor to settle, satisfy or extend the time for the payment of debts. Tenant shall, upon demand, reimburse Landlord for the reasonable legal fees and expenses incurred by Landlord in processing any request to assign this Lease or to sublet all or any portion of the Premises up to a maximum of $2,500, whether or not Landlord agrees thereto, and if Tenant shall fail promptly so to reimburse Landlord, the same shall be a default in Tenant's monetary obligations under this Lease.

Without limiting Landlord's discretion to grant or withhold its consent to any proposed assignment or subletting, if Tenant requests Landlord's consent to assign this Lease or sublet all or any portion of the Premises, Landlord shall have the option, exercisable by written notice to Tenant given within twenty-one (21) days after Landlord's receipt of such request, to terminate this Lease as of the date specified in such notice for the entire Premises, in the case of an assignment or subletting of the whole, and for the portion of the Premises, in the case of a subletting of a portion. In the event Landlord elects to exercise the foregoing recapture right, Tenant may, within five (5) days, elect to rescind its request to such assignment of subletting of the Premises and, if such rescission is timely exercised, Landlord's recapture shall be ineffective and this Lease shall continue in full force and effect, but Tenant may make such rescission only one (1) time during any twelve (12) month period. In the event of termination in respect of a portion of the Premises, the portion so eliminated shall be delivered to Landlord on the date specified free and clear of all occupants and their effects, broom clean and in good order and condition in the manner provided in Section 4.2 at the end of the Lease Term and Tenant shall construct demising walls at Tenant's expense in accordance with specifications made by Landlord. To the extent necessary in Landlord's judgment, Landlord, at its own cost and expense, may have access to and may make modification to the Premises so as to make such portion delivered to Landlord a self-contained rental unit with access to common areas, elevators and the like. Fixed Rent, Tenant's Share and Tenant's Office Expenses Share and Tenant's Commercial Expenses Share (as hereinafter defined) shall be adjusted on a pro rata basis according to the extent of the Premises for which the Lease is terminated. Without limitation of the rights of Landlord hereunder in respect thereto, if there is any assignment of this Lease by Tenant for consideration or a subletting of the whole of the Premises by Tenant at a rent or other consideration which exceeds the rent payable hereunder by Tenant, or if there is a subletting of a portion of the Premises by Tenant at a rent in excess of the subleased portion's pro rata share of the rent payable hereunder by Tenant, then Tenant shall pay to Landlord, as additional rent, forthwith upon Tenant's receipt of the consideration (or the cash equivalent thereof) therefor, 50% of any such excess. The provisions of this paragraph shall apply to each and every assignment of the Lease and each and every subletting of all or a portion of the Premises, whether to a subsidiary or controlling corporation of the Tenant or any other person, firm or entity, in each case on the terms and conditions set forth herein. For the purposes of this Section 5.1, the term "rent" shall mean all Fixed Rent, additional rent or other payments and/or consideration payable by one party to another for the use and occupancy of all or a portion of the Premises.

The provisions of this Section 5.1 relating to the necessity of Landlord's prior consent shall not, however, be applicable to an assignment of this Lease by Tenant to a subsidiary (for such period of time as the stock of such subsidiary continues to be owned by Tenant, it being agreed that the subsequent sale or transfer of the stock of such subsidiary (in any transaction or series of transactions other than a Financing Transaction) that results in Tenant holding less than fifty percent (50%) of the capital stock of such subsidiary shall be treated as if such sale or transfer were, for all purposes, an assignment of this Lease governed by the provisions of this Section 5.1) or controlling corporation, provided (and it shall be a condition of the validity of any such assignment) that such subsidiary or controlling corporation agree directly with Landlord to be bound by all of the obligations of Tenant hereunder, including, without limitation, the obligation to pay the rent and other amounts provided for under this Lease, the covenant to use the Premises only for the purposes specifically permitted under this Lease and the covenant against further assignment; but such assignment shall not relieve Tenant herein named of any of its obligations hereunder, and Tenant shall remain fully liable therefor. For purposes of this Lease, if Tenant is a corporation, the sale or transfer of fifty percent (50%) or more of the stock of Tenant (whether such sale or transfer occurs at one time or at intervals so that, in the aggregate, over the term of this Lease, such a transfer shall have occurred) shall be treated as if such sale or transfer were, for all purposes, an assignment of this Lease and shall be governed by the provisions of this Section 5.1 unless such transaction(s) constitute a Finacing Transaction. To enable Landlord to determine ownership of Tenant, Tenant agrees to furnish to Landlord, from time to time and promptly after Landlord's request therefor, an accurate listing of the holders of its stock and/or the holders of the stock of any subsidiary/assignee or subsidiary/sublessee as of the date of the execution of this Lease and/or as of the date of Landlord's request. Landlord agrees that it will enter into a non-disclosure agreement mutually acceptable to both Landlord and Tenant before obtaining any of Tenant’s confidential information hereunder.

ARTICLE VI

DELIVERY OF PREMISES AND RESPONSIBILITY FOR REPAIRS AND CONDITION OF PREMISES

6.1 DELIVERY OF POSSESSION OF PREMISES. The Premises shall be conclusively deemed delivered to Tenant as soon as the initial work to be done by Landlord as set forth on the plan annexed hereto as Exhibit C hereto (“Landlord’s Work”) has been substantially completed by Landlord in the Premises or would have been so completed except for Tenant Delays, as hereinafter specified, and the elevator, plumbing, air conditioning and electric facilities are initially substantially available to Tenant in accordance with the obligations assumed by Landlord hereunder. For purposes of the foregoing, the Landlord’s work will be deemed “substantially complete” only when (i) Landlord’s architect certifies that

Landlord's Work has been completed in accordance with the specifications agreed to by the Landlord and Tenant (other than Punch List Items (as defined below), and (ii) the approval required for occupancy of the Premises shall be granted by the applicable authority of the City of Boston. Such facilities shall not be deemed to be unavailable if only minor or insubstantial details of construction, decoration or mechanical adjustments remain to be done or if such facilities are temporarily reduced or their availability temporarily delayed as a reasonable and necessary incident in connection with the opening of the Building. The Premises shall not be deemed to be unready for Tenant's occupancy or incomplete if only minor or insubstantial details of construction, decoration or mechanical adjustments (the "Punch List Items") remain to be done in the Premises or any part thereof. If any delay in the availability of the Premises for occupancy is

(i) due to special work (beyond that of the type, quality and quantity specified in Exhibit C), changes, alterations or additions required or made by Tenant in the layout or finish of the Premises or any part thereof;

(ii) caused in whole or in part by Tenant through the delay of Tenant in submitting any plans and/or specifications, supplying information, approving plans, specifications or estimates, giving authorizations or otherwise; or

(iii) caused in whole or in part by other delays and/or defaults on the part of Tenant or its contractors (the matters in these subsections i, ii and iii being sometimes referred to as "Tenant Delays")

then the Rent Commencement Date be deemed to occur on the date the Premises would have been ready except for Tenant Delays; *provided however*, Landlord shall still be responsible for the substantial completion of the Landlord's Work.

If as hereinabove provided the Premises are so deemed ready for Tenant's occupancy prior to the time they are actually ready for Tenant's occupancy, Tenant shall not (except with Landlord's consent) be entitled to take possession of the Premises for use as set forth herein until the Premises are in fact actually ready for such occupancy, notwithstanding the fact because the Premises shall have as above stated been deemed ready for such occupancy that the term hereof shall on that account have commenced.

Any of Landlord's work in the Premises not fully completed on the commencement date of the term hereof shall thereafter be so completed with reasonable diligence by Landlord.

6.2. INFORMATION. The Landlord's Work as described in Exhibit C consists among other things of certain painting and carpeting and it will be necessary for Tenant to supply Landlord with information and approval including the selection of carpeting and paint colors, so that Landlord may timely perform Landlord's Work. Tenant shall respond to any request by Landlord for information and approvals within five (5) days.

6.3. PREPARATION OF PREMISES.

(a) By Landlord. Except as may be otherwise approved in writing by the Landlord, all work necessary to prepare the Premises for Tenant's occupancy, including work to be performed at Tenant's expense, shall be performed by contractors employed by and paid by Landlord and shall be conducted in compliance with all applicable laws, rules, regulations and codes.

(b) All of the Landlord's Work shall be done at Landlord's sole cost and expense, except that on the Commencement Date Tenant shall pay to Landlord $40,000.00 to reimburse Landlord for certain of such costs.

(c) If any work including but not by way of limitation, installation of building equipment by the manufacturer or distributor thereof, shall be performed by contractors not employed by Landlord, Tenant shall take all reasonable measures to the end that such contractor shall cooperate in all ways with Landlord's contractors to avoid any delay to the work being performed by Landlord's contractors in the Premises or elsewhere in the Building or conflict in any other way with the performance of such work.

(d) All materials and workmanship to be furnished and installed by Landlord shall be in accordance with the building standard as detailed and defined in Exhibit C. Tenant shall bear all other costs of preparing the Premises for its occupancy in accordance with the Plans including without limitation, the cost of substitutes for, or quantities in excess of, any items specified in Exhibit C, and such cost in the case of work performed by Landlord on behalf of Tenant, at Tenant's expense, shall be increased by 10% for Landlord's overhead.

(e) Any actual additional cost to Landlord in connection with the completion of the Premises in accordance with the terms of this Lease (including Exhibit C) resulting from Tenant Delays shall be promptly paid by Tenant to Landlord. For the purposes of the next preceding sentence, the term "additional cost to Landlord" shall mean the cost over and above such cost as would have been the aggregate cost to Landlord of completing the Premises in accordance with the terms of this Lease and Exhibit C had there been no Tenant Delays, as such cost is determined by Landlord's architect. Nothing contained in this provision shall limit or qualify or prejudice any other covenants, agreements, terms, provisions and conditions contained in this Lease.

(f) With Landlord's prior written consent, Tenant shall have the right to enter the Premises prior to the Commencement Date, without payment of rent, to perform such work or decoration as to be performed by, or under the direction or control of, Tenant. Such right of entry shall be deemed a license from Landlord to Tenant and any entry thereunder shall be at the risk of Tenant.

(g) Tenant shall be conclusively deemed to have agreed that Landlord has performed all of its obligations under this Article VI unless not later than the end of the second calendar month next beginning after the Commencement Date, Tenant shall give Landlord written notice specifying the respects in which Landlord has not performed any such obligation.

6.4 REPAIRS TO BE MADE BY LANDLORD. Except as otherwise provided in this Lease and to the extent the obligation to maintain the same is the responsibility of the Landlord under the Condominium Documents, Landlord agrees to keep in good order, condition and repair the common areas of the commercial portions of the Building (including, but not limited to, the base Building systems), insofar as any of the foregoing affects the Premises and any damage cause by Landlord's negligence or willful misconduct subject to the provisions of Section 13.19. Landlord shall in no event be responsible to Tenant for the condition of glass in and about the Premises or for the doors leading to the Premises, or for any condition in the Premises or the Building caused by any act or neglect of Tenant or any contractor, agent, employee or invitee of Tenant, or anyone claiming by, through or under Tenant, or for any condition of the Building which is not the responsibility of the Landlord under the Condominium Documents. Landlord shall not be responsible to make any improvements or repairs to the Building or the Premises other than as expressed in this Section 6.4 unless otherwise expressly provided in this Lease.

Landlord shall never be liable for any failure to make repairs which, under the provisions of this Section 6.4 or elsewhere in this Lease, Landlord has undertaken to make unless: (a) Tenant has given notice to Landlord of the need to make such repairs as a result of a condition in the Building or in the Premises requiring any repair for which Landlord is responsible; and (b) Landlord has failed to commence to make such repairs within a reasonable time after receipt of such notice if any repairs are, in fact, necessary.

6.5 TENANT'S AGREEMENT. Tenant agrees that Tenant will keep neat and clean and maintain in good order, condition and repair, the Premises and every part thereof throughout the Lease Term, excepting only those repairs for which Landlord is responsible under the terms of this Lease and damage by fire or other casualty or as a consequence of the exercise of the power of eminent domain, and shall surrender the Premises at the end of the term, in such condition. Without

limitation, Tenant shall maintain and use the Premises in accordance with all applicable laws, ordinances, governmental rules and regulations, directions and orders of officers of governmental agencies having jurisdiction and in accordance with the requirements of Landlord's and/or Tenant's insurers, and shall, at Tenant's own expense, obtain and maintain in effect all permits, licenses and the like required by applicable law. Tenant shall not permit or commit any waste, and Tenant shall be responsible for the cost of repairs which may be made necessary by reason of damage to any areas in the Building, including the Premises, by Tenant, Tenant's contractors or Tenant's agents, employees or invitees, or anyone claiming by, through or under Tenant. Landlord may replace as needed any bulbs and ballasts in the Premises during the Lease Term at Tenant's cost and expense, or Landlord may require Tenant to replace the same, at Tenant's cost and expense.

If repairs are required to be made by Tenant pursuant to the terms hereof, Landlord may demand that Tenant make the same forthwith, and if Tenant refuses or neglects to commence such repairs and complete the same with reasonable dispatch after such demand, Landlord may (but shall not be required to do so) make or cause such repairs to be made and shall not be responsible to Tenant for any loss or damage that may accrue to Tenant's stock or business by reason thereof. If Landlord makes or causes such repairs to be made, Tenant agrees that Tenant will forthwith, on demand, pay to Landlord the cost thereof, and if Tenant shall default in such payment, Landlord shall have the remedies provided for the nonpayment of rent or other charges payable hereunder.

6.6 FLOOR LOAD - HEAVY MACHINERY. Tenant shall not place a load upon any floor in the Premises exceeding the lesser of (a) the floor load per square foot of area which such floor was designed to carry as certified by Landlord's architect and (b) the floor load per square foot of area which is allowed by law. Landlord reserves the right to prescribe the weight and position of all business machines and mechanical equipment, including scales, which shall be placed so as to distribute the weight. Business machines and mechanical equipment shall be placed and maintained by Tenant at Tenant's expense in settings sufficient, in Landlord's judgment, to absorb and prevent vibration, noise and annoyance. Tenant shall not move any safe, heavy machinery, heavy equipment, freight, bulky matter or fixtures into or out of the Building without Landlord's prior consent.

If such safe, machinery, equipment, freight, bulky matter or fixtures requires special handling, Tenant agrees to employ only persons holding a Master Rigger's License to do said work, and that all work in connection therewith shall comply with applicable laws and regulations. Any such moving shall be at the sole risk and hazard of Tenant and Tenant will exonerate, indemnify and save Landlord harmless against and from any liability, loss, injury, claim or suit resulting directly or indirectly from such moving. Tenant shall schedule such moving at such times as Landlord shall require for the convenience of the normal operations of the Building.

ARTICLE VII

SERVICES TO BE FURNISHED BY LANDLORD AND UTILITY CHARGES

7.1 LANDLORD'S SERVICES. Landlord covenants during the Lease Term during Normal Building Operating Hours:

(1) to provide heating and air-conditioning in the Premises during the normal heating and air-conditioning seasons;

(2) to furnish cold water for ordinary toilet, lavatory and drinking purposes. If Tenant requires water for any other purpose, including without limitation, in connection with the business conducted in the Premises, Tenant shall pay the Landlord a fair and equitable charge therefor determined by Landlord to reimburse Landlord for the cost of such water and related sewer use charge (including a charge to reimburse Landlord for the cost of metering Tenant's usage);

(3) to furnish non-exclusive passenger elevator service;

(4) to provide non-exclusive freight elevator service, subject to scheduling by Landlord;

(5) to furnish, through Landlord's employees or independent contractors, the cleaning services listed in Exhibit D, if any; and

(6) to furnish, through Landlord's employees or independent contractors, additional Building operation services (additional in terms of quality and/or quantity to those otherwise required to be provided to Tenant hereunder) upon reasonable advance request of Tenant at rates from time to time established by Landlord (currently $45 per hour, but subject to change) to be paid by Tenant provided the same may be reasonably and conveniently provided by Landlord. Tenant hereby agrees to pay to Landlord the cost of such services as additional rent upon demand by Landlord.

7.2 PAYMENT OF UTILITY CHARGES. With respect to electricity for lighting and equipment in the Premises, if the same is separately metered, beginning on the Commencement Date, Tenant agrees to pay all bills therefor promptly to the utility company furnishing the same and, if requested by Landlord, provide Landlord with evidence of such payment. If such utility company shall have a lien on the Premises for nonpayment of such charges and Tenant shall fail at any time to make payment of same, without limitation of Landlord's rights on account of such failure, Tenant shall thereafter, if requested by Landlord, pay to Landlord,

when monthly Fixed Rent is next due and thereafter on Landlord's demand, an amount reasonably estimated by Landlord to be sufficient to discharge any such lien in the event of a further failure of Tenant to pay any such electric charges when due. Landlord shall hold the amounts from time-to-time deposited under this Section 7.2 as security for payment of such electric charges and may, without limitation of remedies on account of Tenant's failure to make any subsequent payment of electric charges, use such amounts for such payments. Such amount or such portion thereof as shall be unexpended at the expiration of this Lease shall, upon full performance of all Tenant's obligations hereunder, be repaid to Tenant without interest.

If the Premises are not separately metered, Tenant shall pay to Landlord, within ten (10) days after Landlord's statement therefor is delivered to Tenant (which shall include reasonable documentation of how such amount was calculated), Tenant's pro rata share (as determined by Landlord) of electric charges for the period in question in respect of such areas of the Building which include the Premises. Landlord reserves the right to require Tenant to install, at Tenant's cost and expense, a separate electric meter for the Premises in the event Landlord determines that Tenant's use of electricity exceeds, on a per square foot basis, the use of electricity by other occupants of the area involved.

7.3. ENERGY CONSERVATION. Notwithstanding anything to the contrary in this ARTICLE VII or elsewhere in this Lease, Landlord shall have the right to institute such policies, programs and measures as may be necessary or desirable, in Landlord's discretion, for the conservation and/or preservation of energy or energy related services, or as may be required to comply with any applicable codes, rules and regulations, whether mandatory or voluntary.

ARTICLE VIII

REAL ESTATE TAXES AND OTHER EXPENSES

8.1 TENANT'S SHARE OF REAL ESTATE TAXES.

(a) For the purposes of this Section:

(i) The term “Tax Period” shall mean the period during which Taxes (as hereinafter defined) are required to be paid under applicable law. Thus, under the law presently in effect in the Commonwealth of Massachusetts, Tax Period means the period from July 1 of a calendar year to June 30 of the subsequent calendar year. Suitable adjustment in the determination of Tenant's obligation under this Section 8.1 shall be made in the computation for any Tax Period which is greater than or less than twelve (12) full calendar months.

(ii) Reference is made to the fact that a condominium (the "Condominium") which includes the Building has been created pursuant to applicable provisions of Massachusetts law by recording with the Suffolk County Registry of Deeds a Master Deed. (Said Master Deed and all other instruments of record with said Registry of Deeds which create or govern the operation of the Condominium, as the same may be amended from time to time in accordance with their terms, being referred to herein as the "Condominium Documents"). As is set forth in said Condominium Documents, a portion of the Building and of certain areas appurtenant thereto are to be devoted to retail, service, office and other commercial purposes (said portion being referred to as the "Commercial Unit" in the Condominium Documents, and being so referred to herein).

(iii) The term "Taxes" shall mean all real estate taxes and assessments (which term, for purposes of this provision, shall include water and sewer use charges), special or otherwise, levied or assessed upon or with respect to the Commercial Unit or any part thereof and all ad valorem taxes for any personal property of Landlord used in connection therewith. Should the Commonwealth of Massachusetts, or any political subdivision thereof, or any other governmental authority having jurisdiction over the Commercial Unit, (1) impose a tax, assessment, charge or fee, which Landlord shall be required to pay, by way of substitution for or as a supplement to such real estate taxes and ad valorem personal property taxes, or (2) impose an income or franchise tax or a tax on rents in substitution for or as a supplement to a tax levied against the Commercial Unit or any part thereof and/or the personal property used in connection with the Commercial Unit or any part thereof, all such taxes, assessments, fees or charges (hereinafter defined as "in lieu of taxes") shall be deemed to constitute Taxes hereunder. Taxes shall also include, in the year paid, all fees and costs incurred by Landlord in seeking to obtain a reduction of, or a limit on the increase in, any Taxes, regardless of whether any reduction or limitation is obtained. Except as hereinabove provided with regard to "in lieu of taxes", Taxes shall not include any inheritance, estate, succession, transfer, gift, franchise, net income or capital stock tax.

(b) Beginning on the Rent Commencement Date, in the event that the Taxes imposed with respect to the Commercial Unit shall be greater during any Tax Period than the Base Tax Amount:

(i) Tenant shall pay to Landlord, as additional rent, Tenant's Share of the amount by which the Taxes imposed with respect to the Commercial Unit for such Tax Period exceed the Base Tax Amount, apportioned for any fraction of a Tax Period contained within the Term, and

(ii) Landlord shall submit to Tenant a statement setting forth the amount of such additional rent, and within ten (10) days after the delivery of such statement (whether or not such statement shall be timely), Tenant shall pay to Landlord the payment required under subparagraph (i) above. So long as Taxes shall be payable in installments under applicable law, Landlord may submit such statements to Tenant in similar installments. The failure by Landlord to send any statement required by this subparagraph shall not be deemed to be a waiver of Landlord's right to send such statement.

(c) Tenant's payment in respect of increases in Taxes shall be equitably adjusted for and with respect to any portion of the Term which does not include an entire Tax Period.

(d) If Tenant is obligated to pay any additional rent as aforesaid with respect to any Tax Period or fraction thereof during the Term, then Tenant shall pay, as additional rent, on the first day of each month of the next ensuing Tax Period, estimated monthly tax escalation payments in an amount from time to time estimated by Landlord to be sufficient to provide Landlord, in the aggregate, a sum equal to Tenant's Share of the Taxes in excess of the Base Tax Amount, ten (10) days, at least, before the day on which payments on account of Taxes by Landlord would become delinquent. Estimated monthly tax escalation payments for each ensuing Tax Period shall be made retroactively to the first day of the Tax Period in question. Following the close of each Tax Period for and with respect to which Tenant is obligated to pay any additional rent as aforesaid, Landlord shall submit the statement set forth in paragraph (b)(ii) of this Section 8.1 and in the event the total of the estimated monthly tax escalation payments theretofore made by Tenant to Landlord for such Tax Period does not equal Tenant's Share of the Taxes in excess of the Base Tax Amount for such Tax Period, Tenant shall pay any deficiency to Landlord as shown by such statement within ten (10) days after the delivery of such statement (whether or not such statement shall be timely). If the total of the estimated monthly tax escalation payments paid by Tenant during such Tax Period exceed the actual amount of Tenant's Share of the Taxes in excess of the Base Tax Amount for said Tax Period, Landlord shall credit the amount of such overpayment against subsequent obligations of Tenant for additional rent under this Lease (or refund such overpayment if the Term has ended and Tenant has no further obligations to Landlord under the Lease).

(e) When the applicable tax bill is not available prior to the end of the Term, then a tentative computation shall be made by Landlord on the basis of the Taxes for the next prior Tax Period, with a final adjustment to be made between Landlord and Tenant promptly after Landlord shall have received the applicable tax bill.

(f) Payments by Tenant to Landlord on account of Taxes shall not be considered as being held in trust, in escrow or the like, by Landlord; it being the express intent of Landlord and Tenant that Tenant shall in no event be entitled to receive interest upon, or any payments on account of earnings or profits derived from, such payments by Tenant to Landlord. Landlord shall have the same rights and remedies for the non-payment by Tenant of any amounts due on account of such Taxes as Landlord has hereunder for the failure of Tenant to pay the Fixed Rent.

(g) It is understood that the foregoing provisions of this Section 8.1 are predicated upon the inclusion of the Premises as part of a single Commercial Unit within the Condominium and with the continued existence of the Condominium. If at any time during the Lease Term the Building and Lot are not taxed on a Condominium basis, then during such time for the purposes of this Section 8.1 "Taxes" shall mean the product of (i) such taxes, assessments, payments, charges, fees and costs of the type described in subsection (a) of this Section 8.1 assessed against the Building and Lot and the personal property of Landlord therein multiplied by (ii) the percentage interest of the Commercial Unit in the Condominium as set forth in the Condominium Documents. Should the Commercial Unit be divided into more than one condominium unit within the Condominium then the Base Tax Amount and the Tenant's Share shall be adjusted to take into account such division as reflected by the applicable percentage interest in the Condominium of the unit in which the Premises are located and the proportionate area of the Premises in such unit, and the Tenant shall pay its share of the increase in Taxes in respect of the unit in which the Premises are located over and above the Base Tax Amount as determined for such unit.

8.2 TENANT'S SHARE OF OPERATING EXPENSES.

(a) For the purposes of this Section:

(i) The term "Operating Year" shall mean each successive fiscal year (as adopted by Landlord) in which any part of the Term of this Lease shall fall.

(ii) The term “Commercial Operating Expenses” shall mean (i) all expenses, costs and disbursements of every kind and nature, paid or incurred by Landlord in operating, insuring, promoting, owning, managing, leasing, repairing and maintaining the Commercial Unit and its appurtenances, and (ii) the charges, expenses and assessments (regular or special) payable by the Commercial Unit owner under the Condominium Documents and/or as may be otherwise assessed with respect to the Commercial Unit by the Condominium Trustees in accordance with the provisions of the Condominium Documents (including any working capital and other reserves); including, but without limitation: premiums for fire, casualty, liability and such other insurance as Landlord may from time to time maintain; security expenses; compensation and all fringe benefits, workmen's compensation insurance premiums and payroll taxes paid by Landlord to, for or with respect to all persons engaged in operating, maintaining, managing or cleaning; fuel costs; steam, water, sewer, electric, gas, telephone, and other utility charges not otherwise billed to tenants by Landlord or the utility; expenses incurred in connection with the central plant furnishing heating, ventilating and air conditioning to the Commercial Unit (and to the Building where and to the extent the expenses of the Building are otherwise allocable to the Commercial Unit); costs of lighting, ventilating, (including maintaining and repairing ventilating fans and fan rooms); costs of repairing and maintaining fire protection systems; costs of building and cleaning supplies and equipment (including rental); cost of maintenance, cleaning and repairs; cost of snow plowing or removal, or both, and care of interior and exterior landscaping; the so-called supplemental payment for the maintenance and improvement of the Boston Public Garden required to be made by the Landlord in accordance with the provisions of the Condominium Documents and/or the Land Disposition Agreement; payments to independent contractors under contracts for cleaning, operating, management, maintenance and/or repair (which payments may be to affiliates of Landlord); all other expenses paid in connection with cleaning, operating, management, maintenance and repair, including reasonable reserves for the replacement of capital improvements and equipment contained in and/or used in connection with operations; costs of any capital improvements completed after the original construction of the Building as reasonably amortized by Landlord, together with a reasonable interest factor thereon to the extent the cost of the particular capital improvement exceeds the amount of the unused reserve, if any, for the replacement thereof previously included in Commercial Operating Expenses and insurance proceeds, if any, received by Landlord on account of damage to the particular capital improvement. Commercial Operating Expenses shall not, however, include the following:

A. Costs of alterations of any tenant's premises for a particular tenant and not for the benefit of the office portions of the Commercial Unit or any group of tenants therein and services provided exclusively to and for the benefit of the non-office portions of the Commercial Unit as determined by Landlord;

B. Principal or interest payments on loans secured by mortgages or trust deeds on the Commercial Unit and/or on the Building and/or Lot;

C. Any portion of such common expenses incurred in the maintenance and operation of the below-grade parking garage facilities of the Condominium; and

D. Such of the foregoing expenses which are paid or incurred by Landlord (i) for cleaning and maintaining the premises in the Commercial Unit devoted solely to office uses, (ii) in furnishing security services exclusively for the benefit of said office premises, and (iii) in furnishing heating, ventilating and air-conditioning to and exclusively for the benefit of said office premises, (however, the expenses, relating to the cooling tower and condenser water system and other services, systems and equipment serving or for the benefit of both said office premises and the retail and service portions of the Commercial Unit shall be included in Commercial Operating Expenses), and (iv) such other services which are provided exclusively to and for the benefit of the office portion of the Commercial Unit. Such expenses being excluded from "Commercial Operating Expenses" under this subsection D are hereinafter sometimes referred to as "Office Operating Expenses".

(iii) The term "Tenant's Commercial Expenses Share" shall mean the fraction, the numerator of which is 8,104 (being the agreed upon gross leaseable floor area of the Premises), and the denominator of which is the greater of (i) the total square footage of leased floor area

within the Commercial Unit as of the first day of the calendar year to which the costs and expenses relate and (ii) ninety-five percent (95%) of the total gross leaseable floor area within the Commercial Unit as of the first day of such calendar year to which such costs and expenses relate.

(iv) The term “Tenant's Office Expenses Share” shall mean the fraction, the numerator of which is 8,104, and the denominator of which is the greater of (x) the total square footage of leased floor area within the Commercial Unit devoted exclusively to office purposes as of the first day of the calendar year to which the cost and expenses relate and (y) 95% of the total leaseable floor area within the Commercial Unit so devoted exclusively to office purposes as of the first day of such calendar year to which said costs and expenses relate.

(v) There shall be excluded from the denominator of any such fraction in subsections (iii) and (iv) above one-half (1/2) of the gross leasable floor area of all space in the Commercial Unit below the first (street floor) level.

If less than 95% of the Commercial Unit's rentable area shall have been occupied by tenant(s) at any time during any Operating Year, Commercial Operating Expenses and Office Operating Expenses (to the extent applicable) shall be determined for such Operating Year to be an amount equal to the like expense which would normally be expected to be incurred had such occupancy been 95% throughout such Operating Year.

(b) After the expiration of each Operating Year, Landlord shall furnish Tenant with a statement setting forth the Tenant's Commercial Expenses Share of the Commercial Operating Expenses for such Operating Year and the Tenant's Office Expenses Share of the Office Operating Expenses for such year. Such statement shall be accompanied by a computation of the amount, if any, of the additional rent payable to Landlord pursuant to this Section.

(c) In the event the total of (i) the Tenant's Commercial Expenses Share of the Commercial Operating Expenses during any Operating Year and (ii) the Tenant's Office Expenses Share of the Office Operating Expenses for such year shall exceed the Base Premises Operating Expenses, then beginning on the Rent Commencement Date, Tenant shall pay to Landlord, as additional rent, an amount equal to such excess.

(d) Said additional rent shall, with respect to the Operating Years in which the Rent Commencement Date and end of the Term of this Lease fall, be adjusted to that proportion thereof as the portion of the Term of this Lease falling within such Operating Year bears to the full Operating Year. If Landlord shall change its fiscal year, appropriate adjustment shall be made for any Operating Year less than twelve months which may result.

(e) Any additional rent payable by Tenant under this Section 8.2 shall be paid within ten (10) days after Landlord has furnished Tenant with the statement described above in paragraph (b) of this Section 8.2.

(f) If with respect to any Operating Year or fraction thereof during the Term, Tenant is obligated to pay any additional rent in respect of increases in such operating expenses as aforesaid, then Tenant shall pay, as additional rent, on the first day of each month of the next ensuing Operating Year, estimated monthly operating escalation payments in an amount from time to time estimated by Landlord to be sufficient to cover, in the aggregate, a sum equal to the excess of (i) the total of (x) Tenant's Commercial Expenses Share of the Commercial Operating Expenses and (y) Tenant's Office Expenses Share of the Office Operating Expenses over (ii) the Base Premises Operating Expenses for the next ensuing Operating Year. Estimated monthly operating escalation payments for each ensuing Operating Year shall be made retroactively to the first day of the Operating Year in question. If the estimated monthly operating escalation payments theretofore made for such Operating Year by Tenant are greater than the amount due as additional rent in respect thereof according to the statement furnished Tenant by Landlord pursuant to paragraph (b) of this Section 8.2, Landlord shall credit the amount of such overpayment against subsequent obligations of Tenant for additional rent under this Lease (or refund such overpayment if the Term has ended and Tenant has no further obligation to Landlord under the Lease); but if such amount due as such additional rent for said Operating Year is greater than the estimated monthly operating escalation payments theretofore made on account of such period, Tenant shall make suitable payment to Landlord within the time set forth in paragraph (e) of this Section 8.2.

(g) Tenant acknowledges that if Landlord is not furnishing any particular work or service, the cost of which, if performed by Landlord, would be included in either Commercial or Office Operating Expenses, to any tenant who has undertaken to perform such work or service in lieu of the performance thereof by Landlord, such operating expenses shall be deemed for purposes of determining such operating expenses under this Section to be increased by an amount equal to the additional operating expenses which would reasonably have been incurred during such period by Landlord if it had at its own expense furnished such work or service to such tenant.

(h) Anything in this lease to the contrary notwithstanding, it is expressly understood and agreed that the designation or use by Landlord from time to time of portions of the Commercial Unit as common areas shall not restrict the Landlord's use of such areas for improvements, structures and/or for retail, office or such other purposes as the Landlord shall determine, the Landlord hereby reserving the unrestricted right to build,

add to, subtract from, lease, license, relocate and/or otherwise use (temporarily and/or permanently), any improvements, kiosks or other structures, parking areas, sidewalks or other such common areas of facilities anywhere upon or within the Commercial Unit for office, retail, or such other purposes as the Landlord shall determine. Nothing herein shall limit the right of the Landlord to change the use to which any part of the Commercial Unit or any other portions of the Building will be used from the purposes specified herein or as originally specified in the Condominium Documents.

(i) Upon at least thirty (30) days' advance notice and during normal business hours, Tenant shall have the right to audit Landlord's books and records regarding the calculation of Operating Expenses and Taxes and the allocation of Tenant's share of same. Tenant shall be able to hire an independent auditor to conduct such audit (provided the compensation of such auditor shall not be on a contingency basis). Tenant shall only audit each calendar year once. Tenant shall maintain the confidentiality of any information obtained as the result of such audit.

ARTICLE IX

INDEMNITY AND PUBLIC LIABILITY INSURANCE

9.1 TENANT'S INDEMNITY. To the maximum extent this agreement may be made effective according to law, and exepting claims resulting from Landlord's negligence or willful misconduct, Tenant agrees to indemnify and save harmless Landlord from and against all claims of whatever nature arising from any act, omission or negligence of Tenant, or Tenant's contractors, licensees, invitees, agents, servants or employees, or arising from any accident, injury or damage whatsoever caused to any person, or to the property of any person, occurring after the commencement of construction work by Tenant, and until the end of the Lease Term and thereafter, so long as Tenant is in occupancy of any part of the Premises, within the Premises, or arising from any accident, injury or damage occurring outside of the Premises, where such accident, damage or injury results or is claimed to have resulted from an act or omission on the part of Tenant or Tenant's agents, employees, independent contractors or invitees.

This indemnity and hold harmless agreement shall include indemnity against all costs, expenses and liabilities incurred in or in connection with any such claim or proceeding brought thereon, and the defense thereof.

9.2 PUBLIC LIABILITY INSURANCE. Tenant agrees to maintain in full force and effect from the date on which Tenant first enters the Premises for any reason, throughout the Lease Term, and thereafter so long as Tenant is in occupancy of any part of the Premises, a policy of Commercial General Liability insurance in accordance with the broadest form of such coverage as is available from time to

time in the jurisdiction in which the Premises are located. The minimum limits of liability of such insurance shall be $3 million per occurrence, Bodily Injury Liability (including death), and $1,000,000 per occurrence, Property Damage Liability, or shall be for such higher limits, if directed by Landlord, as are customarily carried in that area in which the Building is located upon first class office buildings. Such insurance shall be on an occurrence form and non-contributory.

The policy shall also include, but shall not be limited to, the following extensions of coverage:

(i) Contractual Liability, covering Tenant's liability assumed under this Lease;

(ii) Personal Injury Liability in the amount of $3 million annual aggregate, expressly deleting the exclusion relating to contractual assumptions of liability;

(iii) Civil Assault and Battery coverage.

Tenant further agrees to maintain a Workers' Compensation and Employers' Liability Insurance policy. The limit of liability as respects Employers' Liability coverage shall be no less than $100,000 per accident.

Except for Workers' Compensation and Employers' Liability coverage, Tenant agrees that Landlord (and such other persons as are in privity of estate with Landlord as may be set out in notice from time to time) are named as additional insureds. Further, all policies shall be noncancellable with respect to Landlord and Landlord's said designees without 30 days' prior written notice to Landlord. A duplicate original or a Certificate of Insurance evidencing the above agreements shall be delivered to Landlord upon the execution of this Lease.

9.3 TENANT'S RISK. To the maximum extent this agreement may be made effective according to law, Tenant agrees to use and occupy the Premises and to use such other portions of the Building as Tenant is herein given the right to use at Tenant's own risk; and Landlord shall have no responsibility or liability for any loss of or damage to fixtures or other personal property of Tenant for any reason whatsoever. The provisions of this Section shall be applicable from and after the execution of this Lease and until the end of the Lease Term, and during such further period as Tenant may use or be in occupancy of any part of the Premises or of the Building.

9.4 INJURY CAUSED BY THIRD PARTIES. To the maximum extent this agreement may be made effective according to law, Tenant agrees that Landlord shall not be responsible or liable to Tenant, or to those claiming by, through or under Tenant, for any loss or damage that may be occasioned by or through the

acts or omissions of persons occupying adjoining premises or any part of the premises adjacent to or connecting with the Premises or any part of the Building, or otherwise or for any loss or damage resulting to Tenant or those claiming by, through or under Tenant, or its or their property, from the breaking, bursting, stopping or leaking of electric cables and wires, water, gas, sewer or steam pipes, and from roof leaks and the like.

ARTICLE X

LANDLORD'S ACCESS TO PREMISES

10.1 LANDLORD'S RIGHT OF ACCESS. Landlord shall have the right to enter the Premises upon reasonable advance notice, except in case of an emergency, at all reasonable business hours and after normal business hours for the purpose of inspecting or making repairs to the same, and Landlord shall also have the right to make access upon reasonable advance notice available at all reasonable hours to prospective or existing mortgagees or purchasers of any part of the Building. Tenant shall have the right to have one of its personnel accompany any visitors on the Premises.

10.2 EXHIBITION OF SPACE TO PROSPECTIVE TENANTS. For a period of nine (9) months prior to the expiration of the Lease Term, Landlord may have reasonable access to the Premises upon reasonable advance written notice, at all reasonable hours for the purpose of exhibiting the same to prospective tenants, and may post suitable notice on the Premises advertising the same for rent. Tenant shall have the right to have one of its personnel accompany any visitors on the Premises.

ARTICLE XI

FIRE, EMINENT DOMAIN, ETC.

11.1 DAMAGE. In case during the term hereof the Premises shall be partially damaged (as distinguished from “substantially damaged”, as that term is hereinafter defined) by fire or other casualty, the Landlord shall forthwith proceed to repair such damage and restore the Premises at its cost (and not at Tenant's expense), to substantially their condition at the time of such damage, but the Landlord shall not be responsible for any delay which may result from any cause beyond the Landlord's reasonable control. Nothing contained in this Article XI shall require Landlord to restore any damage to Tenant’s fixtures, furniture, other personal property or improvements.

11.2. SUBSTANTIAL DAMAGE. In case during the term hereof the Premises shall be substantially damaged or destroyed by fire or other casualty, the risk of which is covered by the Landlord's insurance, this lease shall, except as hereinafter provided, remain in full force and effect, and the Landlord shall promptly after

such damage and the determination of the net amount of insurance proceeds available to the Landlord, expend so much as may be necessary of such net amount to restore, at its cost (and not at Tenant's expense) (consistent, however, with zoning laws and building codes then in existence), the Premises (and not at Tenant's expense) to substantially the condition in which such portion of the Premises was in at the time of such damage, except as hereinafter provided, but the Landlord shall not be responsible for delay which may result from any cause beyond the reasonable control of the Landlord. Should the net amount of insurance proceeds available to the Landlord be insufficient to cover the cost of restoring the Premises, in the reasonable estimate of the Landlord, the Landlord may, but shall have no obligation to, supply the amount of such insufficiency and restore the Premises with all reasonable diligence or the Landlord may terminate this lease by giving notice to the Tenant not later than a reasonable time after the Landlord has determined the estimated net amount of insurance proceeds available to the Landlord and the estimated cost of such restoration. In case of substantial damage or destruction, as a result of a risk which is not covered by the Landlord's insurance, the Landlord shall likewise be obligated to rebuild the Premises, all as aforesaid, unless the Landlord, within a reasonable time after the occurrence of such event, gives written notice to the Tenant of the Landlord's election to terminate this lease.

However, if the Premises shall be substantially damaged or destroyed by fire, windstorm, or otherwise within the last year of the term of this Lease or if the Premises cannot be restored for occupancy by Tenant within 270 days following the date of such casualty, either party shall have the right to terminate this lease, provided that notice thereof is given to the other party not later than sixty (60) days after such damage or destruction. If said right of termination is exercised, this lease and the term hereof shall cease and come to an end as of the date of said damage or destruction.

Unless this lease is terminated as provided in this Section 11.2, or in Section 11.4, if the Premises shall be damaged or destroyed by fire or other casualty, then the Tenant shall (i) repair and restore all portions of the Premises not required to be restored by the Landlord pursuant to this Article XI to substantially the condition which such portions of the Premises were in at the time of such casualty, (ii) equip the Premises with trade fixtures and all personal property necessary or proper for the operation of the Tenant's business, and (iii) open for business in the Premises -- as soon thereafter as possible.

11.3. RENT ABATEMENT. In the event that the provisions of Section 11.1 or Section 11.2 of this Article XVI shall become applicable, the Fixed Rent shall be abated or reduced proportionately during any period in which, by reason of such damage or destruction, there is substantial interference with the operation of the business of the Tenant in the Premises, having regard to the extent to which the Tenant may be required to discontinue its business in the Premises, and such abatement or reduction shall continue for the period commencing with such destruction or

damage and ending with the completion by the Landlord of such work of repair and/or reconstruction as the Landlord is obligated to do. In the event of termination of this lease pursuant to this Article XI, this lease and the term hereof shall cease and come to an end as of the date of such damage or destruction.

11.4. DAMAGE TO COMMERCIAL UNIT. If, however, the Commercial Unit shall be substantially damaged or destroyed by fire or casualty, irrespective of whether or not the Premises are damaged or destroyed, the Landlord shall promptly restore or cause to be restored, to the extent originally constructed by the Landlord (consistent, however, with zoning laws and building codes then in existence), the Commercial Unit to substantially the condition thereof at the time of such damage (except that nothing herein shall require the Landlord to restore any improvements by any tenant or any furniture, fixtures, furnishings or other personal property of any tenant), unless the Landlord, within a reasonable time after such loss, gives notice to the Tenant of the Landlord's election to terminate this lease. If the Landlord shall give such notice, then anything to this Article XI to the contrary notwithstanding this lease shall terminate as of the date of such notice with the same force and effect as if such date were the date originally established as the expiration date hereof.

11.5. DEFINITION OF SUBSTANTIAL DAMAGE. The terms “substantially damaged” and “substantial damage”, as used in this Article, shall have reference to damage of such a character as cannot reasonably be expected to be repaired or the Premises restored within thirty (30) days from the time that such repair or restoration work would be commenced.

11.6. TAKING. If the Premises, or such portion thereof as to render the balance (when reconstructed) unsuitable for the purposes of the Tenant in the reasonable opinion of the Landlord, shall be taken by condemnation or right of eminent domain, either party, upon written notice to the other, shall be entitled to terminate this Lease, provided that such notice is given not later than thirty (30) days after the Tenant has been deprived of possession. For the purposes of this Article, any deed or other transfer of title in lieu of any such taking shall be treated as such a taking. Moreover, for the purposes of this Article, such a taking of the Tenant's entire leasehold interest hereunder in the Premises (or assignment or termination in lieu thereof) shall be treated as a taking of the entire Premises, and in such event the Tenant shall be treated as having been deprived of possession on the effective date thereof. Should any part of the Premises be so taken or condemned, and should this lease not be terminated in accordance with the foregoing provision, the Landlord covenants and agrees within a reasonable time after such taking or condemnation, and the determination of the Landlord's award therein, to expend so much as may be necessary of the net amount which may be awarded to the Landlord in such condemnation proceedings in restoring the Premises to an architectural unit as nearly like their condition prior to such taking as shall be practicable. Should the net amount so awarded to the Landlord be insufficient to cover the cost of restoring the Premises, as estimated by the Landlord's architect,

the Landlord may, but shall not be obligated to, supply the amount of such insufficiency and restore the Premises as above provided, with all reasonable diligence, or terminate this lease. Where the Tenant has not already exercised any right of termination accorded to it under the foregoing portion of this paragraph, the Landlord shall notify the Tenant of the Landlord's election not later than ninety (90) days after the final determination of the amount of the award. Further, if so much of the Commercial Unit shall be so taken that continued operation of the Commercial Unit as operated prior to the taking would be uneconomic in the Landlord's judgment or prohibited by zoning or other applicable law or by or pursuant to applicable provisions of the Condominium Documents or the Land Disposition Agreement, the Landlord shall have the right to terminate this lease by giving notice to the Tenant of the Landlord's desire so to do not later than thirty (30) days after the effective date of such taking.

11.7. RENT ABATEMENT. In the event of any such taking of the Premises, the Fixed Rent or a fair and just proportion thereof, according to the nature and extent of the damage sustained, shall be suspended or abated.

11.8 AWARD. Landlord shall have and hereby reserves and accepts, and Tenant hereby grants and assigns to Landlord, all rights to recover for damages to the Building and the Lot and any part thereof (but not for any of Tenant's furniture, fixture, equipment or improvements to the Premises), and the leasehold interest hereby created, and to compensation accrued or hereafter to accrue by reason of such taking, damage or destruction, as aforesaid, and by way of confirming the foregoing, Tenant hereby grants and assigns, and covenants with Landlord to grant and assign to Landlord all rights to such damages or compensation. Nothing contained herein shall be construed to prevent Tenant from prosecuting in any condemnation proceedings a claim for the value of any Tenant's usual trade fixtures installed in the Premises by Tenant at Tenant's expense and for relocation expenses, provided that such action shall not affect the amount of compensation otherwise recoverable by Landlord from the taking authority.

ARTICLE XII

LANDLORD'S REMEDIES

12.1 EVENTS OF DEFAULT. Any one of the following shall be deemed to be an "Event of Default":

A. Failure on the part of Tenant to pay Fixed Rent, additional rent or other charges for which provision is made herein on or before the date on which the same become due and payable and such failure continues for three (3) days after Landlord has sent to Tenant notice of such default.

However, if: (i) Landlord shall have sent to Tenant a notice of such default, even though the same shall have been cured and this Lease not terminated; and (ii) during the twelve (12) month period in which said notice of default has been sent by Landlord to Tenant, Tenant thereafter shall default in any monetary payment - the same shall be deemed to be an Event of Default upon Landlord giving Tenant written notice thereof, without the five (5) day grace period set forth above.

B. With respect to a non-monetary default under this Lease, failure of Tenant to cure the same within thirty (30) days following notice from Landlord to Tenant of such default. Notwithstanding the thirty (30) day cure period provided in the preceding sentence, Tenant shall be obligated to commence forthwith and to complete as soon as possible the curing of such default; and if Tenant fails so to do, the same shall be deemed to be an Event of Default.

However, if: (i) Landlord shall have sent to Tenant a notice of such default, even though the same shall have been cured and this Lease not terminated; and (ii) during the twelve (12) month period in which said notice of default has been sent by Landlord to Tenant, Tenant thereafter shall default in any non-monetary matter - the same shall be deemed to be an Event of Default upon Landlord giving the Tenant written notice thereof, and Tenant shall have no grace period within which to cure the same.

C. The commencement of any of the following proceedings, with such proceeding not being dismissed within sixty (60) days after it has begun: (i) the estate hereby created being taken on execution or by other process of law; (ii) Tenant being judicially declared bankrupt or insolvent according to law; (iii) an assignment being made of the property of Tenant for the benefit of creditors; (iv) a receiver, guardian, conservator, trustee in involuntary bankruptcy or other similar officer being appointed to take charge of all or any substantial part of Tenant's property by a court of competent jurisdiction; or (v) a petition being filed for the reorganization of Tenant under any provisions of the Bankruptcy Code now or hereafter enacted.

D. Tenant filing a petition for reorganization or for rearrangements under any provisions of the Bankruptcy Code now or hereafter enacted, and providing a plan for a debtor to settle, satisfy or to extend the time for the payment of debts.

E. Execution by Tenant of an instrument purporting to assign Tenant's interest under this Lease or sublet the whole or a portion of the Premises to a third party without Tenant having first obtained Landlord's prior express consent to said assignment or subletting.

F. The Tenant vacating or abandoning the Premises.

12.2 REMEDIES. Should any Event of Default occur then, notwithstanding any license of any former breach of covenant or waiver of the benefit hereof or consent in a former instance, Landlord lawfully may, in addition to any remedies otherwise available to Landlord, immediately or at any time thereafter, and without demand or notice, enter into and upon the Premises or any part thereof in the name of the whole and repossess the same as of Landlord's former estate, and expel Tenant and those claiming by, through or under it and remove its or their effects (forcibly if necessary) without being deemed guilty of any manner of trespass, and without prejudice to any remedies which might otherwise be used for arrears of rent or preceding breach of covenant and/or Landlord may send notice to Tenant terminating the Term of this Lease; and upon the first to occur of: (i) entry as aforesaid; or (ii) the fifth (5th) day following the mailing of such notice of termination, the Term of this Lease shall terminate, but Tenant shall remain liable for all damages as provided for herein.

Tenant covenants and agrees, notwithstanding any termination of this Lease as aforesaid or any entry or re-entry by Landlord, whether by summary proceedings, termination, or otherwise, to pay and be liable for on the days originally fixed herein for the payment thereof, amounts equal to the several installments of Fixed Rent and other charges reserved as they would become due under the terms of this Lease if this Lease had not been terminated or if Landlord had not entered or re-entered, as aforesaid, and whether the Premises be relet or remain vacant, in whole or in part, or for a period less than the remainder of the Term, or for the whole thereof; but in the event the Premises be relet by Landlord, Tenant shall be entitled to a credit in the net amount of rent received by Landlord in reletting, after deduction of all expenses incurred in reletting the Premises (including, without limitation, remodelling costs, brokerage fees, and the like), and in collecting the rent in connection therewith. It is specifically understood and agreed that Landlord shall be entitled to take into account in connection with any reletting of the Premises all relevant factors which would be taken into account by a sophisticated developer in securing a replacement tenant for the Premises, such as, but not limited to, the first class quality of the Building and the financial responsibility of any such replacement tenant and the status of the Building as a mixed-use building containing residential, retail and office components; and Tenant hereby waives, to the extent permitted by applicable law, any obligation Landlord may have to mitigate Tenant's damages. As an alternative, at the election of Landlord, Tenant will upon such termination pay to Landlord, as damages, such a sum as at the time of such termination represents the amount of the excess, if any, of the then value of the total rent and other benefits which would have accrued to Landlord under this Lease for the remainder of the Lease Term if the lease terms had been fully complied with by Tenant over and above the then cash rental value (in advance) of the Premises for the balance of the Term. For purposes of this Article, if Landlord elects to require Tenant to pay

damages in accordance with immediately preceding sentence, the total rent shall be computed by assuming that Tenant's payments in respect of increases in Taxes and operating expenses would be, for the balance of the unexpired term, the amount thereof (if any), respectively, for the immediately preceding Tax Period or fiscal year, as the case may be, payable by Tenant to Landlord.

If this Lease shall be guaranteed on behalf of Tenant, all of the foregoing provisions of this Article with respect to bankruptcy of Tenant, etc., shall be deemed to read "Tenant or the guarantor hereof".

In the event of any breach or threatened breach by Tenant of any of the agreements, terms, covenants or conditions contained in this Lease, Landlord shall be entitled to enjoin such breach or threatened breach and shall have the right to invoke any right or remedy allowed at law or in equity or by statute or otherwise as though reentry, summary proceedings, and other remedies were not provided for in this Lease.

Each right and remedy of Landlord provided for in this Lease shall be cumulative and shall be in addition to every other right or remedy provided for in this Lease not now or hereafter existing at law or in equity or by statute or otherwise, and the exercise or beginning of the exercise by Landlord of any one or more of the rights or remedies provided for in this Lease or now or hereafter existing at law or in equity or by statute or otherwise shall not preclude the simultaneous or later exercise by Landlord of any or all other rights or remedies provided for in this Lease or now or hereafter existing at law or in equity or by statute or otherwise.

If any payment of rent or any other payment payable hereunder by Tenant to Landlord shall not be paid when due, the same shall bear interest from the date when the same was payable until the date paid at the lesser of (a) twelve (12%) per annum, compounded monthly, or (b) the highest lawful rate of interest which Landlord may charge to Tenant without violating any applicable law. Such interest shall constitute additional rent payable hereunder and be payable upon demand therefor by Landlord.

Each of Landlord and Tenant hereby waives right to jury trial in the case of any litigation relating to this Lease.

Without limiting any of Landlord's rights and remedies hereunder, and in addition to all other amounts Tenant is otherwise obligated to pay, it is expressly agreed that Landlord shall be entitled to recover from Tenant all costs and expenses, including reasonable attorneys' fees incurred by Landlord in enforcing this Lease from and after Tenant's default.

12.3 LANDLORD'S DEFAULT. Landlord shall in no event be in default in the performance of any of Landlord's obligations hereunder unless and until Landlord shall have failed to perform such obligations within thirty (30) days, or such

additional time as is reasonably required to correct any such default, after notice by Tenant to Landlord properly specifying wherein Landlord has failed to perform any such obligation; *provided however*, if Landlord's failure to perform any of its obligations hereunder materially affects Tenant's ability to fully occupy and use the Premises, Landlord shall be in default hereunder if it does not commence the correction of such condition within ten (10) business days and use commercially reasonable efforts to remedy such condition as soon as possible. In the case of any default which poses the immediate risk of injury to persons or property, the Landlord shall use all reasonable efforts to commence such cure as soon as reasonably possible.

ARTICLE XIII

MISCELLANEOUS PROVISIONS

13.1 EXTRA HAZARDOUS USE. Tenant covenants and agrees that Tenant will not do or permit anything to be done in or upon the Premises, or bring in anything or keep anything therein which shall increase the rate of insurance on the Premises or on the Building or any part thereof above the standard rate applicable to premises being occupied for the use to which Tenant has agreed to devote the Premises; and Tenant further agrees that in the event that Tenant shall do any of the foregoing, Tenant will promptly pay to Landlord, on demand, any such increase resulting therefrom which shall be due and payable as additional rent hereunder.

13.2 WAIVER. Failure on the part of Landlord or Tenant to complain of any action or nonaction on the part of the other, no matter how long the same may continue, shall never be a waiver by Tenant or Landlord, respectively, of any of the other's rights hereunder. Further, no waiver at any time of any of the provisions hereof by Landlord or Tenant shall be construed as a waiver of any of the other provisions hereof, and a waiver at any time of any of the provisions hereof shall not be construed as a waiver at any subsequent time of the same provisions. The consent or approval of Landlord or Tenant to or of any action by the other requiring such consent or approval shall not be construed to waive or render unnecessary Landlord's or Tenant's consent or approval to or of any subsequent similar act by the other.

No payment by Tenant or acceptance by Landlord of a lesser amount than shall be due from Tenant to Landlord shall be treated otherwise than as a payment on account. The acceptance by Landlord of a check for a lesser amount with an endorsement or statement thereon, or upon any letter accompanying such check that such lesser amount is payment in full, shall be given no effect, and Landlord may accept such check without prejudice to any other rights or remedies which Landlord may have against Tenant. In no event shall Tenant ever be entitled to receive interest upon, or any payments on account of earnings or profits derived from any payments hereunder by Tenant to Landlord.

13.3 COVENANT OF QUIET ENJOYMENT. Tenant, subject to the terms and provisions of this Lease, upon payment of the Fixed Rent and other charges due hereunder and the observing, keeping and performing of all of the terms and provisions of this Lease on Tenant's part to be observed, kept and performed, shall lawfully, peaceably and quietly have, hold, occupy and enjoy the Premises during the Term hereof, without hindrance or ejection by any persons lawfully claiming under Landlord to have title to the Premises superior to Tenant; the foregoing covenant of quiet enjoyment is in lieu of any other covenant, expressed or implied; and it is understood and agreed that this covenant and any and all other covenants of Landlord contained in this Lease shall be binding upon Landlord and Landlord's successors only with respect to breaches occurring during Landlord's and Landlord's successors' respective ownership of Landlord's interest hereunder. Further, Tenant specifically agrees to look solely to Landlord's then equity interest in the Commercial Unit for recovery of any judgment from Landlord; it being specifically agreed that Landlord (original or successor) shall never be personally liable for any such judgment, or for the payment of any monetary obligation to Tenant. The provision contained in the foregoing sentence is not intended to, and shall not limit any right that Tenant might otherwise have to obtain injunctive relief against Landlord or Landlord's successors in interest, or any action not involving the personal liability of Landlord (original or successor) to respond in monetary damages from Landlord's assets other than Landlord's equity interest aforesaid in the Commercial Unit. In no event shall Tenant have the right to terminate this Lease or to claim any abatement or set-off against the rent or other charges hereunder as a result of a breach of any representation or warranty of promises by Landlord or default by Landlord hereunder, except as expressly set forth in this Lease or except as a result of a wrongful eviction (whether actual or constructive by Landlord or Tenant from the demised premises). With respect to any services, including, without limitation, heat, air-conditioning or water to be furnished by Landlord to Tenant, or obligations to be performed by Landlord hereunder, Landlord shall in no event be liable for failure to furnish or perform the same when (and the date for performance of the same shall be postponed so long as Landlord is) prevented from doing so by strike, lockout, breakdown, accident, order or regulation of or by any governmental authority, or failure of supply, or inability by the exercise of reasonable diligence to obtain supplies, parts or employees necessary to furnish such services, or perform such obligations or because of war or other emergency, or for any cause beyond Landlord's reasonable control, or for any cause due to any act or neglect of Tenant or Tenant's servants, agents, employees, licensees, invitees or any person claiming by, through or under Tenant. In no event shall Landlord ever be liable to Tenant for any indirect, special or consequential damages suffered by Tenant from whatever cause.

13.4 NOTICE TO MORTGAGEE AND GROUND LESSOR. After receiving notice from any person, firm or other entity that it holds a mortgage which includes the Premises as part of the mortgaged premises, or that it is the ground lessor under a lease with Landlord, as ground lessee, which includes the Premises as part of the demised premises, no notice from Tenant to Landlord shall be effective unless and until a copy of the same is given to such holder or ground lessor, and the curing of any of Landlord's defaults by such holder or ground lessor shall be treated as performance by Landlord. For the purposes of this Section 13.4, Section 13.5 or Section 13.14, the term "mortgage" includes a mortgage on a leasehold interest of Landlord (but not one on Tenant's leasehold interest).

13.5 ASSIGNMENT OF RENTS. With reference to any assignment by Landlord of Landlord's interest in this Lease, or the rents payable hereunder, conditional in nature or otherwise, which assignment is made to the holder of a mortgage or ground lease on property which includes the Premises. Tenant agrees:

(a) that the execution thereof by Landlord, and the acceptance thereof by the holder of such mortgage, or the ground lessor, shall never be treated as an assumption by such holder or ground lessor of any of the obligations of Landlord hereunder, unless such holder or ground lessor shall, by notice sent to Tenant, specifically otherwise elect; and

(b) that, except as aforesaid, such holder or ground lessor shall be treated as having assumed Landlord's obligations hereunder only upon foreclosure of such holder's mortgage and the taking of possession of the Premises, or in the case of a ground lessor, the assumption of Landlord's position hereunder by such ground lessor. In no event shall the acquisition of title to the Building or Commercial Unit or any part thereof and the land on which the same is located by a purchaser which, simultaneously therewith, leases the same back to the seller thereof, be treated as an assumption by operation of law or otherwise of Landlord's obligations hereunder, but Tenant shall look solely to such seller-lessee, and its successors from time to time in title, for performance of Landlord's obligations hereunder. In any such event, this Lease shall be subject and subordinate to the lease to such seller. For all purposes such seller-lessee, and its successors in title, shall be the landlord hereunder unless and until Landlord's position shall have been assumed by such purchaser-lessor.

13.6 MECHANIC'S LIENS. Tenant agrees immediately to discharge of record (either by payment or by the filing of the necessary bond, or otherwise) any mechanics', materialmen's or other lien against the Premises and/or Landlord's interest therein, which liens may arise out of any payment due for, or purported to be due for, any labor, services, materials, supplies or equipment alleged to have been furnished to or for Tenant in, upon or about the Premises.

13.7 NO BROKERAGE. Landlord agrees that it shall pay any commissions owed to the broker(s), if any, named in Section 1.2 hereof, pursuant to a separate agreement between Landlord and such broker(s). Tenant warrants and represents that Tenant has not dealt with any broker other than the broker, if any, named in Section 1.2 hereof, in connection with the consummation of this Lease, and in the event any claim is made against the Landlord relative to dealings with brokers other than any broker named in Section 1.2, Tenant shall defend the claim against Landlord with counsel of Landlord's selection and save harmless and indemnify Landlord on account of loss, cost or damage which may arise by reason of any such claim.

13.8 INVALIDITY OF PARTICULAR PROVISIONS. If any term or provision of this Lease or the application thereof to any person or circumstance shall, to any extent, be invalid or uneforceable, the remainder of this Lease, or the application of such term or provision to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected thereby, and each term and provision of this Lease shall be valid and enforceable to the fullest extent permitted by law.

13.9 PROVISIONS BINDING, ETC. Except as herein otherwise provided, the terms hereof shall be binding upon and shall inure to the benefit of the successors and assigns, respectively, of Landlord and Tenant and, if Tenant shall be an individual, upon and to his heirs, executors, administrators, successors and assigns. If two or more persons are named as Tenant herein, each of such persons shall be jointly and severally liable for the obligations of the Tenant hereunder, and Landlord may proceed against any one without first having commenced proceedings against any other of them. Each term and each provision of this Lease to be performed by Tenant shall be construed to be both a covenant and a condition. The reference contained to successors and assigns of Tenant is not intended to constitute a consent to assignment by Tenant, but has reference only to those instances in which Landlord may later give consent to a particular assignment as required by those provisions of Article V hereof.

13.10 RECORDING. Tenant agrees not to record the within Lease, but each party hereto agrees, on the request of the other, to execute a so-called memorandum of lease or short form lease in form recordable and complying with applicable law and reasonably satisfactory to Landlord's attorneys. In no event shall such document set forth the rent or other charges payable by Tenant under this Lease; and any such document shall expressly state that it is executed pursuant to the provisions contained in this Lease and is not intended to vary the terms and conditions of this Lease.

13.11 NOTICES. Whenever, by the terms of this Lease, notice shall or may be given either to Landlord or to Tenant, such notice shall be in writing and shall be delivered in hand or sent by registered or certified mail, postage prepaid:

If intended for Landlord, addressed to Landlord at the address set forth in Section 1.2 of this Lease (or to such other address or addresses as may from time to time hereafter be designated by Landlord by like notice) and a copy to Landlord, c/o Goulston & Storrs, 400 Atlantic Avenue, Boston, Massachusetts 02210-2206, Attention: Heritage on the Garden.

If intended for Tenant, addressed to Tenant at the address set forth in Section 1.2 of this Lease (or to such other address or addresses as may from time to time hereafter be designated by Tenant by like notice).

All such notices shall be effective when delivered in hand, or when deposited in the United States mail within the continental United States provided that the same are received in the ordinary course at the address to which the same were sent.

13.12 WHEN LEASE BECOMES BINDING. Employees or agents of Landlord have no authority to make or agree to make a lease or any other agreement or undertaking in connection herewith. The submission of this document for examination and negotiation does not constitute an offer to lease, or a reservation of, or option for, the Premises, and this document shall become effective and binding only upon the execution and delivery hereof by both Landlord and Tenant. All negotiations, considerations, representations and understandings between Landlord and Tenant are incorporated herein and may be modified or altered only by written agreement between Landlord and Tenant, and no act or omission of any employee or agent of Landlord shall alter, change or modify any of the provisions hereof.

13.13 PARAGRAPH HEADINGS. The paragraph headings throughout this instrument are for convenience and reference only, and the words contained therein shall in no way be held to explain, modify, amplify or aid in the interpretation, construction or meaning of the provisions of this Lease.

13.14 RIGHTS OF MORTGAGEE. It is understood and agreed that the rights and interests of Tenant under this Lease shall be subject and subordinate to any mortgages or deeds of trust that may hereafter be placed upon the Commercial Unit and/or the Building and/or the Lot, and/or any part of the foregoing, and to any and all advances to be made thereunder, and to the interest thereon, and all renewals, modifications, replacements and extensions thereof, if the mortgagee or trustee named in said mortgages or deeds of trust shall elect by notice delivered to Tenant to subject and subordinate the rights and interest of Tenant under this Lease to the lien of its mortgage or deed of trust; it is further agreed that any mortgagee or trustee may elect to give the rights and interest of Tenant under this

Lease priority over the lien of its mortgage or deed of trust. In the event of either such election, and upon notification by such mortgagee or trustee to Tenant to that effect, the rights and interest of Tenant under this Lease shall be deemed to be subordinate to, or to have priority over, as the case may be, the lien of said mortgage or deed of trust, whether this Lease is dated prior to or subsequent to the date of said mortgage or deed of trust. Tenant shall execute and deliver whatever instruments may be required for such purposes, and in the event Tenant fails so to do within ten (10) days after demand in writing, Tenant does hereby make, constitute and irrevocably appoint Landlord as its attorney-in-fact and in its name, place and stead so to do. In the event that any holder or prospective holder of any mortgage which includes the Premises as part of the mortgaged premises, shall request any modification of any of the provisions of this Lease, other than a provision directly related to the rents payable hereunder, the duration of the term hereof, or the size, use or location of the Premises, Tenant agrees that Tenant will enter into a written agreement in recordable form with Landlord or such holder or prospective holder which shall effect such modification and provide that such modification shall become effective and binding upon Tenant and shall have the same force and effect as an amendment to this Lease for all purposes. Tenant hereby appoints such holder as Tenant's attorney-in-fact to execute any such modification upon default of Tenant in complying with such holder's request.

13.15 STATUS REPORT. Recognizing that both parties may find it necessary to establish to third parties, such as accountants, banks, mortgagees or the like, the then current status of performance hereunder, either party, on the request of the other made from time to time, will promptly furnish to Landlord, or the holder of any mortgage encumbering the Premises, or to Tenant, as the case may be, a statement of the status of any matter pertaining to this Lease, including, without limitation, acknowledgments that (or the extent to which) each party is in compliance with its obligations under the terms of this Lease.

13.16 SECURITY DEPOSIT; TENANT'S FINANCIAL CONDITION. If, in Section 1.2 hereof, a security deposit is specified, Tenant agrees that the same will be paid upon execution and delivery of this Lease, and that Landlord shall hold the same, throughout the term of this Lease, as security for the performance by Tenant of all obligations on the part of Tenant to be kept and performed. The security deposit may be paid by Tenant either in cash or by standby letter of credit issued by a banking institution reasonably acceptable to Landlord and on a form that is reasonably acceptable to Landlord. For any banking institution to be reasonably acceptable to Landlord the same must have an office in the greater Boston metropolitan area where the letter of credit may be presented for a draw, and for a form to be reasonably acceptable to Landlord the same must be an irrevocable letter of credit transferable by Landlord without cost and providing that the letter of credit may be drawn by Landlord upon sight without any conditions not acceptable to Landlord in its sole discretion. The letter of credit must also provide for a maturity that expires no earlier than ninety (90) days after the stated expiration date of the term of this Lease (as the same may be extended) or in lieu thereof a provision that allows the Landlord to draw down upon the letter of credit

in full and hold the same as a cash security deposit in the event that the letter of credit is not extended, renewed or replaced within thirty (30) days prior to its date of expiration. Landlord shall have the right from time to time without prejudice to any other remedy Landlord may have on account thereof, to apply such deposit, or any part thereof, to Landlord's damages arising from any default on the part of Tenant. Tenant not then being in default, Landlord shall return the deposit, or so much thereof as shall not have theretofore been applied in accordance with the terms of this Section 13.16 to Tenant on the expiration or earlier termination of the Lease Term and surrender of possession of the Premises by Tenant to Landlord at such time. While Landlord holds such deposit, Landlord shall have no obligation to pay interest on the same and shall have the right to commingle the same with Landlord's other funds. If Landlord conveys Landlord's interest under this Lease, the deposit or any part thereof not previously applied may be turned over by Landlord to Landlord's grantee, and if so turned over, Tenant agrees to look solely to such grantee for proper application of the deposit in accordance with the terms of this Section 13.16 and the return thereof in accordance herewith.

Neither the holder of a mortgage nor the lessor in a ground lease of property which includes the Premises shall ever be responsible to Tenant for the return or application of any such deposit, whether or not it succeeds to the position of Landlord hereunder, unless such deposit shall have been received in hand by such holder or ground lessor.

Tenant warrants and represents that all information furnished to Landlord or Landlord's representatives in connection with this Lease are true and correct and in respect of the financial condition of Tenant, properly reflect the same without material adverse change, as of the date hereof. Upon Landlord's demand, which may be made no more often than quarterly, Tenant shall furnish to Landlord, at Tenant's sole cost and expense, then current financial statements of Tenant, audited (if audited statements have been recently prepared on behalf of Tenant, or otherwise certified as being true and correct by the chief financial officer of Tenant). If any such financial statements or other statements prepared in respect of Tenant's financial condition shall disclose any material adverse change from the financial condition of Tenant as of the date hereof, the same shall, upon notice from Landlord to Tenant, constitute a default by Tenant to which the provisions of Article XII hereof shall be applicable.

13.17 ADDITIONAL REMEDIES OF LANDLORD. Landlord shall have the right, but shall not be required to do so, to pay such sums or do any act which requires the expenditure of monies which may be necessary or appropriate by reason of the failure or neglect of Tenant to perform any of the provisions of this Lease, and in the event of the exercise of such right by Landlord, Tenant agrees to pay to Landlord forthwith upon demand all such sums; and if Tenant shall default in such payment, Landlord shall have the same rights and remedies as Landlord has hereunder for the failure of Tenant to pay the Fixed Rent.

Except as otherwise set forth herein, any obligations of Tenant as set forth herein (including, without limitation, rental and other monetary obligations, repair obligations and obligations to indemnify Landlord), shall survive the expiration or earlier termination of this Lease, and Tenant shall immediately reimburse Landlord for any expense incurred by Landlord in curing Tenant's failure to satisfy any such obligation (notwithstanding the fact that such cure might be effected by Landlord following the expiration or earlier termination of this Lease).

13.18 HOLDING OVER. Any holding over by Tenant after the expiration of the Lease Term shall be treated as a tenancy at sufferance at 150% the Fixed Rent and additional rent herein provided to be paid during the last twelve (12) months of the Lease Term (prorated on a daily basis) and shall otherwise be on the terms and conditions set forth in this Lease, as far as applicable.

13.19 NON-SUBROGATION. Insofar as, and to the extent that, the following provision may be effective without invalidating or making it impossible to secure insurance coverage obtainable from responsible insurance companies doing business in the locality in which the Premises are located (even though extra premium may result therefrom): Landlord and Tenant mutually agree that, with respect to any hazard which is covered by insurance then being carried by them, respectively, the one carrying such insurance and suffering such loss releases the other of and from any and all claims with respect to such loss; and they further mutually agree that their respective insurance companies shall have no right of subrogation against the other on account thereof. In the event that extra premium is payable by either party as a result of this provision, the other party shall reimburse the party paying such premium the amount of such extra premium. If, at the request of one party, this release and non-subrogation provision is waived, then the obligation of reimbursement shall cease for such period of time as such waiver shall be effective, but nothing contained in this Section 13.19 shall derogate from or otherwise affect releases elsewhere herein contained of either party for claims.

13.20 [INTENTIONALLY DELETED]

13.21 GOVERNING LAW. This Lease shall be governed exclusively by the provisions hereof and by the laws of the Commonwealth of Massachusetts as the same may from time to time exist.

13.22 DEFINITION OF ADDITIONAL RENT. Without limiting any other provision of this Lease, it is expressly understood and agreed that Tenant's participation in Taxes, operating expenses, and all other charges which Tenant is required to pay hereunder, together with all interest and penalties that may accrue thereon, shall be deemed to be additional rent, and in the event of non-payment thereof by Tenant, Landlord shall have all of the rights and remedies with respect thereto as would accrue to Landlord for non-payment of Fixed Rent.

13.23 LANDLORD'S FEES AND EXPENSES. Unless prohibited by applicable law, Tenant agrees to pay to Landlord the amount of all legal fees and expenses incurred by Landlord arising out of or resulting from any act or omission by Tenant with respect to this Lease or the Premises, including without limitation, any breach by Tenant of its obligations hereunder.

Further, if Tenant shall request Landlord's consent or joinder in any instrument pertaining to this Lease, Tenant agrees promptly to reimburse Landlord for the legal fees incurred by Landlord in processing such request, whether or not Landlord complies therewith; and if Tenant shall fail promptly so to reimburse Landlord, same shall be deemed to be a default in Tenant's monetary obligations under this Lease.

Whenever Tenant shall request approval by Landlord or the Landlord's architect of plans, drawings, specifications, or otherwise with respect to initial alteration of the Premises, subsequent remodelling thereof, installation of signs including subsequent changes thereof, or the like, Tenant specifically agrees promptly to pay to Landlord's architect (or reimburse Landlord for the payment Landlord makes to said architect) for all charges involved in the review (and re-review, if necessary) and approval or disapproval thereof whether or not approval shall ultimately be given.

ARTICLE XIV

PARKING

14.1 PARKING RIGHTS.

(a) During the term of this Lease, Tenant shall have the right, during Normal Building Operating Hours, to park passenger vehicles in the number of parking spaces in the parking garage located in the Building as set forth in Section 1.2 hereof, subject to reasonable rules and regulations in respect thereof promulgated by the Landlord from time to time. Such parking shall be for the use of Tenant's officers and employees and, at Landlord's election, shall be either in spaces specifically assigned from time to time to Tenant (which, as provided in Section 1.2, may include so-called tandem spaces which shall be counted as two (2) spaces) for such purpose or on an unassigned, nonexclusive basis.

(b) As consideration for such parking rights, Tenant shall pay to Landlord as additional rent an amount determined as the product of (x) the number of spaces so specified multiplied by (y) the monthly parking rate for office tenants in the Building determined by the Landlord from time to time and subject to change from time to time. Currently, the rate for an individual space is $575.00 per month and the rate for each tandem space is $500.00 per month, subject to change from time to time.

(c) In addition to, and not in limitation of any other provisions in this Lease, the Tenant understands and agrees that its rights as respects such parking are a license only and shall terminate upon the termination or expiration of this Lease, and that all vehicles so parked are at the sole risk of Tenant.

(d) Upon request of Landlord, Tenant shall furnish Landlord a list of the individuals who are authorized to utilize the parking rights granted herein, with such information regarding the vehicles to be parked as Landlord may require. If any vehicles are parked by any of Tenant's officers or employees in violation of the rules and regulations promulgated by Landlord, Landlord, in addition to whatever other rights or remedies it may have, shall have the right to tow said vehicles at the Tenant's expense and Tenant shall reimburse Landlord for such towing charges as additional rent hereunder.

ARTICLE XV

EXTENSION OPTION

15.1 OPTION TO EXTEND. Provided Tenant is not in default hereunder beyond applicable notice and cure periods, Tenant shall have the right to extend the term of this Lease for one period of two (2) years by notice to Landlord to such effect given no later than twelve (12) months nor earlier than fifteen (15) months prior to the end of the then term of this Lease and if Tenant timely and properly gives such notice then the term of this Lease shall be extended without the necessity of any further action between Landlord and Tenant upon all the terms and conditions set forth herein except that the fixed rent shall be the greater of (x) fixed rent per annum and additional rent under Article VIII for the 12-month period immediately preceding the commencement of the extension term (the "Current Rent") or (y) the then fair market rental value of the Premises. If Tenant timely and properly exercises such option to extend, then Landlord shall give to Tenant its determination as to the fair market rental value of the Premises. If within sixty (60) days after Tenant's exercise of its right to extend Landlord has not submitted such determination to Tenant then Tenant may request such determination from Landlord and Landlord shall submit the same to Tenant within ten (10) days after such request. If after receipt of Landlord's determination Tenant determines to contest such determination then by notice to Landlord given within thirty (30) days after its receipt of Landlord's determination Tenant may request that the determination of fair market rental value be made by arbitration as follows: Each of Landlord and Tenant shall designate a person to act as arbitrator, which person shall be a person with at least five years experience in the appraisal of real property in the City of Boston and shall not be directly employed by Landlord or Tenant. The two appraisers so chosen shall within thirty (30) days of their selection determine the fair market rental value of the Premises but if the two appraisers are unable to agree upon such fair market rental value within such period then the determination shall be made by a third appraiser selected by the two appraisers, which

appraiser likewise shall not be directly employed by either Landlord or Tenant and shall have at least five years experience in the appraisal of real property within the City of Newton. The determination of the third appraiser shall be final. The costs and expenses of the third appraiser shall be borne jointly by Landlord and Tenant. Until the determination of the fair market rental value has been determined Tenant shall pay to Landlord on account of fixed rent for and with respect to the extension term at the rate of the Current Rent per annum, with a prompt adjustment as soon as the fair market rental value of the Premises for the extension term has been determined. Fixed Rent shall be payable during the extension term in monthly installments of 1/12th of the annual amount in advance on the commencement date of the extension term and on the first day of each month thereafter.

WITNESS the execution hereof in any number of counterparts, each of which counterparts shall be deemed an original for all purposes, as of the day and year first above written.

TDC HERITAGE LLC

By: TDC Holding Corp., its manager

By: /s/ Ronald Druker
Its hereunto duly authorized

(Landlord)

PARATEK PHARMA, LLC.

By: /s/ Douglas W. Pagán
Its
Hereunto duly authorized

(Tenant)

G U A R A N T E E

FOR VALUE RECEIVED, and in consideration for, and as an inducement to TD HERITAGE LLC (the "Landlord") to make the foregoing lease (the "Lease") with PARATEK PHARMA, LLC (the "Tenant"), the undersigned, PARATEK PHARMACEUTICALS, INC., a Delaware corporation (the "Guarantor"), unconditionally guarantees the full performance and observance of all the covenants, conditions and agreements therein provided to be performed and observed by the Tenant, the Tenant's successors and assigns, and expressly agrees that the validity of this agreement and the obligations of the Guarantor shall in no way be terminated, affected or impaired by reason of the granting by the Landlord of any indulgences to the Tenant or by reason of the assertion by the Landlord against the Tenant of any of the rights or remedies reserved to the Landlord pursuant to the provisions of the Lease or by the relief of the Tenant from any of the Tenant's obligations under the Lease by operation of law or otherwise (including, but without limitation, the rejection of the Lease in connection with proceedings under the bankruptcy laws now or hereafter enacted); the Guarantor hereby waiving all suretyship defenses. The obligations of the Guarantor include the payment to Landlord of any monies payable by Tenant under any provisions of the Lease, at law, or in equity, including, without limitation, any monies payable by virtue of the breach of any warranty, the grant of any indemnity or by virtue of any other covenant of Tenant under the Lease.

The Guarantor further covenants and agrees that this Guarantee shall remain and continue in full force and effect as to any renewal, modification or extension of the Lease, whether or not the Guarantor shall have received any notice of or consented to such renewal, modification or extension. The Guarantor further agrees that its liability under this Guarantee shall be primary (and that the heading of this instrument and the use of the word "guarantee(s)" shall not be interpreted to limit the aforesaid primary obligations of the Guarantor), and that in any right of action which shall accrue to the Landlord under the Lease, the Landlord may, at its option, proceed against the Guarantor, any other guarantor, and the Tenant, jointly or severally, and may proceed against the Guarantor without having commenced any action against or having obtained any judgment against the Tenant or any other guarantor. The Guarantor irrevocably waives any and all rights the Guarantor may have at any time (whether arising directly or indirectly, by operation of law or by contract or otherwise) to assert any claim against the Tenant on account of payments made under this Guarantee, including, without limitation, any and all rights of or claim for subrogation, contribution, reimbursement, exoneration and indemnity, and further waives any benefit of and any right to participate in any security deposit or other collateral which may be held by the Landlord; and the Guarantor will not claim any set-off or counterclaim against the Tenant in respect of any liability the Guarantor may have to the Tenant. The Guarantor further represents to the Landlord as an inducement for it to make the Lease, that the Guarantor owns all of the entire outstanding capital stock of the Tenant, that the execution and delivery of this Guarantee is not in contravention of its charter or by-laws or applicable state laws, and has been duly authorized by its Board of Directors.

It is agreed that the failure of the Landlord to insist in any one or more instances upon a strict performance or observance of any of the terms, provisions or covenants of the Lease or to exercise any right therein contained shall not be construed or deemed to be a waiver or relinquishment for the future of such term, provision, covenant or right, but the same shall continue and remain in full force and effect. Receipt by the Landlord of rent with knowledge of the breach of any provision of the Lease shall not be deemed a waiver of such breach.

No subletting, assignment or other transfer of the Lease, or any interest therein, shall operate to extinguish or diminish the liability of the Guarantor under this Guarantee; and wherever reference is made to the liability of the Tenant named in the Lease, such reference shall be deemed likewise to refer to the Guarantor.

All payments becoming due under this Guarantee, including, without limitation, costs of collection, and not paid when due shall bear interest from the applicable due date until received by the Landlord at the interest rate set forth in the Lease.

It is further agreed that all of the terms and provisions hereof shall inure to the benefit of the heirs, executors, administrators and assigns of the Landlord, and shall be binding upon the successors and assigns of the Guarantor.

IN WITNESS WHEREOF, the Guarantor has caused this Guarantee to be executed in its corporate name by its duly authorized representative, and its corporate seal to be affixed hereto this 24 day of April 2015.

PARATEK PHARMACEUTICALS, INC.

By: /s/ Douglas W. Pagán
Its
Hereunto duly authorized

EXHIBIT A

PLAN SHOWING TENANT'S SPACE

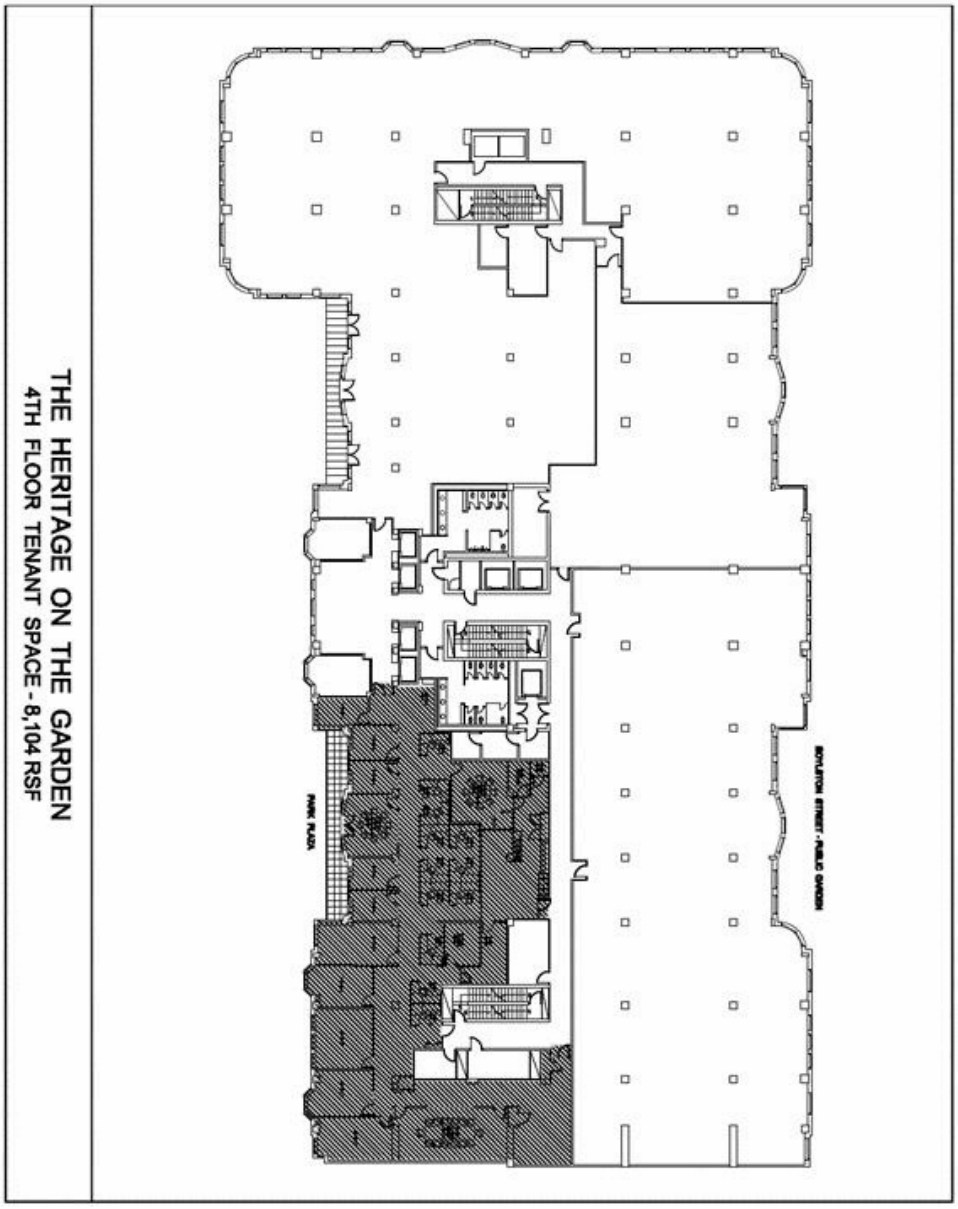


EXHIBIT B

DESCRIPTION OF LOT

Seventeen (17) parcels situated in the City of Boston, County of Suffolk and Commonwealth of Massachusetts shown on plans titled "Property Line Plan, Park Plaza, Urban Renewal Area, OWNER: Ronald M. Druker et al, trustees, Boston (Suffolk County) Massachusetts" by Cullinan Engineering Co., Inc. Auburn - Boston, Massachusetts, dated May 9, 1986 consisting of sheets 1 and 2 of 2, said parcels being more particularly bounded and described as follows:

FIRST PARCEL
No. 75 Park Plaza - No. 300 Boylston Street

Beginning at a point on the southerly line of Boylston Street at land now or formerly of Riverview Management Corp., said point being S 74°36'24" W, a distance of 44.03 feet from the intersection of said southerly line of Boylston Street and the westerly line of Hadassah Way.

THENCE running in part by land of said Riverview Management Corp. and in part by the easterly line of relocated Park Plaza, the former by lines through a brick party wall on the following two courses:
S 15° 13' 00" E a distance of 52.58 feet to a point
and S 13° 54' 35" E a distance of 86.46 feet to a point on the southerly line of relocated Park Plaza;

THENCE running by the southerly, easterly, southerly, easterly and southerly lines of said relocated Park Plaza on the following five (5) courses:

S 74° 36' 24" W, a distance of 186.60 feet to a point;
S 15° 23' 36" E, a distance of 21.00 feet to a point;
S 74° 36' 24" W, a distance of 52.50 feet to a point;
S 15° 23' 36" E, a distance of 4.00 feet to a point;
and S 74° 36' 24" W, a distance of 69.50 feet to a point on the easterly line of relocated Arlington Street;

THENCE running in part by said easterly line of relocated Arlington Street and in part by land, now or formerly of Boston Redevelopment Authority N 15° 23' 36" W, a distance of 164.00 feet to a point on the southerly line of relocated Boylston Street;

THENCE running in part by said southerly line of relocated Boylston Street and in part by the existing southerly line of Boylston Street N 74° 36' 24" E, a distance of 311.00 feet to the Point of Beginning.

The above described parcel contains 45,954 square feet, more or less.

SECOND PARCEL
(A) PART 1

Beginning at a point on the southerly line of relocated Park Plaza, said point being S 74° 36' 24" W, a distance of 81.60 feet from the southeast corner of the first parcel.

THENCE running through Park Plaza on the following three (3) courses:
Southerly, 14.00 feet to a point;
Westerly, 37.00 feet to a point;
and Northerly 14.00 feet to a point on said southerly line of relocated Park Plaza;

THENCE running N 74° 36' 24" E by said southerly line of relocated Park Plaza, a distance of 37.00 feet to the Point of Beginning.

Said parcel contain 518 square feet, more or less and extends from elevation 1.00 to elevation 16.00, said elevations referring to Boston City Base.

THIRD PARCEL
(A) PART 2

Beginning at a point on the southerly line of said relocated Park Plaza, said point being S 74° 36' 24" W, a distance of 166.10 feet from the southeast corner of the first parcel.

THENCE running through Park Plaza on the following three (3) courses:
Southwesterly, 2.82 feet to a point;
Westerly, 5.00 feet to a point;
and Northwesterly 2.82 feet to a point on said southerly line of relocated Park Plaza;

THENCE running N 74° 36' 24" E, by said southerly line of relocated Park Plaza, a distance of 9.00 feet to the Point of Beginning.

Said parcel contains 14 square feet, more or less, and extends from elevation 40.00 to elevation 106.00, said elevations referring to Boston City Base.

FOURTH PARCEL
(A) PART 3

Beginning at a point on the southerly line of said relocated Park Plaza, said point being S 74° 36' 24" W, a distance of 143.10 feet from the southeast corner of the first parcel.

THENCE running through Park Plaza southwesterly and northwesterly on a curve to the right having a radius of 18.25 feet, an arc distance of 21.16 feet to a point on said southerly line of relocated Park Plaza;

THENCE running N 74° 36' 24" E, by said southerly line of relocated Park Plaza, a distance of 20.00 feet to the Point of Beginning.

Said parcel contains 41 square feet, more or less, and extends from elevation 103.50 to elevation 119.00, said elevations referring to Boston City Base.

FIFTH PARCEL
(A) PART 4

Beginning at a point on the southerly line of said relocated Park Plaza, said point being S 74° 36' 24" W, a distance of 131.10 feet from the southeast corner of the first parcel.

THENCE running through Park Plaza on the following three (3) courses:
Southwesterly, 2.82 feet to a point;
Westerly, 5.00 feet to a point;
and Northwesterly 2.82 feet to a point on said southerly line of relocated Park Plaza;

THENCE running N 74° 36' 24" E, by said southerly line of relocated Park Plaza, a distance of 9.00 feet to the Point of Beginning.

Said parcel contains 14 square feet, more or less, and extends from elevation 40.00 to elevation 106.00, said elevations referring to Boston City Base.

SIXTH PARCEL
(A) PART 5

Beginning at a point on the southerly line of said relocated Park Plaza, said point being S 74° 36' 24" W, a distance of 45.10 feet from the southeast corner of the first parcel.

THENCE running through Park Plaza on the following three (3) courses:

Southwesterly, 2.82 feet to a point;
Westerly, 5.00 feet to a point;
and Northwesterly, 2.82 feet to a point on said southerly line of relocated Park Plaza;

THENCE running N 74° 36' 24" E, by said southerly line of relocated Park Plaza, a distance of 9.00 feet to the Point of Beginning.

Said parcel contains 14 square feet, more or less, and extends from elevation 40.00 to elevation 106.00, said elevations referring to Boston City Base.

SEVENTH PARCEL
(A) PART 6

Beginning at a point on the southerly line of said relocated Park Plaza, said point being S 74° 36' 24" W, a distance of 10.60 feet from the southeast corner of the first parcel.

THENCE running through Park Plaza on the following three (3) courses:

Southwesterly, 2.82 feet to a point;
Westerly, 5.00 feet to a point;
and Northwesterly, 2.82 feet to a point on said southerly line of relocated Park Plaza;

THENCE running N 74° 36' 24" E, by said southerly line of relocated Park Plaza, a distance of 9.00 feet to the Point of Beginning.

Said parcel contains 14 square feet, more or less, and extends from elevation 40.00 to elevation 106.00, said elevations referring to Boston City Base.

EIGHTH PARCEL
(B) PART 1

Beginning at a point at land, now or formerly of Boston Redevelopment Authority, said point being S 15° 23' 36" E, a distance of 60.50 feet from the northwest corner of the first parcel;

THENCE running S 15° 23' 36" E by land of said Authority a distance of 9.00 feet to a point;

THENCE running through land of said Authority on the following three courses:

Northwesterly, 2.82 feet to a point;
Northerly, 5.00 feet to a point;
and Northeasterly, 2.82 feet to the Point of Beginning.

Said parcel contains 14 square feet, more or less, and extends from elevation 40.00 to elevation 168.00, said elevations referring to Boston City Base.

NINTH PARCEL
(B) PART 2

Beginning at a point on the easterly side of relocated Arlington Street, said point being N 15° 23' 36" W, a distance of 44.50 feet from the southwest corner of the first parcel;

THENCE running through Arlington Street on the following three (3) courses:

Northwesterly, 2.82 feet to a point;
Northerly, 5.00 feet to a point;
and Northeasterly, 2.82 feet to a point on said easterly side of relocated Arlington Street;

THENCE running S 15° 23' 36" E, by said easterly side of relocated Arlington Street, a distance of 9.00 feet, to the Point of Beginning.

Said parcel contains 14 square feet, more or less, and extends from elevation 40.00 to elevation 148.00, said elevations referring to Boston City Base.

TENTH PARCEL
(B) PART 3

Beginning at a point at land now or formerly of Boston Redevelopment Authority, said point being N 15° 23' 36" W, a distance of 64.50 feet from the southwest corner of the first parcel;

THENCE running northwesterly and northeasterly in part through land of said Authority and in part through Arlington Street, on a curve to the right having a radius of 16.00 feet, an arc distance of 20.34 feet to a point on easterly side of relocated Arlington Street extended northwesterly.

THENCE running S 15° 23' 36" E, along said extended easterly line of relocated Arlington Street, a distance of 19.00 feet, to the Point of Beginning.

Said parcel contains 40 square feet, more or less, and extends from elevation 51.50 to elevation 96.50, said elevations referring to Boston City Base.

ELEVENTH PARCEL
(C) PART 1

Beginning at a point on the southerly line of Boylston Street, said point being N 74° 36' 24" E, a distance of 24.75 feet from the northwest corner of the first parcel;

THENCE running northeasterly and southeasterly through Boylston Street, on a curve to the right having a radius of 18.50 feet, an arc distance of 21.13 feet to a point on said southerly line of Boylston Street;

THENCE running S 74° 36' 24" W, along said southerly line of Boylston Street, a distance of 20.00 feet, to the Point of Beginning.

Said parcel contains 40 square feet, more or less, and extends from elevation 63.00 to elevation 96.50, said elevations referring to Boston City Base.

TWELFTH PARCEL
(C) PART 2

Beginning at a point on the southerly line of Boylston Street, said point being N 74° 36' 24" E, a distance of 145.50 feet from the northwest corner of the first parcel;

THENCE running northeasterly and southeasterly through Boylston Street, on a curve to the right having a radius of 18.50 feet, an arc distance of 21.13 feet to a point on said southerly line of Boylston Street;

THENCE running [illegible] Street, a distance of 40.00 feet, to the Point of Beginning.

Said parcel contains 40 square feet, more or less, and extends from elevation 63.00 to elevation 106.50, said elevations referring to Boston City Base.

THIRTEENTH PARCEL
(C) PART 3

Beginning at a point on the southerly line of Boylston Street, said point being S 74° 36' 24" W, a distance of 24.75 feet from the northeast corner of the first parcel;

THENCE running S 74° 36' 24" W, along said southerly line of Boylston Street, a distance of 20.00 feet to a point;

THENCE running northeasterly and southeasterly through Boylston Street, on a curve to the right having a radius of 18.50 feet, an arc distance of 21.13 feet to the Point of Beginning.

Said parcel contains 40 square feet, more or less, and extends from elevation 63.00 to elevation 96.50, said elevations referring to Boston City Base.

Parcels One through Thirteen above are shown on sheet 1 of 2 of the plans hereinbefore described.

FOURTEENTH PARCEL
(A) PART 7

Beginning at the southwest corner of the first parcel;

THENCE running along the southerly line of relocated Park Plaza on the following three (3) courses:
Easterly, 69.50 feet to a point;
Northerly, 4.00 feet to a point;
and Easterly, 4.50 feet to a point;

THENCE running through Park Plaza, on the following two (2) courses:
Southerly, 8.50 feet to a point;
and S 74° 36' 24" W, a distance of 78.50 feet to a point;

THENCE running N 15° 23' 36" W through Arlington Street, a distance of 41.15 feet, to a point;

THENCE running N 70° 00' 17" E through Arlington Street, a distance of 4.51 feet, to a point on the aforesaid relocated easterly line of Arlington Street;

THENCE southerly, along said relocated easterly line of Arlington Street, a distance of 37.01 feet, to the Point of Beginning.

Said parcel contains 537 square feet, more or less, and extends from elevation 14.00 and continuing below, said elevation referring to Boston City Base.

FIFTEENTH PARCEL
(A) PART 8

Beginning at the southeast corner of the first parcel;

THENCE running through Park Plaza on the following two (2) courses:
Southerly, 4.50 feet to a point;
and S 74° 36' 24" W, a distance of 186.60 feet, to a point on the easterly line of relocated Park Plaza;

THENCE running northerly, along said easterly line of relocated Par Plaza, a distance of 4.50 feet to a point on the southerly line of relocated Park Plaza;

THENCE running easterly, along said southerly line of relocated Par Plaza, a distance of 186.60 feet to the Point of Beginning.

Said parcel contains 840 square feet, more or less, and extends fro elevation 13.50 and continuing below, said elevation referring to Boston City Base.

SIXTEENTH PARCEL
(B) PART 4

Beginning at a point on the relocated easterly line of Arlington Street, said point being N 15° 23' 36" W, a distance of 37.01 feet from the southwest corner of the first parcel;

THENCE running through Arlington Street on the following two (2) courses;
S 70° 00' 17" W, a distance of 4.51 feet to a point;
and N 15° 23' 36" W, a distance of 69.87 feet to a point at land, or formerly of Boston Redevelopment Authority;

THENCE running through land of said Authority N 15° 23' 36" W, a distance of 55.45 feet to a point on the southerly line of Boylston Street;

THENCE running N 68° 56' 57" E, along said southerly line of Boylst Street, a distance of 4.52 feet, to a point on said relocated easte line of Arlington Street extended northerly;

THENCE running S 15° 23' 36" E, along said extended relocated easte line of Arlington Street, a distance of 108.31 feet to a point;

THENCE running S 15° 23' 36" E, along said relocated easterly line Arlington Street, a distance of 17.10 feet to the Point of Beginnin

Said parcel contains 518 square feet, more or less, and extends fro elevation 15.00 and continuing below, said elevation referring to Boston City Base.

Beginning at the northeast corner of the first parcel;

THENCE running S 74° 36' 24" W, in part along the existing southerly line of Boylston Street and in part along the relocated southerly line of Boylston Street, a distance of 311.00 feet, to a point;

THENCE running S 15° 23' 36" E, along the easterly line of relocated Arlington Street extended northerly, a distance of 1.59 feet to a point;

THENCE running S 68° 56' 57" W, along the southerly line of Boylston Street, a distance of 4.52 feet to a point;

THENCE running through Boylston Street, on the following three (3) courses:

N 15° 23' 36" W, a distance of 6.53 feet to a point;
N 74° 36' 24" E, a distance of 315.50 feet to a point;
and Southerly, 4.50 feet to the Point of Beginning.

Said parcel contains 1428 square feet, more or less, and extends from elevation 14.50 at its westerly end and from elevation 12.00 at its easterly end and continuing below, said elevations referring to Boston City Base.

Parcels Fourteen through Seventeen above are shown on sheet 2 of 2 of the plans hereinbefore described.

The plans hereinbefore described are recorded as Exhibit G to the Land Disposition Agreement recorded with Suffolk County Registry of Deeds in Book 12633, Page 1.

EXHIBIT C

LANDLORD'S WORK

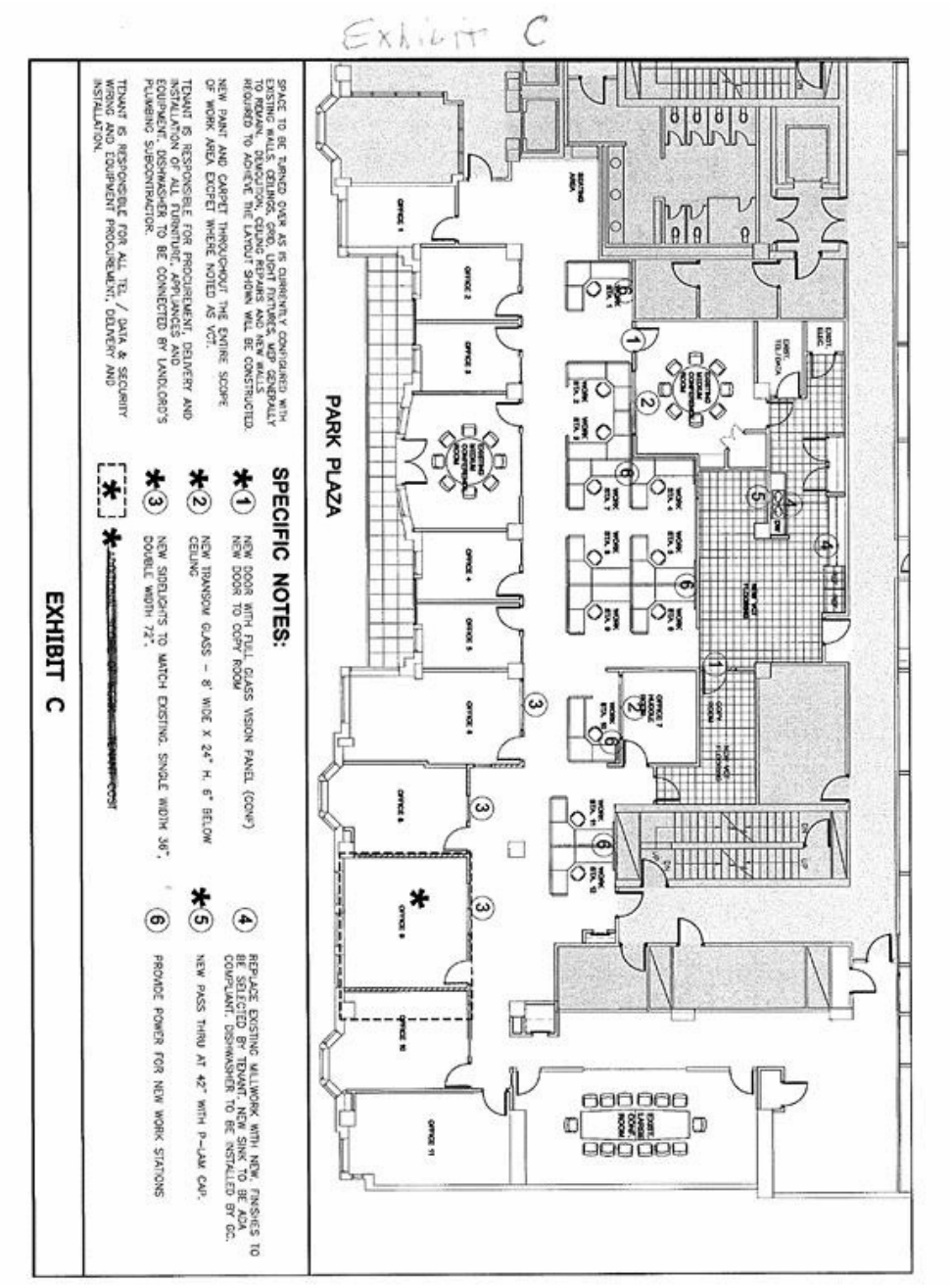


EXHIBIT D

HERITAGE ON THE GARDEN

75 PARK PLAZA

COMMERCIAL OFFICE/PUBLIC AREA CLEANING SPECIFICATIONS

OFFICE AREA

DAILY: (Monday through Friday)

- **Empty trash receptacles**
- **Dust & spot clean horizontal surfaces, furniture & brightwork**
- **Spot clean vertical surfaces**
- **Clean water fountains**
- **Clean partition & door glass**
- **Vacuum Carpeting (Shampooing by Tenant)**

MONTHLY

- **Dust table & chair legs, baseboards, ledges & moldings.**
- **Vacuum fabric furniture**
- **Clean & sanitize phones**

QUARTERLY

- **Clean diffusers**
- **High Dusting**
- **Wash windows**

LAVATORIES

DAILY: (Monday through Friday)

- **Clean & sanitize fixtures, mirrors & enamel surfaces**
- **Polish chrome**
- **Mop floors**
- **Refill dispensers**
- **Empty trash**
- **Spot Clean vertical surfaces**

MONTHLY

- **Wash all partitions, title walls & enamel surfaces**

QUARTERLY

- **Clean diffusers**
- **Machine clean floors**

PUBLIC AREAS

DAILY: (Monday through Friday)

- **Empty trash receptacles**
- **Dust & spot clean horizontal surfaces, etc.**
- **Spot clean vertical surfaces**
- **Clean & polish drinking fountains**
- **Clean doors & frames**
- **Vacuum carpeting, mop & buff floors**
- **Clean & polish elevator walls & brightwork**
- **Vacuum elevator carpet & spot clean**
- **Dust railings**
- **Sweep Stairs**

MONTHLY

- **High dust**
- **Dust table & chair legs, baseboards, ledges & moldings**
- **Vacuum fabric furniture**
- **Spot clean railings**
- **Damp mop stairs & landings**

QUARTERLY

- **Wash trash receptacles**
- **Clean diffusers**
- **Shampoo carpets**
- **Wash windows (INTERIOR)**

EXHIBIT F

ADDRESS FOR PAYMENTS

The Landlord hereby authorizes and instructs Tenant to send all payments of rent due under the Lease (including without limitation fixed rent, and amounts due for operating expenses and real estate taxes) directly to the account specified below or if payments are made by check or cash to the address specified below, notwithstanding any contrary provision of the Lease:

Account Information:

TDC Heritage LLC
Bank of America
ABA # 011000138
Account # 0046 4058 7015

Address Information:

TDC Heritage LLC
Bank of America
P.O. Box 417966
Boston, MA 02441-7966

These payment instructions have been implemented as part of a credit facility provided to the Landlord by Teachers Insurance and Annuity Association of America ("TIAA"). Tenant is to continue making all lease payments in accordance with these instructions until it receives further written instructions signed by TIAA (or its successor as Lender).

Please note that TIAA is neither a mortgagee-in-possession nor a receiver of rents, and TIAA has not assumed any obligations of the Landlord under the Lease. Therefore, Tenant should continue to send all communications regarding the Lease or landlord issues in the manner specified in the Lease and not to TIAA. TIAA has no obligation with respect to any such notice, and notice to TIAA will not be deemed effective notice to the Landlord under the Lease.

Exhibit 10.26

Tenant: Paratek Pharmaceuticals
Premises: 1000 First Avenue, Suite 400

LEASE

THIS LEASE (this "Lease") is entered into as of January 23, 2015, between ATLANTIC AMERICAN PROPERTIES TRUST, a Maryland real estate investment trust ("Landlord"), and PARATEK PHARMACEUTICALS LLC, a Delaware limited liability company ("Tenant").

In consideration of the mutual covenants stated below, and intending to be legally bound, the parties covenant and agree as follows:

1. SUMMARY OF KEY DEFINED TERMS.

(a) "Abatement Period" means the period that begins on the Commencement Date and ends on the day immediately prior to the 4-month anniversary of the Commencement Date. During the Abatement Period, Tenant shall pay to Landlord: (i) Tenant's Share of Janitorial Expenses; (ii) utilities as set forth in Section 6; and (iii) all other amounts due Landlord with the exception of Fixed Rent.

(b) "Additional Rent" means all costs and expenses other than Fixed Rent that Tenant is obligated to pay Landlord pursuant to this Lease.

(c) "Broker" means Cushman and Wakefield of PA, Inc.

(d) "Building" means the building located at 1000 First Avenue, King of Prussia, PA 19406, containing approximately 74,139 rentable square feet.

(e) "Business Hours" means the hours of 7:00 a.m. – 6:00 p.m., Monday through Friday, excluding Building holidays.

(f) "Commencement Date" means the date that is earlier of: (i) the date on which Tenant first conducts any business at all or any portion of the Premises; or (ii) the date on which Landlord Substantially Completes the Leasehold Improvements (as such terms are defined in Exhibit C). Subject to the provisions of Section 2 of Exhibit C, the Commencement Date is targeted for 8 weeks following full execution of the Lease.

(g) "Common Areas" means, to the extent applicable, the lobby, parking facilities, passenger elevators, rooftop terrace, fitness or health center, plaza and sidewalk areas, multi-tenanted floor restrooms, and other similar areas of general access at the Building or designated for the benefit of Building tenants, and the areas on multi-tenant floors in the Building devoted to corridors, elevator lobbies, and other similar facilities serving the Premises.

(h) "Complex" means the complex of buildings of which the Building is a part, known as Maschellmac, and all other improvements located therein.

(i) "Expiration Date" means the last day of the Term, or such earlier date of termination of this Lease pursuant to the terms hereof.

(j) "Fixed Rent" means fixed rent in the amounts set forth below:

TIME PERIOD	FIXED RENT PER R.S.F.	ANNUALIZED FIXED RENT	MONTHLY INSTALLMENT
Commencement Date – end of Abatement Period	$0.00	$0.00	$0.00
Fixed Rent Start Date – end of Rent Period 1	$23.00	$71,576.00	$5,964.67
Rent Period 2	$23.50	$73,132.00	$6,094.33
Rent Period 3	$24.00	$74,688.00	$6,224.00
Rent Period 4	$24.50	$76,244.00	$6,353.67
Rent Period 5	$25.00	$77,800.00	$6,483.33
Rent Period 6 – Expiration Date	$25.50	$79,356.00	$6,613.00

(k) "Fixed Rent Start Date" means the day immediately following the end of the Abatement Period. If the Fixed Rent Start Date is not the first day of a calendar month, then the Fixed Rent due for the partial month commencing on the Commencement Date shall be prorated based on the number of days in such month.

(l) "Initial Term" means the period commencing on the Commencement Date, and ending at 11:59 p.m. on: (i) if the Commencement Date is the first day of a calendar month, the day immediately prior to the 65-month anniversary of the Commencement Date; or (ii) if the Commencement Date is not the first day of a calendar month, the last day of the calendar month containing the 65-month anniversary of the Commencement Date.

(m) "Laws" means federal, state, county, and local governmental and municipal laws, statutes, ordinances, rules, regulations, codes, decrees, orders, and other such requirements, and decisions by courts in cases where such decisions are considered binding precedents in the state or commonwealth in which the Premises are located ("State"), and decisions of federal courts applying the laws of the State, including without limitation Title III of the Americans with Disabilities Act of 1990, 42 U.S.C. §12181 et seq. and its regulations.

(n) "Premises" means Suite 400 in the Building, consisting of approximately 3,112 rentable square feet, as shown on Exhibit A attached hereto.

(o) "Project" means the Building together with the parcel of land upon which the Building is located and all Common Areas.

(p) "Rent" means Fixed Rent and Additional Rent. Landlord may apply payments received from Tenant to any obligations of Tenant then due and owing without regard to any contrary Tenant instructions or requests. Additional Rent shall be paid by Tenant in the same manner as Fixed Rent, without setoff, deduction, or counterclaim.

(q) "Rent Period" means, with respect to the first Rent Period, the period that begins on the Fixed Rent Start Date and ends on the last day of the calendar month preceding the month in which the first anniversary of the Fixed Rent Start Date occurs; thereafter each succeeding Rent Period shall commence on the day following the end of the preceding Rent Period, and shall extend for 12 consecutive months; provided, however, the final Rent Period shown in the Fixed Rent chart above shall end on the Expiration Date.

(r) "Security Deposit" means $11,929.34.

(s) "Tenant's NAICS Code" means Tenant's 6-digit North American Industry Classification number under the North American Industry Classification System as promulgated by the Executive Office of the President, Office of Management and Budget, which is _____. [http://www.naics.com/search/]

(t) "Term" means the Initial Term together with any extension of the term of this Lease agreed to by the parties in writing.

2. PREMISES. Landlord leases to Tenant, and Tenant leases from Landlord, for the Term and upon the terms and subject to the conditions of this Lease, the Premises. Tenant accepts the Premises in their "AS IS", "WHERE IS", "WITH ALL FAULTS" condition, except that Landlord shall complete the Leasehold Improvements pursuant to Exhibit C attached hereto.

3. TERM; RENTABLE AREA. The Term shall commence on the Commencement Date. Except as set forth herein, he terms and provisions of this Lease are binding on the parties upon Tenant's and Landlord's execution of this Lease notwithstanding a later Commencement Date for the Term. The rentable area of the Premises and the Building shall be deemed to be as stated in Section 1. By the Confirmation of Lease Term substantially in the form of Exhibit B attached hereto ("COLT"), Landlord shall notify Tenant of the Commencement Date, rentable square footage of the Premises and all other matters stated therein. The COLT shall be conclusive and binding on Tenant as to all matters set forth therein, unless within 10 days following delivery of the COLT to Tenant, Tenant contests any of the matters contained therein by notifying Landlord in writing of Tenant's objections.

4. FIXED RENT; SECURITY DEPOSIT; LATE FEE.

(a) Tenant covenants and agrees to pay to Landlord during the Term, without notice, demand, setoff, deduction, or counterclaim, Fixed Rent in the amounts set forth in Section 1. The Monthly Installment of Fixed Rent, the monthly amount of Estimated Operating Expenses (as set forth in Section 5) and any estimated amount of utilities as set forth in Section 6 shall be payable to Landlord in advance on or before the first day of each month of the Term by: (i) check payable to Landlord, sent to Brandywine Operating Partnership, LP, P.O. Box 11951, Newark, NJ 07101-4951; (ii) auto debit transfer; (iii) electronic fund transfer through the Automated Clearing House network or similar system designated by Landlord, to the extent available; or (iv) wire transfer of immediately available funds to the account at Wells Fargo Bank, N.A., Salem, NJ account no. 2030000359075 ABA# 121000248 and Tenant shall notify Landlord of each such wire transfer by email to Wire.Confirmation@bdnreit.com (or such other email address provided by Landlord to Tenant); or as otherwise directed in writing by Landlord to Tenant from time to time. All Rent payments shall include the Building number and the Lease number, which numbers will be provided to Tenant in the COLT.

(b) Contemporaneously with Tenant's delivery of this Lease, Tenant shall pay to Landlord: (i) the m onthly Fixed Rent for the first full calendar month after the Abatement Period; and (ii) the Security Deposit. No interest shall be paid to Tenant on the Security Deposit, and Landlord shall have the right to commingle the Security Deposit with other funds of Landlord. If Tenant fails to perform any of its obligations under this Lease, Landlord may use, apply or retain the whole or any part of the Security Deposit for the payment of: (A) any rent or other sums that Tenant has not paid when due; (B) any sum expended by Landlord in accordance with the provisions of this Lease; and/or (C) any sum that Landlord expends or is required to expend in connection with an Event of Default (as defined in Section 17). Landlord's use of the Security Deposit shall not prevent Landlord from exercising any other remedy available to Landlord under this Lease, at law or in equity and shall not operate as either liquidated damages or as a limitation on any recovery to which Landlord may otherwise be entitled. If any portion of the Security Deposit is used, applied, or retained by Landlord, Tenant shall, within 10 days after the written demand therefor, deposit cash with Landlord in an amount sufficient to restore the Security Deposit to its original amount. Landlord shall return the Security Deposit or the balance thereof (as applicable) to Tenant within 1 month after the later of the Expiration Date, Tenant's surrender of possession of the Premises to Landlord in the condition required under this Lease, and Tenant's payment of all outstanding Rent. If Landlord conveys ownership of the Building and Landlord delivers the Security Deposit to the transferee, Landlord shall thereupon be released from all liability for the return of such Security Deposit and Tenant shall look solely to the transferee for the return of the Security Deposit. In addition to the foregoing, if Tenant defaults more than once in the performance of its monetary obligations under this Lease (and regardless of whether Tenant has cured such default during or after any applicable notice and/or cure period) and the aggregate amount of such monetary defaults is in excess of four months of the then-applicable Monthly Installment of Fixed Rent, then Landlord may require Tenant to increase the Security Deposit to the greater of two times the: (A) monthly Fixed Rent; or (B) initial amount of the Security Deposit.

(c) If Landlord does not receive the full payment from Tenant of any Rent when due under this Lease (without regard to any notice and/or cure period to which Tenant might be entitled), Tenant shall also pay to Landlord as Additional Rent a late fee in the amount of 8% of such overdue amount. Notwithstanding the foregoing, upon Tenant's written request, Landlord shall waive the above-referenced late fee 1 time during any 12 consecutive months of the Term provided Tenant makes the required payment within 3 days after receipt of notice of such late payment. With respect to any Rent payment (whether it be by check, ACH/wire, or other method) that is returned unpaid for any reason, Landlord shall have the right to assess a fee to Tenant as Additional Rent, which fee is currently $30.00 per returned payment.

5. OPERATING EXPENSES.

(a) Certain Definitions.

(i) "Base Year" means calendar year 2015.

(ii) "Janitorial Expenses" means all costs associated with trash and garbage removal, recycling, cleaning and sanitizing the Building, and the items of work set forth in Exhibit D attached hereto.

(iii) "Operating Expenses" means collectively Project Expenses, Taxes, Snow Expenses, and Janitorial Expenses.

(iv) "Project Expenses" means all costs and expenses incurred by Landlord in connection with the maintenance, operation, repair, and replacement of the Project including, without limitation, Janitorial Expenses, a management fee not to exceed 3% of gross rents and revenues from the Project; property management office rent; fitness center operating costs; security measures; transportation program costs; capital expenditures, repairs, and replacements, but only to the extent of the amortized costs of such capital item over the useful life of the improvement as reasonably determined according to GAAP or, if greater, the actual savings created by such capital item for each year of the Term (" Includable Capital Expenses"); and all insurance premiums and deductibles paid or payable by Landlord with respect to the Project. The foregoing notwithstanding, Project Expenses shall not include Taxes (as defined below). Tenant shall pay, in monthly installments in advance, on account of Tenant's Share of Project Expenses, the estimated amount of the increase of such Project Expenses for such year in excess of the Project Expenses for the Base Year as determined by Landlord in its reasonable discretion. Notwithstanding the foregoing, "Project Expenses" shall not include any of the following: (A) repairs or other work occasioned by fire, windstorm or other insured casualty or by the exercise of the right of eminent domain to the extent Landlord actually receives insurance proceeds or condemnation awards therefor; (B) leasing commissions, accountants', consultants', auditors or attorneys' fees, costs and disbursements and other expenses incurred in connection with negotiations or disputes with other tenants or prospective tenants or other occupants, or associated with the enforcement of any other leases or the defense of Landlord's title to or interest in the real property or any part thereof; (C) costs incurred by Landlord in connection with the original construction of the Building and related facilities; (D) costs (including permit, licenses and inspection fees) incurred in renovating or otherwise improving or decorating, painting, or redecorating leased space for other tenants or other occupants or vacant space; (E) interest on debt or amortization payments on any mortgage or deeds of trust or any other borrowings and any ground rent; (F) any compensation paid to clerks, attendants or other persons in commercial concessions operated by Landlord; (G) any fines or fees for Landlord's failure to comply with Laws; (H) legal, accounting and other expenses related to Landlord's financing, refinancing, mortgaging or selling the Building or the Project; (I) any increase in an insurance premium caused by the non-general office use, occupancy or act of another tenant; (J) costs for sculpture, decorations, painting or other objects of art in excess of amounts typically spent for such items in office buildings of comparable quality in the competitive area of the Building; (K) cost of any political, charitable or civic contribution or donation; (L) reserves for repairs, maintenance and replacements; (M) Project Utility Costs (as defined in Section 6(a)); (N) Taxes; (O) cost of utilities directly metered or submetered to Building tenants and paid separately by such tenants; (P) fines, interest, penalties or liens arising by reason of Landlord's failure to pay any Project Expenses when due, except that Project Expenses shall include interest or similar charges if the collecting authority permits such Project Expenses to be paid in installments with interest thereon, such payments are not considered overdue by such authority and Landlord pays the Project Expenses in such installments; (Q) costs and expenses associated with hazardous waste or hazardous substances not generated or

brought to the Project by Tenant or its agents including but not limited to the cleanup of such hazardous waste or hazardous substances and the costs of any litigation (including, but not limited to reasonable attorneys' fees) arising out of the discovery of such hazardous waste or hazardous substances; (R) wages, salaries, fees and fringe benefits paid to all personnel above the level of regional property manager, who are not assigned, in whole or in part to the operation, management or repair of the Building; (T) costs of extraordinary services provided to other tenants of the Building or services to which Tenant is not entitled (including, without limitation, costs specially billed to and paid by specific tenants); (U) all costs relating to activities for the solicitation and execution of leases of space in the Building, including legal fees, real estate brokers' commissions, expenses, fees, and advertising, moving expenses, design fees, rental concessions, rental credits, tenant improvement allowances, lease assumptions or any other cost and expenses incurred in the connection with the leasing of any space in the Building; (V) costs representing an amount paid to an affiliate of Landlord (exclusive of any management fee permitted under the Operating Expense inclusions) to the extent in excess of market rates for comparable services if rendered by unrelated third parties; (W) costs arising from Landlord's default under this Lease or any other lease for space in the Building; (X) costs of selling the Project or any portion thereof or interest therein; (Y) costs or expenses arising from the gross negligence of Landlord, its agents or employees; (Z) costs incurred to remedy, repair or otherwise correct violations of Laws that exist on the Commencement Date; (AA) ground rents or rentals payable by Landlord pursuant to any over-lease. Landlord shall not collect or be entitled to collect Project Expenses from all of its tenants an amount in excess of 100% of the Project Expenses actually incurred by Landlord, or (BB) the cost of any capital improvements or any capital expenses other than the Includable Capital Expenses.

(v) "Snow Expenses" means all costs associated with the removal of snow and ice from the Project.

(vi) "Snow Stop" means $0.25.

(vii) "Taxes" means all taxes, assessments and other governmental charges, including business improvement district charges and special assessments for public improvements or traffic districts that are levied or assessed against the Project during the Term or, if levied or assessed prior to the Term, are properly allocable to the Term, business property operating license charges, and real estate tax appeal expenditures incurred by Landlord. Taxes shall not include: (i) any inheritance, estate, succession, transfer, gift, franchise, corporation, net income or profit tax or capital levy that is or may be imposed upon Landlord; or (ii) any transfer tax or recording charge resulting from a transfer of the Building or the Project; provided, however, if at any time during the Term the method of taxation prevailing at the commencement of the Term shall be altered such that in lieu of or as a substitute in whole or in part for any Taxes now levied, assessed or imposed on real estate there shall be levied, assessed or imposed: (A) a tax on the rents received from such real estate; or (B) a license fee measured by the rents receivable by Landlord from the Premises or any portion thereof; or (C) a tax or license fee imposed upon Premises or any portion thereof, then the same shall be included in Taxes. Tenant may not file or participate in any Tax appeals for any tax lot in the Project.

(viii) "Tenant's Share" means the rentable square footage of the Premises divided by the rentable square footage of the Building on the date of calculation, which on the date of this Lease is stipulated to be 4.2%. Tenant's Share will change during the Term if the rentable square footage of the Premises and/or the Building changes.

(b) Commencing on the first day after the end of the Base Year and continuing thereafter during the Term, Tenant shall pay to Landlord in advance on a monthly basis, payable pursuant to Section 4(c) below, Tenant's Share of Project Expenses to the extent Project Expenses exceed Project Expenses for the Base Year, Janitorial Expenses to the extent Janitorial Expenses exceed Janitorial Expenses during the Base Year, and Taxes to the extent Taxes exceed Taxes for the Base Year. Commencing on the Commencement Date, Tenant shall pay to Landlord in advance on a monthly basis, payable pursuant to Section 5(c) below, Tenant's Share of Snow Expenses to the extent Snow Expenses exceed the Snow Stop. To the extent that any Operating Expenses are incurred by Landlord (or Landlord's affiliate(s)) for multiple buildings or uses, Landlord shall allocate such Operating Expenses to the Building on a commercially reasonable basis. If Landlord receives a discount in any component of Operating Expenses, for example as a result of Landlord's election to prepay such expense, Landlord shall have the right to calculate Operating Expenses without such discount.

(c) For each calendar year (or portion thereof) for which Tenant has an obligation to pay any Operating Expenses, Landlord shall send to Tenant a statement of the monthly amount of projected Operating Expenses due from Tenant for such calendar year ("Estimated Operating Expenses"), and Tenant shall pay to Landlord such monthly amount of Estimated Operating Expenses as provided in Section 5(b), without further notice, demand, setoff, deduction, or counterclaim. As soon as administratively available after each calendar year, Landlord shall send to Tenant a reconciliation statement of the actual Operating Expenses for the prior calendar year ("Reconciliation Statement"). If the amount actually paid by Tenant as Estimated Operating Expenses exceeds the amount due per the Reconciliation Statement, Tenant shall receive a credit in an amount equal to the overpayment, which credit shall be applied towards future Rent until fully credited. If the credit exceeds the aggregate future Rent owed by Tenant, and there is no Event of Default, Landlord shall pay the excess amount to Tenant within 30 days after delivery of the Reconciliation Statement. If Landlord has undercharged Tenant, then Landlord shall send Tenant an invoice setting forth the additional amount due, which amount shall be paid in full by Tenant within 30 days after receipt of such invoice.

(d) If, during the Term (including during the Base Year), less than 95% of the rentable area of the Building is or was occupied by tenants, Project Expenses, Project Utility Costs, and Snow Expenses shall be deemed for such year to be an amount equal to the costs that would have been incurred had the occupancy of the Building been at least 95% throughout such year, as reasonably determined by Landlord and taking into account that certain expenses fluctuate with the Building's occupancy level (*e.g.*, Janitorial Expenses) and certain expenses do not so fluctuate (*e.g.*, landscaping). In addition, if Landlord is not obligated or otherwise does not offer to furnish an item or a service to a particular tenant or portion of the Building (*e.g.*, if a tenant separately contracts with an office cleaning firm to clean such tenant's premises) and the cost of such item or service would be included in Project Expenses, Project Utility Costs, and/or Snow Expenses, Landlord shall equitably adjust the Project Expenses, Project Utility Costs, or Snow Expenses so the cost of the item or service is shared only by tenants actually receiving such item or service. Landlord may adjust the Base Year to exclude extraordinary fluctuations. If, during the Term (including during the Base Year), the Project is not fully assessed for real estate tax purposes, then the Taxes for the applicable year shall be deemed to be an amount equal to the Taxes that would normally be expected to have been incurred had the Project been fully assessed during such period. All payment calculations under this Section shall be prorated for any partial calendar years during the Term and all calculations shall be based upon Project Expenses, Project Utility Costs, and Snow Expenses as grossed-up in accordance with the terms of this Lease. Tenant's obligations under this Section shall survive the Expiration Date.

(e) If Landlord or any affiliate of Landlord has elected to qualify as a real estate investment trust ("REIT"), any service required or permitted to be performed by Landlord pursuant to this Lease, the charge or cost of which may be treated as impermissible tenant service income under the laws governing a REIT, may be performed by an independent contractor of Landlord, Landlord's property manager, or a taxable REIT subsidiary that is affiliated with either Landlord or Landlord's property manager (each, a "Service Provider"). If Tenant is subject to a charge under this Lease for any such service, then at Landlord's direction Tenant shall pay the charge for such service either to Landlord for further payment to the Service Provider or directly to the Service Provider and, in either case: (a) Landlord shall credit such payment against any charge for such service made by Landlord to Tenant under this Lease; and (b) Tenant's payment of the Service Provider shall not relieve Landlord from any obligation under this Lease concerning the provisions of such services.

(f) Tenant shall have the right, at its sole cost and expense, to audit or have its appointed accountant audit Landlord's records related to a Reconciliation Statement provided: (i) Tenant provides notice of its intent to audit such Reconciliation Statement within 3 months after receipt of the Reconciliation Statement; (ii) the audit is performed by Tenant or a certified public accountant that has not been retained on a contingency basis or other basis where its compensation relates to the cost savings of Tenant; (iii) any such audit may not occur more frequently than once during each 12-month period of the Term, nor apply to any year prior to the year of the then-current Reconciliation Statement being reviewed; (iv) the Base Year may be included in the audit only in the 1st year following the Base Year; (v) the audit is completed within 1 month after the date that Landlord makes all of the necessary and applicable records available to Tenant or Tenant's auditor; (vi) the contents of Landlord's records shall be kept confidential by Tenant, its auditor, and its other professional advisors, other than as required by applicable Law; (vii) if Tenant or its auditor determines that an overpayment is due Tenant, Tenant or Tenant's auditor shall produce a detailed report addressed to both Landlord and Tenant, which report shall be delivered within 15 days after Tenant's or Tenant's auditor's completion of the audit. During completion of Tenant's audit, Tenant

shall nonetheless timely pay all of Tenant's Share of Operating Expenses without setoff or deduction. If Tenant's audit discloses any discrepancy, Landlord and Tenant shall use their best efforts to resolve the dispute, failing which they shall submit such dispute to arbitration pursuant to the rules and under the jurisdiction of the American Arbitration Association in which the Building is located. The decision rendered in such arbitration shall be final, b inding, and non-appealable, and any payments to be made in accordance with the arbitrator's decision shall be made promptly and judgment on the award rendered by the arbitrator may be entered in any court having jurisdiction thereof. Within 30 days after resolution of the dispute, whether by agreement of the parties or a final decision of an arbitrator, Landlord shall pay or credit to Tenant, or Tenant shall pay to Landlord, as the case may be, all unpaid Operating Expenses due and owing.

6. UTILITIES.

(a) Commencing on the Commencement Date, and continuing throughout the Term, Tenant shall pay for utility services as follows without setoff, deduction, or counterclaim: (i) Tenant shall pay directly to the applicable utility service provider for any utilities that are separately metered to the Premises; (ii) Tenant shall pay Landlord as Additional Rent for any utilities that are separately submetered to the Premises based upon Tenant's submetered usage, as well as for any maintenance and replacement costs associated with such submeters; (iii) Tenant shall pay Landlord as Additional Rent for its proportionate share of any utilities serving the Premises that are not separately metered or submetered based upon its share of the area served by the applicable meter or submeter; and (iv) Tenant shall pay Landlord as Additional Rent for Tenant's Share of all utilities serving the Project, excluding the costs of utilities that are directly metered or submetered to Building tenants or paid separately by such tenants ("Project Utility Costs"). As of the date hereof, to Landlord's actual knowledge, but without prejudice to Landlord's right to make modifications from time to time:

- Electric for the Premises is paid per proportionate share and paid per subsection (iii) above.
- Gas for the Premises is not provided at this time.
- Water/Sewer for the Premises is paid per proportionate share and paid per subsection (iii) above.
- Oil for the Premises is not provided at this time.

Notwithstanding anything to the contrary in this Lease, Landlord shall have the right to install meters, submeters, or other energy-reducing systems in the Premises at any time to measure any or all utilities serving the Premises, the costs of which shall be included in Project Expenses. For those utilities set forth in subsections (ii) – (iv) above, Landlord shall have the right to estimate the utility charge, which estimated amount shall be payable to Landlord within 20 days after receipt of an invoice therefor and may be included along with the invoice for Project Expenses, provided Landlord shall be required to reconcile on an annual basis based on utility invoices received for such period. The cost of utilities payable by Tenant under this Section shall include all applicable taxes and Landlord's then-current charges for reading the applicable meters, provided Landlord shall have the right to engage a third party to read the submeters, and Tenant shall reimburse Landlord for both the utilities consumed as evidenced by the meters plus the costs for reading the meters within 20 days after receipt of an invoice therefor. Tenant shall pay such rates as Landlord may establish from time to time, which shall not be in excess of any applicable rates chargeable by Law, or in excess of the general service rate or other such rate that would apply to Tenant's consumption if charged by the utility or municipality serving the Building or general area in which the Building is located. If Tenant fails to pay timely any direct-metered utility charges from the applicable utility provider, Landlord shall have the right but not the obligation to pay such charges on Tenant's behalf and bill Tenant for such costs plus the Administrative Fee (as defined in Section 17), which amount shall be payable to Landlord as Additional Rent within 20 days after receipt of an invoice therefor.

(b) For any separately metered utilities, Landlord is hereby authorized to request and obtain, on behalf of Tenant, Tenant's utility consumption data from the applicable utility provider for informational purposes and to enable Landlord to obtain full building Energy Star scoring for the Building. Landlord shall have the right to shut down the Building systems (including electricity and HVAC systems) for required maintenance and safety inspections, and in cases of emergency; provided however that, except in cases of emergency, Landlord will

use commercially reasonable efforts to schedule any shut downs of the Building systems outside Business Hours. Landlord shall not be liable for any interruption in providing any utility that Landlord is obligated to provide under this Lease, unless such interruption or delay: (i) renders the Premises or any material portion thereof untenantable for the normal conduct of Tenant's business at the Premises, and Tenant has ceased using such untenantable portion, provided Tenant shall first endeavor to use any generator that serves the Premises or of which Tenant has the beneficial use; (ii) results from Landlord's negligence or willful misconduct; and (iii) extends for a period longer than 7 consecutive days, in which case, Tenant's obligation to pay Fixed Rent shall be abated with respect to the untenantable portion of the Premises that Tenant has ceased using for the period beginning on the 8th consecutive day after such conditions are met and ending on the earlier of: (A) the date Tenant recommences using the Premises or the applicable portion thereof; or (B) the date on which the service(s) is substantially restored. The rental abatement described above shall be Tenant's sole remedy in the event of a utility interruption, and Tenant hereby waives any other rights against Landlord in connection therewith. Landlord shall have the right to change the utility providers to the Project at any time. In the event of a casualty or condemnation affecting the Building and/or the Premises, the terms of Sections 14 and 15, respectively, shall control over the provisions of this Section.

(c) If Landlord reasonably determines that: (i) Tenant exceeds the design conditions for the heating, ventilation, and air conditioning ("HVAC") system serving the Premises, introduces into the Premises equipment that overloads such system, or causes such system to not adequately perform its proper functions; or (ii) the heavy concentration of personnel, motors, machines, or equipment used in the Premises, including telephone and computer equipment, or any other condition in the Premises caused by Tenant (for example, more than one shift per day or 24-hour use of the Premises), adversely affects the temperature or humidity otherwise maintained by such system, then Landlord shall notify Tenant in writing and Tenant shall have 10 days to remedy the situation to Landlord's reasonable satisfaction. If Tenant fails to timely remedy the situation to Landlord's reasonable satisfaction, Landlord shall have the right to install one or more supplemental air conditioning units in the Premises with the cost thereof, including the cost of installation, operation and maintenance, being payable by Tenant to Landlord within 30 days after Landlord's written demand. Tenant shall not change or adjust any closed or sealed thermostat or other element of the HVAC system serving the Premises without Landlord's express prior written consent. Landlord may install and operate meters or any other reasonable system for monitoring or estimating any services or utilities used by Tenant in excess of those required to be provided by Landlord (including a system for Landlord's engineer reasonably to estimate any such excess usage). If such system indicates such excess services or utilities, Tenant shall pay Landlord's reasonable charges for installing and operating such system and any supplementary air conditioning, ventilation, heat, electrical, or other systems or equipment (or adjustments or modifications to the existing Building systems and equipment), and Landlord's reasonable charges for such amount of excess services or utilities used by Tenant. All supplemental HVAC systems and equipment serving the Premises shall be separately metered to the Premises at Tenant's cost, and Tenant shall be solely responsible for all electricity registered by, and the maintenance and replacement of, such meters. Landlord has no obligation to keep cool any of Tenant's information technology equipment that is placed together in one room, on a rack, or in any similar manner ("IT Equipment"), and Tenant waives any claim against Landlord in connection with Tenant's IT Equipment. Landlord shall have the option to require that the computer room and/or information technology closet in the Premises shall be separately submetered at Tenant's expense, and Tenant shall pay Landlord for all electricity registered in such submeter. Within 1 month after written request, Tenant shall provide to Landlord electrical load information reasonably requested by Landlord with respect to any computer room and/or information technology closet in the Premises.

7. LANDLORD SERVICES

(a) Landlord shall provide the following to the Premises: (i) HVAC service in the respective seasons during Business Hours; (ii) electricity sufficient for lighting and standard office equipment for comparable buildings in the market in which the Project is located; (iii) water, sewer, and, to the extent applicable to the Building, gas, oil, and steam service; and (iv) cleaning services meeting the minimum specifications set forth in Exhibit D attached hereto. Tenant, at Tenant's expense, shall make arrangements with the applicable utility companies and public bodies to provide, in Tenant's name, telephone, cable, and any other utility service not provided by Landlord that Tenant desires at the Premises.

(b) Landlord shall not be obligated to furnish any services, supplies, or utilities other than as set forth in this Lease; provided, however, upon Tenant's prior request sent in accordance with Section 25(p) below, Landlord may furnish additional services, supplies, or utilities, in which case Tenant shall pay to Landlord, immediately upon demand, Landlord's then-current charge for such additional services, supplies, or utilities, or Tenant's pro rata share thereof, if applicable, as reasonably determined by Landlord. Landlord's current rate for HVAC service outside of Business Hours requested with at least 24 hours' prior notice (or by noon for weekend service) is $75.00 per hour, per zone, with a two-hour minimum if the service does not commence immediately following the end of a day's Business Hours.

8. USE; SIGNS; PARKING; COMMON AREAS.

(a) Tenant shall use the Premises for general office use (non-medical) and storage incidental thereto, and for no other purpose ("Permitted Use"). Tenant's use of the Premises for the Permitted Use shall be subject to all applicable Laws and to all reasonable requirements of the insurers of the Building. Tenant represents and warrants that Tenant's NAICS Code is set forth in Section 1 hereof.

(b) Landlord, at Landlord's expense, shall provide the originally named Tenant with Building-standard identification signage on all Building lobby directories and at the main entrance to the Premises. Tenant shall not place, erect, or maintain any signs at the Premises, the Building, or the Project that are visible from outside of the Premises.

(c) Subject to the Building rules and regulations, Tenant shall have the nonexclusive right in common with others to use: (i) the paved driveways and walkways at the Project for vehicular and pedestrian access to the Building; (ii) Common Areas.

(d) Landlord shall have the right in its sole discretion to, from time to time, construct, maintain, operate, repair, close, limit, take out of service, alter, change, and modify all or any part of the Common Areas; provided however that Landlord shall make such repairs in a manner that maintains the character and quality of the Building and the Project.

(e) Subject to Landlord's security measures and Force Majeure Events (as defined in Section 25(g)), Landlord shall provide Tenant with access to the Building and, if applicable, passenger elevator service for use in common with others for access to and from the Premises 24 hours per day, 7 days per week, except during emergencies. Landlord shall have the right to limit the number of elevators (if any) to be operated during repairs and during non-Business Hours. If applicable, Landlord shall provide Tenant with access to the freight elevator(s) of the Building from time to time following receipt of Tenant's prior request, and Tenant shall pay Landlord's then-current charge for use of such freight elevators).

9. TENANT'S ALTERATIONS. Tenant shall not cut or drill into or secure any fixture, apparatus or equipment or make alterations, improvements or physical additions (collectively, "Alterations") of any kind to any part of the Premises without first obtaining the written consent of Landlord, which consent shall not be unreasonably withheld, conditioned, or delayed. All Alterations shall be completed in compliance with all applicable Laws and Landlord's rules and regulations for construction, and sustainable guidelines and procedures. Notwithstanding the foregoing, Landlord's consent shall not be required for any Alteration costing less than $20,000.00 and that: (i) is nonstructural; (ii) does not impact any of the Building systems, involve electrical or drywall work, require a building permit, or materially affect the air quality in the Building; and (iii) is not visible from outside of the Premises. Tenant shall be solely responsible for the installation and maintenance of its data, telecommunication, and security systems and wiring at the Premises, which shall be done in compliance with all applicable Laws and Landlord's rules and regulations. With respect to all improvements and Alterations made after the date hereof, other than those made by Landlord pursuant to the express provisions of this Lease, Tenant acknowledges that: (A) Tenant is not, under any circumstance, acting as the agent of Landlord; (B) Landlord did not cause or request such Alterations to be made; (C) Landlord has not ratified such work; and (D) Landlord did not authorize such Alterations within the meaning of applicable state statutes. Nothing in this Lease or in any consent to the making of Alterations or improvements shall be deemed or construed in any way as constituting a request by Landlord, express or implied, to any contractor, subcontractor, or supplier for the performance of any labor or the furnishing of any materials for the use or benefit of Landlord.

10. ASSIGNMENT AND SUBLETTING.

(a) Except as expressly permitted pursuant to Section 10(c), neither Tenant nor Tenant's legal representatives or successors-in-interest by operation of law or otherwise, shall sell, assign, transfer, hypothecate, mortgage, encumber, grant concessions or licenses, sublet, or otherwise dispose of all or any interest in this Lease or the Premises, or permit any person or entity other than Tenant to occupy any portion of the Premises (each of the foregoing are a "Transfer" to a "Transferee"), without Landlord's prior written consent, which consent shall not be unreasonably withheld, conditioned, or delayed. Any Transfer undertaken without Landlord's prior written consent shall constitute an Event of Default and shall, at Landlord's option, be void and/or terminate this Lease. For purposes of this Lease, a Transfer shall include, without limitation, any assignment by operation of law, and any merger, consolidation, or asset sale involving Tenant, any direct or indirect transfer of control of Tenant, and any transfer of a majority of the ownership interests in Tenant; provided however, that any transfer of a majority interest in Tenant in connection with a financing transaction undertaken with institutional investors who typically invest in life sciences companies shall not be deemed a Transfer. Consent by Landlord to any on Transfer shall be held to apply only to the specific Transfer authorized, and shall not be construed as a waiver of the duty of Tenant, or Tenant's legal representatives or assigns, to obtain from Landlord consent to any other or subsequent Transfers pursuant to the foregoing, or as modifying or limiting the rights of Landlord under the foregoing covenant by Tenant.

(b) Without limiting the bases upon which Landlord may withhold its consent to a proposed Transfer, it shall not be unreasonable for Landlord to withhold its consent if Landlord has a reasonable, good faith basis to determine that: (i) with regard to an assignment of this Lease, the proposed Transferee shall have a net worth that is less than Tenant's net worth immediately prior to the proposed assignment (as determined according to GAAP) so long as Tenant's net worth immediately prior to the proposed assignment is no less than Tenant's net worth as of the effective date of this Lease; (ii) the proposed Transferee, in Landlord's reasonable opinion, is not reputable and of good character; (iii) with regard to a proposed sublease, the portion of the Premises requested to be subleased renders the balance of the Premises unleasable as a separate area; (iv) Tenant is proposing a sublease at a rental or sub-rental rate that is less than the then-fair market rental rate for the portion of the Premises being subleased, or Tenant is proposing to Transfer to an existing tenant of the Building or another property owned by Landlord or Landlord's affiliate(s), or to another prospect with whom Landlord or Landlord's affiliate(s) are then Negotiating in the market of which the Building is a part (and for purposes of this subsection (iv), "Negotiating" shall mean that Landlord and the proposed assignee or sublessee have been actively exchanging proposals, counter offers, etc., it being agreed that the submittal of proposals or offers to the proposed assignee or sublessee by Landlord without interest or active negotiations by the proposed assignee or sublessee shall not constitute Negotiations hereunder); (v) the proposed assignee or sublessee would cause any of Landlord's existing parking facilities to be reasonably inadequate, or in violation of code requirements, or require Landlord to increase the parking area or the number of parking spaces to meet code requirements; or (vi) the nature of such Transferee's proposed business operation would or might reasonably violate the terms of this Lease or of any other lease for the Building (including any exclusivity provisions), or would, in Landlord's reasonable judgment, otherwise be incompatible with other tenancies in the Building.

(c) Notwithstanding the foregoing, Tenant shall have the right without the prior consent of Landlord, but after providing prior written notice to Landlord, to make a Transfer to any Affiliate (as defined below), or an entity into which Tenant merges or that acquires substantially all of the assets or stock of Tenant ("Surviving Entity") (the Surviving Entity or Affiliate are also referred to as a "Permitted Transferee"); provided: (i) Tenant delivers to Landlord the Transfer Information (as defined below); (ii) the Permitted Transferee shall have a tangible net worth at least equal to the greater of the net worth of Tenant on the date of this Lease or on the date of such Transfer; (iii) the originally named Tenant shall not be released or discharged from any liability under this Lease by reason of such Transfer; (iv) the use of the Premises shall not change; and (v) if the Transfer is to an Affiliate, such Transferee shall remain an Affiliate throughout the Term and if such Transferee shall cease being an Affiliate, Tenant shall notify Landlord in writing of such change. An "Affiliate" means a corporation, limited liability company, partnership, or other registered entity, 50% or more of whose equity interest is owned by the same persons or entities owning 50% or more of Tenant's equity interests, a subsidiary, or a parent corporation.

(d) If at any time during the Term, Tenant desires to complete a Transfer other than pursuant to Section 10(c), Tenant shall give written notice to Landlord of such desire together with the Transfer Information. If: (i) Tenant desires to assign this Lease or to sublease the entire Premises, Landlord shall have the right to accelerate the Expiration Date so that the Expiration Date shall be the date on which the proposed assignment or sublease would be effective; or (ii) Tenant desires to sublease more than 50% of the Premises other than to an Affiliate, Landlord shall have the right to accelerate the Expiration Date with respect to the portion of the Premises that Tenant proposes to sublease (and in each case, a pro rata portion of Tenant's parking rights shall also expire on such accelerated Expiration Date). If Landlord elects to accelerate the Expiration Date pursuant to this paragraph, Tenant shall have the right to rescind its request for Landlord's consent to the proposed assignment or sublease by giving written notice of such rescission to Landlord within 10 days after Tenant's receipt of Landlord's acceleration election notice. If Tenant does not so rescind its request: (A) Tenant shall deliver the Premises or the applicable portion thereof to Landlord in the same condition as Tenant is, by the terms of this Lease, required to deliver the Premises to Landlord upon the Expiration Date; and (B) Fixed Rent and Tenant's Share shall be reduced on a per rentable square foot basis for the area of the Premises that Tenant no longer leases. If Landlord elects to accelerate the Expiration Date for less than the entire Premises, the cost of erecting any demising walls, entrances, and entrance corridors, and any other improvements required in connection therewith shall be performed by Landlord, with the cost thereof being divided evenly between Landlord and Tenant.

(e) The "Transfer Information" means the following information: (i) a copy of the fully executed assignment and assumption agreement, or sublease agreement, as applicable (with respect to a Permitted Transfer, such agreement to be delivered to Landlord within 10 business days after the transaction closes and with respect to all other Transfers, such agreement shall be provided in draft form and shall not be executed until Landlord's consent has been given); (ii) a copy of the then-current financials of the Transferee (either audited or certified by the chief financial officer or secretary of the Transferee); (iii) a copy of the formation certificate and good standing certificate of the Transferee; and (iv) such other reasonably requested information by Landlord needed to confirm or determine Tenant's compliance with the terms and conditions of this Section. Landlord shall keep confidential and maintain the secrecy of all Transfer Information and shall not use such Transfer Information for any purpose other than those contemplated in this Section 10.

(f) Any sums or other economic consideration received by Tenant as a result of any Transfer (except rental or other payments received that are attributable to the amortization of the cost of leasehold improvements made to the transferred portion of the Premises by Tenant for the Transferee, and other reasonable expenses incident to the Transfer, including standard leasing commissions and legal fees) whether denominated rentals under the sublease or otherwise, that exceed, in the aggregate, the total sums which Tenant is obligated to pay Landlord under this Lease (prorated to reflect obligations allocable to that portion of the Premises subject to such Transfer) shall be divided evenly between Landlord and Tenant, with Landlord's portion being payable to Landlord as Additional Rent without affecting or reducing any other obligation of Tenant hereunder.

(g) Regardless of Landlord's consent to a proposed Transfer, no Transfer shall release Tenant from Tenant's obligations or alter Tenant's primary liability to fully and timely pay all Rent due from time to time under this Lease and to fully and timely perform all of Tenant's other obligations under this Lease, and the originally named Tenant and all assignees shall be jointly and severally liable for all Tenant obligations under this Lease. The acceptance of rental by Landlord from any other person shall not be deemed to be a waiver by Landlord of any provision hereof. If a Transferee defaults in the performance of any of the terms of this Lease, Landlord may proceed directly against the originally named Tenant without the necessity of exhausting remedies against such Transferee. If there has been a Transfer and an Event of Default occurs, Landlord may collect Rent from the Transferee and apply the net amount collected to the Rent herein reserved; but no such collection shall be deemed a waiver of the provisions of this Section, an acceptance of such Transferee as tenant hereunder or a release of Tenant from further performance of the covenants herein contained.

11. REPAIRS AND MAINTENANCE.

(a) Except with respect to Landlord Repairs (as defined below), Tenant, at Tenant's expense, shall keep and maintain the Premises in good order and condition including promptly making all repairs necessary to keep and maintain such in good order and condition. When used in this Lease, "repairs" shall include repairs and any reasonably necessary replacements. Tenant shall have the option of replacing lights, ballasts, tubes, ceiling tiles,

outlets and similar equipment itself or advising Landlord of Tenant's desire to have Landlord make such repairs, in which case Tenant shall pay to Landlord for such repairs at Landlord's then-standard rate. To the extent that Tenant requests that Landlord make any other repairs that are Tenant's obligati on to make under this Lease, Landlord may elect to make such repairs on Tenant's behalf, at Tenant's expense, and Tenant shall pay to Landlord such expense along with the Administrative Fee. If Tenant has been in default under this Lease, Landlord may elec t to require that Tenant prepay the amount of such repair. All repairs made by Landlord or Tenant shall utilize materials and equipment that are at least equal in quality, number, and usefulness to those originally used in constructing the Building and the Premises. If either Tenant or Landlord (at Tenant's request) installs and/or operates HVAC equipment (" Tenant's Supplemental HVAC") and/or any Alteration, Tenant, at Tenant's expense, shall maintain Tenant's Supplemental HVAC and/or Alteration in a clean and safe manner and in proper operating condition throughout the Term and, with respect to Tenant's Supplemental HVAC, under a service contract with a firm and upon such terms as may be reasonably satisfactory to Landlord, including inspection and maintenance on at least a semiannual basis, and provide Landlord with a copy thereof. Within 5 days after Landlord's request, Tenant shall provide Landlord with evidence that such contract is in place. All repairs to the Building and/or the Project made necessary by reason of the installation, maintenance, and operation of Tenant's Supplemental HVAC and Alterations shall be Tenant's expense. In the event of an emergency, such as a burst waterline or act of God, Landlord shall have the right to make repairs for whic h Tenant is responsible hereunder (at Tenant's cost) without giving Tenant prior notice, but in such case Landlord shall provide notice to Tenant as soon as practicable thereafter, and Landlord shall take commercially reasonable steps to minimize the costs incurred.

(b) Landlord, at Landlord's expense (except to the extent such expenses are includable in Project Expenses), shall make all necessary repairs to: (i) the footings and foundations and the structural elements of the Building; (ii) the roof of the Building; (iii) the HVAC, plumbing, elevators (if any), electric, fire protection and fire alert systems within the Building core from the core to the point of connection for service to the Premises, but specifically excluding Tenant's Supplemental HVAC and Alterations; (iv) the Building exterior; and (v) the Common Areas (collectively, " Landlord Repairs"). Any provision of this Lease to the contrary notwithstanding, any repairs to the Project or any portion thereof made necessary by the negligent or willful act or omission of Tenant or any employee, agent, subtenant, contractor or invitee of Tenant shall be made at Tenant's expense, subject to the waivers set forth in Section 12(c).

(c) The parties agree it is in their mutual best interest that the Building and Premises be operated and maintained in a manner that is environmentally responsible, fiscally prudent, and provides a safe and productive work environment. Accordingly, Tenant shall use commercially reasonable efforts to conduct its operations in the Building and within the Premises to: (1) minimize to the extent reasonably feasible: (i) direct and indirect energy consumption and greenhouse gas emissions; (ii) water consumption; (iii) the amount of material entering the waste stream; and (iv) negative impacts upon the indoor air quality of the Building; and (2) permit the Building to maintain its LEED rating and an Energy Star label, to the extent applicable. Landlord shall use commercially reasonable efforts to operate and maintain the Common Areas of the Building to: (1) minimize to the extent reasonably feasible: (i) direct and indirect energy consumption and greenhouse gas emissions; (ii) water consumption; (iii) the amount of material entering the waste stream; and (iv) negative impacts upon the indoor air quality of the Building; and (2) permit the Building to maintain its LEED rating and an Energy Star label, to the extent applicable, the costs of which shall be included in Project Expenses (except to the extent otherwise not permitted).

12. INSURANCE; SUBROGATION RIGHTS.

(a) Tenant, at Tenant's expense, shall obtain and keep in force at all times as of the Commencement Date (or Tenant's earlier accessing of the Premises) commercial general liability insurance including contractual liability and personal injury liability and all similar coverage, with combined single limits of $2,000,000 on account of bodily injury to or death of one or more persons as the result of any one accident or disaster and on account of damage to property, or in such other amounts as Landlord may from time to time reasonably require in light of the activities conducted on the Premises. Tenant shall, at its sole cost and expense, maintain in full force and effect a policy of "special form" property insurance on Tenant's Property for full replacement value and with coinsurance waived. "Tenant's Property " shall mean Tenant's trade fixtures, equipment, personal property, and Specialty Alterations (as defined in Section 18(b)). Tenant shall neither have, nor make, any claim against Landlord for any loss or damage to Tenant's Property, regardless of the cause of the loss or damage.

Tenant shall require its movers to procure and deliver to Landlord a certificate of insurance naming Landlord as an additional insured. No liability insurance required hereunder shall be subject to cancellation or modification without at least 30 days' prior notice to all insureds, and shall name Tenant as insured, and Landlord, Landlord's property manager, and Brandywine Realty Trust as additional insureds, and, if requested in writing by Landlord, shall also name as an additional insured any mortgagee or holder of any mortgage that may be or become a lien upon any part of the Premises. Prior to the Commencement Date, Tenant shall provide Landlord with certificates that evidence that all insurance coverages required under this Lease are in place for the policy periods. Tenant shall also furnish to Landlord and/or Landlord's designated agent throughout the Term replacement certificates at least 30 days prior to the expiration dates of the then-current policy or policies or, upon request by Landlord and/or its agent from time to time, sufficient information to evidence that the insurance required under this Section is in full force and effect. All insurance required under this Lease shall be issued by an insurance company that has been in business for at least 5 years, is authorized to do business in the State, and has a financial rating of at least an A-X as rated in the most recent edition of Best's Insurance Reports. The limits of any such required insurance shall not in any way limit Tenant's liability under this Lease or otherwise. If Tenant fails to maintain such insurance, Landlord may, but shall not be required to, procure and maintain the same, at Tenant's expense, which expense shall be reimbursed by Tenant as Additional Rent within 10 days after written demand. Any deductible under such insurance policy in excess of $25,000 shall be approved by Landlord in writing prior to the issuance of such policy. Tenant shall not self-insure without Landlord's prior written consent.

(b) Landlord shall obtain and maintain the following insurance during the Term: (i) replacement cost insurance including "special form" property insurance on the Building, including without limitation leasehold improvements (exclusive of Tenant's Property); (ii) commercial general liability insurance (including bodily injury and property damage) covering Landlord's operations at the Project in amounts reasonably required by Landlord or any Mortgagee (as defined in Section 16); and (iii) such other insurance as reasonably required by Landlord or any Mortgagee.

(c) Landlord and Tenant shall each procure an appropriate clause in or endorsement to any property insurance covering the Project or any portion thereof and personal property, fixtures, and equipment located therein, wherein the insurer waives subrogation and consents to a waiver of right of recovery pursuant to the terms of this paragraph. Both Landlord and Tenant agree to immediately give each insurance company which has issued to it policies of property insurance written notice of the terms of such mutual waivers and to cause such insurance policies to be properly endorsed, if necessary, to prevent the invalidation thereof by reason of such waivers, and shall furnish to the other party written evidence of such foregoing endorsements or that such endorsement is not required. Landlord and Tenant hereby waive, and agree not to make, any claim against, or seek to recover from, the other for any loss or damage to its property or the property of others resulting from conditions to the extent of proceeds received after application of any commercially reasonable deductible (or would have been received if the party had obtained and maintained the insurance it was required to carry under this Lease or if Tenant did not elect to self-insure) by the property insurance that was required to be carried by that party under the terms of this Lease.

13. INDEMNIFICATION.

(a) Subject to Section 12(c), Tenant shall defend, indemnify, and hold harmless Landlord, Landlord's property manager, and Brandywine Realty Trust and each of Landlord's directors, officers, members, partners, trustees, employees, and agents (collectively, the "Landlord Indemnitees") from and against any and all third-party claims, actions, damages, liabilities, and expenses (including all reasonable costs and expenses (including reasonable attorneys' fees)) to the extent arising from: (i) Tenant's breach of this Lease; (ii) any negligence or willful act of Tenant, any Tenant Indemnitees (as defined below), or any of Tenant's invitees, subtenants, or contractors; and (iii) any acts or omissions occurring at, or the condition, use or operation of, the Premises, except to the extent arising from Landlord's negligence or willful misconduct. If Tenant fails to promptly defend a Landlord Indemnitee following written demand by the Landlord Indemnitee, the Landlord Indemnitee shall defend the same at Tenant's expense, by retaining or employing counsel reasonably satisfactory to such Landlord Indemnitee.

(b) Subject to Section 12(c), Landlord shall defend, indemnify, and hold harmless Tenant and each of Tenant's directors, officers, members, partners, trustees, employees, and agents (collectively, the "Tenant Indemnitees") from and against any and all third-party claims, actions, damages, liabilities, and expenses (including all reasonable costs and expenses (including reasonable attorneys' fees)) to the extent arising from: (i) Landlord's breach of this Lease; and (ii) any negligence or willful misconduct of Landlord or any Landlord Indemnitees. If Landlord fails to promptly defend a Tenant Indemnitee following written demand by the Tenant Indemnitee, the Tenant Indemnitee shall defen d the same at Landlord's expense, by retaining or employing counsel reasonably satisfactory to such Tenant Indemnitee.

(c) Landlord's and Tenant's obligations under this Section shall not be limited by the amount or types of insurance maintained or required to be maintained under this Lease. The provisions of this Section shall survive the Expiration Date.

14. CASUALTY DAMAGE. If there occurs any casualty to the Project (other than to the Premises) and: (i) insurance proceeds are unavailable to Landlord or are insufficient to restore the Project to substantially its pre-casualty condition; or (ii) more than 30% of the total area of the Building is damaged, Landlord shall have the right to terminate this Lease and all the unaccrued obligations of the parties hereto, by sending written notice of such termination to Tenant within 60 days after such casualty. Such notice shall specify a termination date not fewer than 30 nor more than 90 days after such notice is given to Tenant. If there occurs any casualty to the Premises and: (i) in Landlord's reasonable judgment, the repair and restoration work would require more than 180 consecutive days to complete after the casualty (assuming normal work crews not engaged in overtime); or (ii) the casualty occurs during the last 12 months of the Term, Landlord and Tenant shall each have the right to terminate this Lease and all the unaccrued obligations of the parties hereto, by sending written notice of such termination to the other party within 60 days after the date of such casualty. Such notice shall specify a termination date not fewer than 30 nor more than 90 days after such notice is given to the other party, but in no event shall the termination date be after the last day of the Term. Notwithstanding the foregoing, if the casualty was caused by the act or omission of Tenant or any of Tenant's agents, employees, invitees, assignees, subtenants, licensees or contractors, Tenant shall have no right to terminate this Lease due to the casualty. If there occurs any casualty to the Premises and neither party terminates this Lease, then notwithstanding anything to the contrary in this Lease, Tenant's obligation to pay Fixed Rent and Additional Rent shall be equitably adjusted or abated during the period (if any) during which Tenant is not reasonably able to use the Premises or an applicable portion thereof as a result of such casualty. Tenant shall have no right to terminate this Lease as a result of any damage or destruction of the Premises, except as expressly provided in this Section. The provisions of this Lease, including this Section, constitute an express agreement between Landlord and Tenant with respect to any and all damage to, or destruction of, all or any part of the Premises, and any Law with respect to any rights or obligations concerning damage or destruction in the absence of an express agreement between the parties, and any other statute or regulation, now or hereafter in effect, shall have no application to this Lease or any damage or destruction to all or any part of the Premises.

15. CONDEMNATION. If a taking renders 30% or more of the Premises reasonably unsuitable for the Permitted Use, this Lease shall, at either party's option, terminate as of the date title to condemned real estate vests in the condemnor, the Rent herein reserved shall be apportioned and paid in full by Tenant to Landlord to such date, all Rent prepaid for period beyond that date shall forthwith be repaid by Landlord to Tenant, and neither party shall thereafter have any liability for any unaccrued obligations hereunder. If this Lease is not terminated after a condemnation, then notwithstanding anything to the contrary in this Lease, the Fixed Rent and the Additional Rent shall be equitably reduced in proportion to the area of the Premises that has been taken for the balance of the Term. Tenant shall have the right to make a claim against the condemnor for moving expenses and business dislocation damages to the extent that such claim does not reduce the sums otherwise payable by the condemnor to Landlord.

16. SUBORDINATION; ESTOPPEL CERTIFICATE.

(a) This Lease shall be subordinate to the lien of any deeds of trust or mortgages now or hereafter placed upon the Project or any portion thereof (a "Mortgage") without the necessity of any further instrument or act on the part of Tenant to effectuate such subordination. Tenant shall execute and deliver to Landlord within 10 days after written demand such further instrument evidencing such subordination and agreement to attorn as shall be reasonably required by any Mortgagee. If Landlord shall be or is alleged to be in default of any of its obligations owing to Tenant under this Lease, Tenant shall give to the holder ("Mortgagee") of any Mortgage

of whose name and address Tenant has been given written notice, notice by overnight mail of any such default that Tenant shall have served upon Landlord. Tenant shall not be entitled to exercise any right or remedy because of any default by Landlord without having given such notice to the Mortgagee as aforesaid and, if Landlord fails to cure such default, the Mortgagee shall have the right to cure such default within 45 days after Mortgagee's receipt of such default notice from Tenant. Notwithstanding the foregoing, any Mortgagee may at any time subordinate its mortgage to this Lease, without Tenant's consent, by notice in writing to Tenant, and thereupon this Lease shall be deemed prior to such Mortgage without regard to their respective dates of execution and delivery, and in that event the Mortgagee shall have the same rights with respect to this Lease as though it had been executed prior to the execution and delivery of the Mortgage.

(b) Each party shall at any time and from time to time, within 10 days after the other party's written request, execute and deliver to the other party a written instrument in recordable form certifying all reasonably requested information pertaining to this Lease.

17. DEFAULT AND REMEDIES.

(a) An "Event of Default" shall be deemed to exist and Tenant shall be in default hereunder if: (i) Tenant fails to pay any Rent when due and such failure continues for more than 5 business days after Landlord has given Tenant written notice of such failure; provided, however, in no event shall Landlord have any obligation to give Tenant more than 2 such notices in any 12-month period, after which there shall be an Event of Default if Tenant fails to pay any Rent when due, regardless of Tenant's receipt of notice of such non-payment; (ii) Tenant fails to bond over a mechanic's or materialmen's lien within 10 days after Landlord's demand; (iii) there is any assignment or subletting (regardless of whether the same might be void under this Lease) in violation of the terms of this Lease; (iv) the occurrence of any default beyond any applicable notice and/or cure period under any guaranty executed in connection with this Lease; (v) Tenant fails to deliver any Landlord-requested estoppel certificate or subordination agreement within 7 business days after receipt of notice that such document was not received within the time period required under this Lease; (vi) Tenant ceases to use the Premises for the Permitted Use or removes substantially all of its furniture, equipment and personal property from the Premises (other than in the case of a permitted subletting or assignment) or permits the same to be unoccupied; or (vii) Tenant fails to observe or perform any of Tenant's other agreements or obligations under this Lease and such failure continues for more than 30 days after Landlord gives Tenant written notice of such failure, or the expiration of such additional time period as is reasonably necessary to cure such failure (not to exceed 60 days), provided Tenant immediately commences and thereafter proceeds with all due diligence and in good faith to cure such failure.

(b) Upon the occurrence of an Event of Default, Landlord shall have the right, at Landlord's option, to elect to do any one or more of the following:

(i) Landlord shall have the right to terminate this Lease, in which event Tenant shall immediately surrender the Premises to Landlord and Tenant shall pay Landlord upon demand for all losses and damages that Landlord suffers or incurs by reason of such termination, including damages in an amount equal to the total of: (A) the costs of repossessing the Premises and all other expenses incurred by Landlord in connection with Tenant's default, plus the Administrative Fee; (B) the unpaid Rent earned as of the date of termination; (C) all Rent for the period that would otherwise have constituted the remainder of the Term, discounted to present value at a rate of 2% per annum; and (D) all other sums of money and damages owing by Tenant to Landlord;

(ii) Landlord shall have the right to enter upon and take possession of the Premises without terminating this Lease (but terminating Tenant's right of possession, if Landlord so elects) and without being liable to prosecution or any claim for damages therefor and to relet the Premises on such terms as Landlord deems advisable, in which event Tenant shall pay to Landlord on demand Landlord's out-of-pocket costs of repossession, renovating, repairing, and altering the Premises for a new tenant or tenants, plus the Administrative Fee and any deficiency between the Rent payable hereunder and the rent paid under such reletting; provided, however, Tenant shall not be entitled to any excess payments received by Landlord from such reletting. Landlord's failure to relet the Premises shall not release or affect Tenant's liability for Rent or for damages;

(iii) Landlord shall have the right to enter the Premises without terminating this Lease and without being liable for prosecution or any claim for damages therefor and maintain the Premises and repair or replace any damage thereto or do anything for which Tenant is responsible hereunder. Tenant shall reimburse Landlord immediately upon demand for any out-of-pocket costs which Landlord incurs in thus effecting Tenant's compliance under this Lease, and Landlord shall not be liable to Tenant for any damages with respect thereto; and/or

(iv) Landlord shall have the right to cure any default on behalf of Tenant and Tenant shall reimburse Landlord upon demand for any sums paid or costs incurred by Landlord in curing such default, including attorneys' fees and other legal expenses, plus the Administrative Fee. The "Administrative Fee" means 15% of the costs incurred by Landlord in curing Tenant's default or performing Tenant's obligations hereunder.

(c) Upon the occurrence of an Event of Default, Tenant shall be liable to Landlord for: (i) all Fixed Rent and Additional Rent accrued and unpaid; (ii) all costs and expenses incurred by Landlord in recovering possession of the Premises, including legal fees, and removal and storage of Tenant's property; (iii) the costs and expenses of restoring the Premises to the condition in which the same were to have been surrendered by Tenant as of the Expiration Date; (iv) the costs of reletting commissions; (v) all legal fees and court costs incurred by Landlord in connection with the Event of Default; and (vi) the unamortized portion (as reasonably determined by Landlord) of brokerage commissions and consulting fees incurred by Landlord, and tenant concessions including free rent given by Landlord, in connection with this Lease. Upon the occurrence of an Event of Default, the Abatement Period shall immediately become void, and the monthly Fixed Rent due for the Abatement Period shall equal the amount of Fixed Rent due immediately following the Fixed Rent Start Date.

(d) Any amount payable by Tenant under this Lease that is not paid when due shall bear interest at the rate of 1% per month until paid by Tenant to Landlord.

(e) Neither any delay or forbearance by Landlord in exercising any right or remedy hereunder nor Landlord's undertaking or performing any act that Landlord is not expressly required to undertake under this Lease shall be construed to be a waiver of Landlord's rights or to represent any agreement by Landlord to thereafter undertake or perform such act. Landlord's waiver of any breach by Tenant of any covenant or condition herein contained (which waiver shall be effective only if so expressed in writing by Landlord) or Landlord's failure to exercise any right or remedy in respect of any such breach shall not constitute a waiver or relinquishment for the future of Landlord's right to have any such covenant or condition duly performed or observed by Tenant, or of Landlord's rights arising because of any subsequent breach of any such covenant or condition nor bar any right or remedy of Landlord in respect of such breach or any subsequent breach.

(f) The rights granted to Landlord in this Section shall be cumulative of every other right or remedy provided in this Lease or which Landlord may otherwise have at law or in equity or by statute, and the exercise of one or more rights or remedies shall not prejudice or impair the concurrent or subsequent exercise of other rights or remedies or constitute a forfeiture or waiver of Rent or damages accruing to Landlord by reason of any Event of Default under this Lease.

(g) No payment by Tenant or receipt by Landlord of a lesser amount than any payment of Fixed Rent or Additional Rent herein stipulated shall be deemed to be other than on account of the earliest stipulated Fixed Rent or Additional Rent due and payable hereunder, nor shall any endorsement or statement or any check or any letter accompanying any check or payment as Rent be deemed an accord and satisfaction. Landlord may accept such check or payment without prejudice to Landlord's right to recover the balance of such Rent or pursue any other right or remedy provided for in this Lease, at law or in equity.

(h) Tenant further waives the right to any notices to quit as may be specified in the Landlord and Tenant Act of Pennsylvania, Act of April 6, 1951, as amended, or any similar or successor provision of law, and agrees that 5 days' notice shall be sufficient in any case where a longer period may be statutorily specified.

(i) In addition to, and not in lieu of any of the foregoing rights granted to Landlord:

(1) WHEN THIS LEASE OR TENANT'S RIGHT OF POSSESSION SHALL BE TERMINATED BY COVENANT OR CONDITION BROKEN, OR FOR ANY OTHER REASON, EITHER DURING THE TERM OF THIS LEASE OR ANY RENEWAL OR EXTENSION THEREOF, AND ALSO WHEN AND AS SOON AS THE TERM HEREBY CREATED OR ANY EXTENSION THEREOF SHALL HAVE EXPIRED, IT SHALL BE LAWFUL FOR ANY ATTORNEY AS ATTORNEY FOR TENANT TO FILE AN AGREEMENT FOR ENTERING IN ANY COMPETENT COURT AN ACTION TO CONFESS JUDGMENT IN EJECTMENT AGAINST TENANT AND ALL PERSONS CLAIMING UNDER TENANT; PROVIDED HOWER, THAT BEFORE HAVING THE RIGHT TO TAKE THE FOREGOING ACTIONS ON TENANT'S BEHALF, LANDLORD SHALL FIRST PROVIDE TENANT WITH AN ADDITIONAL WRITTEN NOTICE AND TEN (10) DAYS' OPPORTUNITY TO CURE ANY SUCH DEFAULT WHICH SHALL BE DETAILED WITH REASONABLE SPECIFICITY IN SUCH NOTICE AND WHICH SUCH NOTICE SHALL BE ACCOMPANIED BY COPIES OF ALL DOCUMENTS TO BE FILED BY LANDLORD ON BEHALF OF TENANT HEREUNDER, WHEREUPON, FOLLOWING THE PROVISION OF SUCH NOTICE AND THE EXPIRATION OF THE CURE PERIOD WITHOUT ANY CURE BEING EFFECTED BY TENANT, IF LANDLORD SO DESIRES, A WRIT OF EXECUTION OR OF POSSESSION MAY ISSUE FORTHWITH, WITHOUT ANY PRIOR WRIT OF PROCEEDINGS, WHATSOEVER, AND PROVIDED THAT IF FOR ANY REASON AFTER SUCH ACTION SHALL HAVE BEEN COMMENCED THE SAME SHALL BE DETERMINED AND THE POSSESSION OF THE PREMISES HEREBY DEMISED REMAIN IN OR BE RESTORED TO TENANT, LANDLORD SHALL HAVE THE RIGHT UPON ANY SUBSEQUENT DEFAULT OR DEFAULTS, OR UPON THE TERMINATION OF THIS LEASE AS HEREINBEFORE SET FORTH, TO BRING ONE OR MORE ACTION OR ACTIONS AS HEREINBEFORE SET FORTH TO RECOVER POSSESSION OF THE SAID PREMISES.

(2) In any action to confess judgment in ejectment, Landlord shall first cause to be filed in such action an affidavit made by it or someone acting for it setting forth the facts necessary to authorize the entry of judgment, of which facts such affidavit shall be conclusive evidence, and if a true copy of this Lease (and of the truth of the copy such affidavit shall be sufficient evidence) be filed in such action, it shall not be necessary to file the original as a warrant of attorney, any rule of Court, custom or practice to the contrary notwithstanding.

_____ (TENANT'S INITIAL). TENANT WAIVER. TENANT SPECIFICALLY ACKNOWLEDGES THAT TENANT HAS VOLUNTARILY, KNOWINGLY, AND INTELLIGENTLY WAIVED CERTAIN DUE PROCESS RIGHTS TO A PREJUDGMENT HEARING BY AGREEING TO THE TERMS OF THE FOREGOING PARAGRAPHS REGARDING CONFESSION OF JUDGMENT. TENANT FURTHER SPECIFICALLY AGREES THAT IN THE EVENT OF DEFAULT, LANDLORD MAY PURSUE MULTIPLE REMEDIES INCLUDING OBTAINING POSSESSION PURSUANT TO A JUDGMENT BY CONFESSION AND ALSO OBTAINING A MONEY JUDGMENT FOR PAST DUE AND ACCELERATED AMOUNTS AND EXECUTING UPON SUCH JUDGMENT. IN SUCH EVENT AND SUBJECT TO THE TERMS SET FORTH HEREIN, LANDLORD SHALL PROVIDE FULL CREDIT TO TENANT FOR ANY MONTHLY CONSIDERATION WHICH LANDLORD RECEIVES FOR THE LEASED PREMISES IN MITIGATION OF ANY OBLIGATION OF TENANT TO LANDLORD FOR THAT MONEY. FURTHERMORE, TENANT SPECIFICALLY WAIVES ANY CLAIM AGAINST LANDLORD AND LANDLORD'S COUNSEL FOR VIOLATION OF TENANT'S CONSTITUTIONAL RIGHTS IN THE EVENT THAT JUDGMENT IS CONFESSED PURSUANT TO THIS LEASE.

18. SURRENDER; HOLDOVER.

(a) No later than upon the Expiration Date or earlier termination of Tenant's right to possession of the Premises (such earlier date, the "Surrender Date"), Tenant shall vacate and surrender the Premises to Landlord in good order and condition, vacant, broom clean, and in conformity with the applicable provisions of this Lease, including without limitation Sections 9 and 11. Tenant shall have no right to hold over beyond the Surrender Date, and if Tenant does not vacate as required such failure shall be deemed an Event of Default and Tenant's occupancy shall not be construed to effect or constitute anything other than a tenancy at sufferance. During any period of occupancy beyond the Surrender Date, the amount of Rent owed by Tenant to Landlord shall be 150% for the first month and 200% thereafter of the Rent that would otherwise be due under this Lease, without prorating

for any partial month of holdover, and except that any provisions in this Lease that limit the amount or defer the payment of Additional Rent shall be null and void. The acceptance of Rent by Landlord or the failure or delay of Landlord in notifying or evicting Tenant following the Surrender Date shall not create any tenancy rights in Tenant and any such payments by Tenant may be applied by Landlord against its costs and expenses, including reasonable attorneys' fees, incurred by Landlord as a result of such holdover. The provisions of this Section shall not constitute a waiver by Landlord of any right of reentry as set forth in this Lease; nor shall receipt of any Rent or any other act in apparent affirmance of the tenancy operate as a waiver of Landlord's right to terminate this Lease for a breach of any of the terms, covenants, or obligations herein on Tenant's part to be performed. No option to extend this Lease shall have been deemed to have occurred by Tenant's holdover, and any and all options to extend this Lease or expand the Premises shall be deemed terminated and of no further effect as of the first date that Tenant holds over. In addition, if Tenant fails to vacate and surrender the Premises as herein required within the thirty (30) day period following the expiration or termination of this Lease, Tenant shall thereafter be obligated to indemnify, defend and hold harmless Landlord from all costs, losses, expenses or liabilities incurred as a result of such failure, including without limitation, claims made by any succeeding tenant and real estate brokers' claims and reasonable attorneys' fees. Tenant's obligation to pay Rent and to perform all other Lease obligations for the period up to and including the Surrender Date, and the provisions of this Section, shall survive the Expiration Date. In no way shall the remedies to Landlord set forth above be construed to constitute liquidated damages for Landlord's losses resulting from Tenant's holdover.

(b) Prior to the Expiration Date or sooner termination of Tenant's right to possession of the Premises, Tenant, at Tenant's expense, shall remove from the Premises Tenant's Property and all telephone, security, and communication equipment system wiring and cabling, and restore in a good and workmanlike manner any damage to the Premises and/or the Building caused by such removal or replace the damaged component of the Premises and/or the Building if such component cannot be restored as aforesaid as reasonably determined by Landlord. The foregoing notwithstanding, Tenant shall not be required to remove a Specialty Alteration if at the time Tenant requests Landlord's consent to such Specialty Alteration, Tenant provides Landlord with written notification that Tenant desires to not be required to remove such Specialty Alteration and Landlord consents in writing to Tenant's non-removal request. A "Specialty Alteration" means an Alteration that: (i) Landlord required to be removed in connection with Landlord's consent to making such Alteration; or (ii) are not normal and customary leasehold improvements typically found in comparable office space at comparable class A office buildings in the market in which the Project is located, such as kitchens (other than a pantry installed for the use of Tenant's employees only), executive restrooms, computer room installations, supplemental HVAC equipment and components, safes, vaults, libraries or file rooms requiring reinforcement of floors, internal staircases, slab penetrations, non-Building standard life safety systems, security systems, specialty door locksets (such as cipher locks) or lighting, and any demising improvements done by or on behalf of Tenant after the Commencement Date. If Tenant fails to remove any of Tenant's Property, wiring, or cabling as required herein, the same shall be deemed abandoned and Landlord, at Tenant's expense, may remove and dispose of same and repair and restore any damage caused thereby, or, at Landlord's election, such Tenant's Property, wiring, and cabling shall become Landlord's property. Tenant shall not remove any Alteration (other than Specialty Alterations) from the Premises without the prior written consent of Landlord.

19. RULES AND REGULATIONS. Tenant covenants that Tenant and its employees, agents, invitees, subtenants, and licensees shall comply with the rules and regulations set forth on Exhibit E attached hereto. Landlord shall have the right to rescind any of the rules and regulations and to make such other and further written rules and regulations as in the reasonable judgment of Landlord shall from time to time be needed for the safety, protection, care and cleanliness of the Project, the operation thereof, the preservation of good order therein and the protection and comfort of its tenants, their agents, employees and invitees, which when delivered to Tenant shall be binding upon Tenant in a like manner as if originally prescribed as of the date such revised rules and regulations are provided to Tenant in writing. In the event of an inconsistency between the rules and regulations and this Lease, the provisions of this Lease shall control. Landlord shall have no duty or obligation to enforce any rule or regulation, and Landlord's failure or refusal to enforce any rule or regulation against any other tenant shall be without liability of Landlord to Tenant. However, if Landlord does enforce rules or regulations, Landlord shall endeavor to enforce same equally. Landlord shall not have any liability to Tenant for any failure of any other tenants to comply with any of the rules and regulations.

20. GOVERNMENTAL REGULATIONS.

(a) Tenant shall not use, generate, manufacture, refine, transport, treat, store, handle, dispose, bring, or otherwise cause to be brought or permit any of its agents, employees, subtenants, contractors, or invitees to bring, in, on, or about any part of the Project, any hazardous waste, solid waste, hazardous substance, toxic substance, petroleum product or derivative, asbestos, polychlorinated biphenyl, hazardous material, pollutant, contaminant, or similar material or substance as defined by the Comprehensive Environmental Response Compensation and Liability Act , 42 U.S.C. Sections 9601 et seq., as the same may from time to time be amended, and the regulations promulgated pursuant thereto (CERCLA), or now or hereafter defined or regulated as such by any other Law ("Hazardous Material"). Notwithstanding the foregoing, Tenant shall be permitted to bring onto the Premises office cleaning supplies and products normally found in modern offices provided Tenant only brings a reasonable quantity of such supplies and products onto the Premises and Tenant shall at all times comply with all Laws pertaining to the storage, handling, use, and application of such supplies and products, and all Laws pertaining to the communication to employees and other third parties of any hazards associated with such supplies and products. Tenant shall not install any underground or above ground tanks on the Premises. Tenant shall not cause or permit to exist any release, spillage, emission, or discharge of any Hazardous Material on or about the Premises ("Release"). In the event of a Release, Tenant shall immediately notify Landlord both orally and in writing, report such Release to the relevant government agencies as required by applicable Law, and promptly remove the Hazardous Material and otherwise investigate and remediate the Release in accordance with applicable Law and to the satisfaction of Landlord. Landlord shall have the right, but not the obligation, to enter upon the Premises to investigate and/or remediate the Release in lieu of Tenant, and Tenant shall reimburse Landlord as Additional Rent for the costs of such remediation and investigation. Tenant shall promptly notify Landlord if Tenant acquires knowledge of the presence of any Hazardous Material on or about the Premises, except as Tenant is permitted to bring onto the Premises under this Lease. Landlord shall have the right to inspect and assess the Premises for the purpose of determining whether Tenant is handling any Hazardous Material in violation of this Lease or applicable Law, or to ascertain the presence of any Release. This subsection shall survive the Expiration Date.

(b) Tenant shall, and shall cause its employees, agents, contractors, licensees, subtenants, and assignees to, use the Premises in compliance with all applicable Laws. Tenant shall, at its sole cost and expense, promptly comply with each and all of such Laws, except in the case of required structural changes not triggered by Tenant's particular use or manner of use or change in use of the Premises, or Tenant's alterations, additions, or improvements therein. Without limiting the generality of the foregoing, Tenant shall: (i) obtain, at Tenant's expense, before engaging in Tenant's business or profession within the Premises, all necessary licenses and permits including, but not limited to, state and local business licenses, and permits; and (ii) remain in compliance with and keep in full force and effect at all times all licenses, consents, and permits necessary for the lawful conduct of Tenant's business or profession at the Premises. Tenant shall pay all personal property taxes, income taxes and other taxes, assessments, duties, impositions, and similar charges that are or may be assessed, levied, or imposed upon Tenant. Tenant shall also comply with all applicable Laws that do not relate to the physical condition of the Premises and with which only the occupant can comply, such as laws governing maximum occupancy, workplace smoking, VDT regulations, and illegal business operations, such as gambling. The judgment of any court of competent jurisdiction or the admission of Tenant in any judicial, governmental or regulatory action, regardless of whether Landlord is a party thereto, that Tenant has violated any of such Laws shall be conclusive of that fact as between Landlord and Tenant.

(c) Notwithstanding anything to the contrary in this Section, if the requirement of any public authority obligates either Landlord or Tenant to expend money in order to bring the Premises and/or any area of the Project into compliance with Laws as a result of: (i) Tenant's particular use or alteration of the Premises; (ii) Tenant's change in the use of the Premises; (iii) the manner of conduct of Tenant's business or operation of its installations, equipment, or other property therein; (iv) any cause or condition created by or at the instance of Tenant, other than by Landlord's performance of any work for or on behalf of Tenant; or (v) breach of any of Tenant's obligations hereunder, then Tenant shall bear all costs of bringing the Premises and/or Project into compliance with Laws, whether such costs are related to structural or nonstructural elements of the Premises or Project.

(d) Except to the extent Tenant shall comply as set forth above, during the Term, Landlord shall comply with all applicable Laws regarding the Project (including the Premises), including without limitation compliance with Title III of the Americans with Disabilities Act of 1990, 42 U.S.C. §12181 *et seq*. and its regulations as to the design and construction of the Common Areas.

21. NOTICES. Wherever in this Lease it is required or permitted that notice or demand be given or served by either party to this Lease to or on the other party, such notice or demand shall be duly given or served if in writing and either: (i) personally served; (ii) delivered by prepaid nationally recognized courier service (*e.g.*, Federal Express, UPS, and USPS) with evidence of receipt required for delivery; (iii) forwarded by registered or certified mail, return receipt requested, postage prepaid; or (iv) emailed with evidence of receipt; in all such cases addressed to the parties at the addresses set forth below, except that prior to the Commencement Date, notices to Tenant may be sent instead to the attention of any employee or attorney of Tenant with whom Landlord negotiated this Lease. Each such notice shall be deemed to have been given to or served upon the party to which addressed on the date the same is delivered or delivery is refused. Each party shall have the right to change its address for notices (provided such new address is in the continental United States) by a writing sent to the other party in accordance with this Section, and each party shall, if requested, within 10 days confirm to the other its notice address. Notices from Landlord may be given by either an agent or attorney acting on behalf of Landlord. Notwithstanding the foregoing: (a) any notice from Landlord to Tenant regarding ordinary business operations (*e.g.*, exercise of a right of access to the Premises, notice of maintenance activities or Landlord access, changes in rules and regulations, etc.) may be given by written notice left at the Premises or delivered by regular mail, facsimile, or electronic means (such as email) to any person at the Premises whom Landlord reasonably believes is authorized to receive such notice on behalf of Tenant without copies; and (b) invoices, notices of change in billing or notice address, and statements of estimated or reconciliation of Operating Expenses and/or utilities, may be sent by regular mail or electronic means (such as email) to Tenant's billing contact.

If to Tenant:
Paratek Pharmaceuticals
Attn: Office Manager
1000 First Avenue, Suite 400
King of Prussia, PA 19406
Phone:_____
Email for billing contact:_____

and to Landlord:
Brandywine Operating Partnership, L.P.
Attn: Jeff DeVuono
555 East Lancaster Ave., Suite 100
Radnor, PA 19087
Phone: 610-325-5600
Email: jeff.devuono@bdnreit.com

with a copy to:
Email: Legal.Notices@bdnreit.com

22. BROKERS. Landlord and Tenant each represents and warrants to the other that such representing party has had no dealings, negotiations or consultations with respect to the Premises or this transaction with any broker or finder other than a Landlord affiliate and Broker. Each party shall indemnify, defend, and hold harmless the other from and against any and all liability, cost, and expense (including reasonable attorneys' fees and court costs), arising from any misrepresentation or breach of warranty under this Section. Landlord shall pay Broker a commission in connection with this Lease pursuant to the terms of a separate written agreement between Landlord and Broker. This Section shall survive the Expiration Date.

23. LANDLORD'S LIABILITY. Landlord's obligations hereunder shall be binding upon Landlord only for the period of time that Landlord is in ownership of the Building, and upon termination of that ownership, Tenant, except as to any obligations that are then due and owing, shall look solely to Landlord's successor-in-interest in ownership of the Building for the satisfaction of each and every obligation of Landlord hereunder. Upon request and without charge, Tenant shall attorn to any successor to Landlord's interest in this Lease and, at the option of any Mortgagees, to such Mortgagees. Landlord shall have no personal liability under any of the terms, conditions or covenants of this Lease and Tenant shall look solely to the equity of Landlord in the Building and/or

the proceeds therefrom for the satisfaction of any claim, remedy or cause of action of any kind whatsoever arising from the relationship between the parties or any rights and obligations they may have relating to the Project, this Lease, or anything related to either, including without limitation as a result of the breach of any Section of this Lease by Landlord. In addition, no recourse shall be had for an obligation of Landlord hereunder, or for any claim based thereon or otherwise in respect thereof or the relationship between the parties, against any past, present or future Landlord Indemnitee (other than Landlord), whether by virtue of any statute or rule of law, or by the enforcement of any assessment or penalty or otherwise, all such other liability being expressly waived and released by Tenant with respect to the Landlord Indemnitees (other than Landlord).

24. RELOCATION. Landlord, at its sole expense, on at least 120 days' prior written notice to Tenant, may require Tenant to move from the Premises to another suite of substantially comparable size and decor in the Building or in the Complex. In the event of any such relocation, Landlord shall pay all the expenses: (a) of preparing and decorating the new premises so that they will be substantially similar to the Premises; (b) of moving Tenant's furniture and equipment to the new premises (including Tenant's data and communication wiring and cabling); and (c) that Tenant actually and reasonably incurs out-of-pocket (and which Tenant can document with written records) in connection with Tenant notifying its clients of such relocation, obtaining new letterhead and business cards, and other incidental expenses related directly to Tenant's relocation. Tenant shall execute any reasonable amendment evidencing the terms of the relocation as Landlord may require in its reasonable discretion. Upon the effective date of the relocation: (i) the description of the Premises set forth in this Lease shall, without further act on the part of Landlord or Tenant, be deemed amended so that the new premises shall, for all purposes, be deemed the Premises hereunder, and all of the terms, covenants, conditions, provisions, and agreements of this Lease, including those agreements to pay Rent (at the same rate per rentable square foot), shall continue in full force and effect and shall apply to the new premises; and (ii) Tenant shall move into the new premises. Notwithstanding anything to the contrary, Tenant shall have the right to terminate the Lease by written notice to Landlord not more than ten (10) days after Tenant's receipt of Landlord's relocation notice and, in such event, the Lease shall terminate on the date that is sixty (60) days after Landlord's receipt of Tenant's termination notice unless Landlord revokes its relocation notice within ten (10) days from receipt of Tenant's termination notice.

25. GENERAL PROVISIONS.

(a) Provided Tenant has performed all of the terms and conditions of this Lease to be performed by Tenant, including the payment of Rent, Tenant shall peaceably and quietly hold and enjoy the Premises for the Term, without hindrance from Landlord or anyone claiming by through or under Landlord, under and subject to the terms and conditions of this Lease.

(b) Subject to the terms and provisions of Section 10, the respective rights and obligations provided in this Lease shall bind and inure to the benefit of the parties hereto, their successors and assigns.

(c) This Lease shall be governed in accordance with the Laws of the State, without regard to choice of law principles. Landlord and Tenant hereby consent to the exclusive jurisdiction of the state and federal courts located in the jurisdiction in which the Project is located.

(d) In connection with any litigation or arbitration arising out of this Lease, Landlord or Tenant, whichever is the prevailing party as determined by the trier of fact in such litigation, shall be entitled to recover from the other party all reasonable costs and expenses incurred by the prevailing party in connection with such litigation, including reasonable attorneys' fees. If Landlord is compelled to engage the services of outside attorneys (but not in-house counsel) to enforce the provisions of this Lease, to the extent that Landlord incurs any cost or expense in connection with such enforcement, the sum or sums so paid or billed to Landlord, together with all interest, costs and disbursements, shall be due from Tenant immediately upon receipt of an invoice therefor following the occurrence of such expenses. If, in the context of a bankruptcy case, Landlord is compelled at any time to incur any expense, including attorneys' fees, in enforcing or attempting to enforce the terms of this Lease or to enforce or attempt to enforce any actions required under the Bankruptcy Code to be taken by the trustee or by Tenant, as debtor-in-possession, then the sum so paid by Landlord shall be awarded to Landlord by the Bankruptcy Court and shall be immediately due and payable by the trustee or by Tenant's bankruptcy estate to Landlord in accordance with the terms of the order of the Bankruptcy Court.

(e) This Lease, which by this reference incorporates all exhibits, riders, schedules, and other attachments hereto, supersedes all prior discussions, proposals, negotiations and discussions between the parties and this Lease contains all of the agreements, conditions, understandings, representations and warranties made between the parties hereto with respect to the subject matter hereof, and may not be modified orally or in any manner other than by an agreement in writing signed by both parties hereto or their respective successors in interest.

(f) TIME IS OF THE ESSENCE UNDER ALL PROVISIONS OF THIS LEASE, INCLUDING ALL NOTICE PROVISIONS.

(g) Except for the payment of Rent, each party hereto shall be excused for the period of any delay and shall not be deemed in default with respect to the performance of any of its obligations when prevented from so doing by a cause beyond such party's reasonable control, including, without limitation, strikes or other labor disputes, orders or regulations of any federal, state, county or municipal authority, embargoes, non-issuance of a governmental permit, fire or other casualty (or reasonable delays in the adjustment of insurance claims), acts of terrorism or war, inability to obtain any materials or services, or acts of God (each, a "Force Majeure Event"). No such inability or delay due to a Force Majeure Event shall constitute an actual or constructive eviction, in whole or in part, or entitle Tenant to any abatement or diminution of Rent, or relieve the other party from any of its obligations under this Lease, or impose any liability upon such party or its agents, by reason of inconvenience or annoyance to the other party, or injury to or interruption of the other party's business, or otherwise.

(h) Excepting payments of Fixed Rent, Operating Expenses, and utilities (which are to be paid as set forth in Sections 4, 5 and 6) and unless a specific time is otherwise set forth in this Lease for any Tenant payments, all amounts due from Tenant to Landlord shall be paid by Tenant to Landlord within 30 days after receipt of an invoice therefor. Tenant shall pay to Landlord all sales, use, transaction privilege, gross receipts, or other excise tax that may at any time be levied or imposed upon, or measured by, any amount payable by Tenant under this Lease.

(i) Unless Tenant's financials are publicly available online at no cost to Landlord, within 10 days after written request by Landlord (but not more than once during any 12-month period unless a default has occurred under this Lease or Landlord has a reasonable basis to suspect that Tenant has suffered a material adverse change in its financial position, or in the event of a sale, financing, or refinancing by Landlord of all or any portion of the Project), Tenant shall furnish to Landlord, Landlord's Mortgagee, prospective Mortgagee or purchaser, reasonably requested financial information. In connection therewith and upon Tenant's request, Landlord and Tenant shall execute a mutually acceptable confidentiality agreement which shall be based, in the first instance, on Landlord's form therefor.

(j) Tenant represents and warrants to Landlord that: (i) Tenant was duly organized and is validly existing and in good standing under the Laws of the jurisdiction set forth for Tenant in the first sentence of this Lease; (ii) Tenant is legally authorized to do business in the State; and (iii) the person(s) executing this Lease on behalf of Tenant is(are) duly authorized to do so.

(k) Each party hereto represents and warrants to the other that such party is not a party with whom the other is prohibited from doing business pursuant to the regulations of the Office of Foreign Assets Control ("OFAC") of the U.S. Department of the Treasury, including those parties named on OFAC's Specially Designated Nationals and Blocked Persons List. Each party hereto is currently in compliance with, and shall at all times during the Term remain in compliance with, the regulations of OFAC and any other governmental requirement relating thereto. Each party hereto shall defend, indemnify and hold harmless the other from and against any and all claims, damages, losses, risks, liabilities and expenses (including reasonable attorneys' fees and costs) incurred by the other to the extent arising from or related to any breach of the foregoing certifications. The foregoing indemnity obligations shall survive the Expiration Date.

(l) If required by law or statute or the rules of any stock exchange to which such party is subject, either Landlord or Tenant shall have the right, without further notice to Tenant, to include general information relating to this Lease, including Tenant's name, the Building and the square footage of the Premises in press releases relating to Landlord's and Landlord's affiliates' leasing activity. Information relating to rates shall not be released without the other party's prior written consent. The parties acknowledge that the transaction described

in this Lease and the terms hereof are of a confidential nature and shall not be disclosed except to such party's employees, attorneys, accountants, consultants, advisors, affiliates, and actual and prospective purchasers, lenders, investors, subtenants and assignees (collectively, "Permitted Parties"), and except as, in the good faith judgment of Landlord or Tenant, may be required to enable Landlord or Tenant to comply with its obligations under law or under rules and regulations of the Securities and Exchange Commission or the rules of any stock exchange to which such party is subject. Neither party may make any public disclosure of the specific terms of this Lease, except as required by law or as otherwise provided in this paragraph. In connection with the negotiation of this Lease and the preparation for the consummation of the transactions contemplated hereby, each party acknowledges that it will have had access to confidential information relating to the other party. Each party shall treat such information and shall cause its Permitted Parties to treat such confidential information as confidential, and shall preserve the confidentiality thereof, and not duplicate or use such information, except by Permitted Parties.

(m) Neither Tenant, nor anyone acting through, under, or on behalf of Tenant, shall have the right to record this Lease, nor any memorandum, notice, affidavit, or other writing with respect thereto.

(n) Tenant shall not claim any money damages by way of setoff, counterclaim, or defense, based on any claim that Landlord unreasonably withheld its consent, in which case Tenant's sole and exclusive remedy shall be an action for specific performance, injunction, or declaratory judgment.

(o) All requests made to Landlord to perform repairs or furnish services, supplies, utilities, or freight elevator usage (if applicable), shall be made online to the extent available (currently such requests shall be made via http://etenants.com/, as the same may be modified by Landlord from time to time) otherwise via email or written communication to Landlord's property manager for the Building. Whenever Tenant requests Landlord to take any action not required of Landlord under this Lease or give any consent required or permitted to be given by Landlord under this Lease (for example, a request for a Transfer consent, a consent to an Alteration, or a subordination of Landlord's lien), Tenant shall pay to Landlord for Landlord's administrative and/or professional costs in connection with each such action or consent, the greater of: (i) $1,500; or (ii) Landlord's reasonable, out-of-pocket costs incurred by Landlord in reviewing and taking the proposed action or consent, including reasonable attorneys', engineers' and/or architects' fees (as applicable), plus the Administrative Fee. The foregoing amount shall be paid by Tenant to Landlord within 30 days after Landlord's delivery to Tenant of an invoice for such amount. Tenant shall pay such amount without regard to whether Landlord takes the requested action or gives the requested consent.

(p) Tenant acknowledges and agrees that Landlord shall not be considered a "business associate" for any purpose under the Health Insurance Portability and Accountability Act of 1996 and all related implementing regulations and guidance.

(q) Tenant shall cause any work performed on behalf of Tenant to be performed by contractors who work in harmony, and shall not interfere, with any labor employed by Landlord or Landlord's contractors.

(r) This Lease may be executed in any number of counterparts, each of which when taken together shall be deemed to be one and the same instrument. Upon Tenant's receipt of two executed original counterparts of this Lease from Landlord, Tenant shall provide Landlord with one, fully executed original of this Lease. The parties acknowledge and agree that notwithstanding any law or presumption to the contrary, the exchange of copies of this Lease and signature pages by electronic transmission shall constitute effective execution and delivery of this Lease for all purposes, and signatures of the parties hereto transmitted and/or produced electronically shall be deemed to be their original signature for all purposes.

(s) Landlord and persons authorized by Landlord may enter the Premises at all reasonable times upon reasonable advance notice or, in the case of an emergency, at any time without notice. Landlord shall not be liable for inconvenience to or disturbance of Tenant by reason of any such entry; provided, however, in the case of repairs or work, such shall be done, so far as practicable, so as to not unreasonably interfere with Tenant's use of the Premises.

(t) If more than one person executes this Lease as Tenant, each of them is jointly and severally liable for the keeping, observing, and performing of all of the terms, covenants, conditions, provisions, and agreements of this Lease to be kept, observed, and performed by Tenant.

(u) TO THE EXTENT PERMITTED BY APPLICABLE LAW, LANDLORD AND TENANT HEREBY WAIVE TRIAL BY JURY IN ANY ACTION, PROCEEDING, OR COUNTERCLAIM BROUGHT BY EITHER AGAINST THE OTHER ON ANY MATTER ARISING OUT OF OR IN ANY WAY CONNECTED WITH THIS LEASE, THE RELATIONSHIP OF LANDLORD AND TENANT, OR TENANT'S USE OR OCCUPANCY OF THE BUILDING, ANY CLAIM OR INJURY OR DAMAGE, OR ANY EMERGENCY OR OTHER STATUTORY REMEDY WITH RESPECT THERETO.

26. EXTENSION OPTION.

(a) Provided no Event of Default then exists, Tenant is the originally named Tenant, and Tena nt is not subleasing all or any portion of the Premises, Tenant shall have the right to extend the Term ("Extension Option") for 5 years beyond the end of the Initial Term ("Extension Term") by delivering Tenant's written extension election notice to Landlord no later than 12 months prior to the expiration of the Initial Term, with time being of the essence. The terms and conditions of this Lease during the Extension Term shall remain unchanged except Tenant shall only be entitled to the one Extension Term provided above, the annual Fixed Rent for the Extension Term shall be the Extension Rent (as defined below), the Expiration Date shall be the last day of the Extension Term, Landlord shall have no obligation to perform any tenant improvements to the Premises or provide any tenant improvement allowance to Tenant. Upon Tenant's delivery of its written extension election notice, Tenant may not thereafter revoke its exercise of the Extension Option. Notwithstanding anything to the contrary in this Lease, Tenant shall have no right to extend the Term other than or beyond the one, 5-year Extension Term described in this paragraph.

(b) "Extension Rent" means 95% of the fair market extension term base rent for space comparable to the Premises in comparable buildings in the market in which the Project is located. In determining the Extension Rent, Landlord, Tenant and any broker shall take into account all relevant factors including, without limitation, prevailing market allowances and concessions for renewing tenants, space measurement methods and loss factors, the lease term, the size of the space, the location of the building(s), parking charges, the amenities offered at the building(s), the age of the building(s), and whether Project Expenses and other pass-through expenses are on a triple net, base year, expense stop or other basis. In lieu of directly providing any prevailing market allowances and/or concessions, Landlord may elect to reduce the Extension Rent by the economic equivalent thereof to reflect the fact that such allowances and concessions were not provided directly to Tenant. During the Extension Term, Tenant shall not be entitled to any tenant improvement allowances, free rent periods or other economic concessions (if any) that Tenant was entitled to during the Initial Term of this Lease, except to the extent such items are indirectly incorporated into the Extension Rent as set forth in this Section. When the Extension Rent is being determined for the first year of the Extension Term, the Extension Rent for the second and all subsequent years of the Extension Term shall also be determined in accordance with the same procedures as are set forth herein and based upon the then prevailing annual rent escalation factor in the applicable leasing market.

(c) If Landlord and Tenant do not agree upon the Extension Rent in writing within 20 days after Landlord receives Tenant's extension notice, then within 15 days after either party notifies the other in writing that such notifying party desires to determine the Extension Rent in accordance with the procedures set forth in this Section, Landlord and Tenant shall each deliver to the other party a written statement of such delivering party's determination of the Extension Rent, together with such supporting documentation as the delivering party desires to deliver. Within 10 days after such 15-day period, Landlord and Tenant shall appoint an independent real estate broker having a minimum of 10 years' experience in the market in which the Project is located who shall select either Landlord's determination or Tenant's determination, whichever the broker finds more accurately reflects the Extension Rent. The broker shall be instructed to notify Landlord and Tenant of such selection within 10 days after such broker's appointment. The broker shall have no power or authority to select any Extension Rent other than the Extension Rent submitted by Landlord or Tenant nor shall the broker have any power or authority to modify any of the provisions of this Lease, and the decision of the broker shall be final and binding upon Landlord and Tenant. If Landlord and Tenant do not timely agree in writing upon the appointment of the broker, Landlord shall submit to Tenant the names of three qualified brokers who have not been employed by Landlord or Landlord's affiliates

during the then-past two years and Tenant shall have 10 days after receiving such names to notify Landlord of which of the three brokers Tenant selects to determine the Extension Rent. If Tenant fails to timely notify Landlord of Tenant's selection, Landlord shall have the right to unilaterally appoint the broker. The fee and expenses of the third broker shall be shared equally by Landlord and Tenant.

(d) Upon Tenant's timely and proper exercise of the Extension Option pursuant to the terms above and satisfaction of the above conditions: (i) the "Term" shall include the Extension Term, subject only to the determination of Extension Rent; and (ii) Tenant shall execute prior to the expiration of the then-expiring Term, an appropriate amendment to this Lease, in form and content reasonably satisfactory to both Landlord and Tenant, memorializing the extension of the Term for the ensuing Extension Term.

27. TERMINATION OPTION. Provided Tenant is the originally named Tenant, Tenant is neither in monetary default of this Lease on the Termination Date (as defined below) nor has there previously been an Event of Monetary Default, and this Lease is in full force and effect, Tenant shall have the right to terminate this Lease effective at 11:59 p.m. on the Termination Date, in accordance with and subject to each of the following terms and conditions ("Termination Option"). The "Termination Date" shall mean the last day of the 40th full calendar month after the Commencement Date. If Tenant desires to exercise the Termination Option, Tenant shall give to Landlord irrevocable written notice of Tenant's exercise of the Termination Option ("Termination Notice"), together with the Termination Payment (as defined below). The Termination Notice and the Termination Payment shall be received by Landlord no later than the date that is 9 months prior to the Termination Date, failing which the Termination Option shall be deemed waived (provided Landlord reserves the right to waive in writing the requirement that Tenant fully and/or timely pay the Termination Payment). The "Termination Payment" shall equal the sum of: (A) the unamortized (amortized on a straight-line basis with interest at 10%): (i) brokerage commissions and attorneys' fees paid by Landlord in connection with this Lease; (ii) rent concessions; and (iii) total cost incurred by Landlord for improvements, including the Leasehold Improvements, to the Premises in connection with this Lease. Tenant acknowledges and agrees that the Termination Payment is not a penalty and is fair and reasonable compensation to Landlord for the loss of expected rentals from Tenant. The Termination Payment shall be payable by wire transfer or cashier's check. Time is of the essence with respect to the dates and deadlines set forth herein. Notwithstanding the foregoing, if at any time during the period on or after the date of the Termination Notice, up to and including the Termination Date, Tenant shall be in default of this Lease, then Landlord may elect, but is not obligated, by written notice to Tenant to cancel and declare null and void Tenant's exercise of the Termination Option, in which case this Lease shall continue in full force and effect for the full Term unaffected by Tenant's exercise of the Termination Option. If Tenant timely and properly exercises the Termination Option in accordance with this paragraph and Landlord has not negated the effectiveness of Tenant's exercise of the Termination Option pursuant to the preceding sentence, this Lease and the Term shall come to an end on the Termination Date with the same force and effect as if the Term were fixed to expire on such date, the Expiration Date shall be the Termination Date, and the terms and provisions of Section 18 shall apply.

28. RIGHT OF FIRST OFFER.

(a) Following receipt of Tenant's written request at any time after the Commencement Date, Landlord shall notify ("Landlord's ROFO Notice") Tenant as to any rentable space located contiguous to and on the same floor as the Premises that becomes available for lease from Landlord or Landlord reasonably anticipates that such space will become available for lease from Landlord prior to the last 36 months of the Initial Term ("ROFO Space"). In such ROFO Notice, Landlord shall so notify Tenant of the anticipated availability date and, subject to the terms and provisions of this Section, Tenant shall have the one-time right to lease all (but not less than all) of the ROFO Space ("ROFO") by delivering Tenant's written notice of such election to Landlord ("Tenant's ROFO Notice") within 5 days after Tenant's receipt of Landlord's ROFO Notice. Upon Tenant's delivery of Tenant's ROFO Notice, Tenant may not thereafter revoke Tenant's exercise of the ROFO.

(b) Notwithstanding anything to the contrary in this Lease, the ROFO shall be subject to the following: (i) if Tenant notifies Landlord that Tenant elects not to lease the ROFO Space or if Tenant fails to timely deliver Tenant's ROFO Notice to Landlord with respect thereto, then Landlord shall have the right to enter into a lease for the ROFO Space under one or more leases containing such terms as Landlord deems acceptable in Landlord's sole discretion (including, without limitation, any right of first offer or other expansion rights that Landlord might grant such tenant(s) for such ROFO Space) and the ROFO shall be void and have no further force or

effect with respect to such space; (ii) the ROFO shall be subject, subordinate, and in all respects inferior to the rights of any third-party tenant leasing space at the Building as of the date of this Lease (including, without limitation, any lease term extension period(s) contained in such tenant's lease, regardless of whether the extension right or agreement is contained in such lease or is agreed to at any time by Landlord and the tenant under such lease); (iv) Landlord may at any time choose to use any space that is or about to become vacant within the Building for marketing or property management purposes, or as a Building amenity or Common Area such as a fitness center or conference area, without in any such case notifying or offering such space to Tenant, or giving rise to any right of Tenant hereunder; and (iii) Tenant's exercise of the ROFO shall be subject to the existence of the following conditions at the time of such exercise: (A) this Lease is in full force and effect; (B) no Event of Default then exists; (C) Tenant has timely exercised the ROFO, with time being of the essence; and (D) Tenant is the originally named Tenant. If an Event of Default exists at any time after Landlord receives Tenant's ROFO Notice but before the first day that Tenant commences to lease the ROFO Space, Landlord, at Landlord's option, shall have the right to nullify Tenant's exercise of the ROFO with respect to the ROFO Space.

(c) Tenant shall take the ROFO Space in "AS IS" condition, and Landlord shall have no obligation to make any improvements or alterations to the ROFO Space. Landlord shall determine the exact location of any demising walls (if any) for the ROFO Space. Tenant shall not be entitled to any tenant improvement allowances, free rent periods, or other special concessions granted to Tenant with respect to the original Premises. Fixed Rent for the ROFO Space shall be at the amount of Fixed Rent set forth in Landlord's ROFO Notice. Notwithstanding the foregoing, if Tenant has the right to extend the Term and Tenant does, in fact, extend the Term after the date on which Tenant exercises its ROFO with respect the ROFO Space, then Rent for the ROFO Space for such extension period shall be at the same rate that Tenant will pay as Rent under the Term extension provisions of this Lease. With respect to the ROFO Space, Tenant shall pay Tenant's Share of Operating Expenses and utilities pursuant to the terms of this Lease, but the Base Year shall be the calendar year immediately preceding the first day that Tenant leases the ROFO Space. Except to the extent expressly set forth in this Section to the contrary, if Tenant elects to lease the ROFO Space, such space shall become subject to this Lease upon the same terms and conditions as are then applicable to the original Premises. Upon Tenant's leasing of the ROFO Space, the "Premises" shall include the ROFO Space and, except as otherwise set forth in this Section, all computations made under this Lease based upon or affected by the rentable area of the Premises shall be recomputed to include the ROFO Space.

(d) Except as set forth in this Section to the contrary, Tenant shall lease the ROFO Space pursuant to an amendment to this Lease. Tenant shall execute and deliver the amendment within 10 days after Landlord's delivery thereof, with time being of the essence.

(e) If Tenant exercises its right to lease the ROFO Space: (a) Tenant's lease of the ROFO Space shall commence upon the later of: (i) the date of availability specified in Landlord's ROFO Notice; or (ii) the date Landlord tenders possession of the ROFO Space in vacant condition; (b) the ROFO shall thereafter be null and void; and (c) the term of Tenant's lease of the ROFO Space shall be the term specified in Landlord's ROFO Notice. Landlord shall promptly commence and diligently pursue obtaining possession of the ROFO Space so that Landlord can tender the ROFO Space to Tenant; provided, however, Landlord shall have no liability to Tenant if Landlord does not tender or does not timely tender the ROFO Space to Tenant.

[SIGNATURES ON FOLLOWING PAGE]

TENANT CONFESSION CERTIFICATION: Tenant certifies that Tenant has initialed Section 17(i)(3) of this Lease and Tenant acknowledges and agrees that any failure of Tenant to initial such Section 17(i)(3) hereunder shall be an absolute bar from Tenant (or Tenant's successors or assigns) cla iming, alleging or petitioning, including, but not limited to, in any petition to open said confession, that such Section is invalid and not binding upon Tenant (or Tenant's successors or assigns).

IN WITNESS WHEREOF, the parties hereto have executed this Lease under seal as of the day and year first-above stated.

LANDLORD:
ATLANTIC AMERICAN PROPERTIES TRUST

By: :/s/ Kathy Sweeney-Pogwist
Name: Kathy Sweeney-Pogwist
Title: SVP Leasing
Date: 1/29/15

TENANT:
PARATEK PHARMACEUTICALS LLC

By: /s/ Douglas W. Pagán
Name: Douglas W. Pagán
Title: Chief Financial Officer
Date: 3-JAN-2015

Exhibits:

Exhibit A:	Location Plan of Premises
Exhibit B:	Form of COLT
Exhibit C:	Leasehold Improvements
Exhibit D:	Janitorial Specifications
Exhibit E:	Rules and Regulations

[Signature Page]

EXHIBIT A
LOCATION PLAN OF PREMISES (NOT TO SCALE)

EXHIBIT B
FORM OF COLT

CONFIRMATION OF LEASE TERM

THIS CONFIRMATION OF LEASE TERM ("COLT") is made as of _____ between _____ ("Landlord") and _____ ("Tenant").

1. Landlord and Tenant are parties to that certain lease dated _____ ("Lease Document"), with respect to the premises described in the Lease Document, known as Suite ____ consisting of approximately _____ rentable square feet ("Premises"), located at _____.

2. All capitalized terms, if not defined in this COLT, have the meaning give such terms in the Lease Document.

3. Tenant has accepted possession of the Premises in their "AS IS" "WHERE IS" condition and all improvements required to be made by Landlord per the Lease Document have been completed.

4. The Lease Document provides for the commencement and expiration of the Term of the lease of the Premises, which Term commences and expires as follows:

   a. Commencement of the Term of the Premises: _____

   b. Expiration of the Term of the Premises: _____

5. The required amount of the Security Deposit and/or Letter of Credit per the Lease Document is $_____. Tenant has delivered the Security Deposit and/or Letter of Credit per the Lease Document in the amount of $_____.

6. The Building Number is _____ and the Lease Number is _____. This information must accompany every payment of Rent made by Tenant to Landlord per the Lease Document.

TENANT:

_____

By:_____

Name:_____

Title:_____

LANDLORD:

_____

By:_____

Name:_____

Title:_____

EXHIBIT C
LEASEHOLD IMPROVEMENTS

1. Landlord shall, at its sole cost and expense and using Building-standard materials and finishes, complete the improvements in the Premises (collectively, "Leasehold Improvements") shown or described on Exhibit C-1 attached hereto, including add/alts and incorporating existing interior doors which require the addition of glass inserts. Number 4, or symbol 9, on the legend will be excluded because herculite glass doors are already in place at the entry. If any material revision to the Leasehold Improvements is deemed necessary by Landlord, such revision shall be submitted to Tenant for approval, which approval shall not be unreasonably withheld, conditioned, or delayed.

2. The Landlord has set a target for Substantial Completion (as defined below) of 8 weeks following full execution of the Lease. If Substantial Completion has not occurred by that date which is 16 weeks from full execution of the Lease, the Abatement Period shall be extended for one (1) day for every day that elapses following the date which is 16 weeks from full execution of the Lease until the actual date of Substantial Completion. If Substantial Completion has not occurred on or before the date which is 24 weeks from full execution of the Lease, Tenant shall have the option, but not the obligation to terminate this Lease. If Substantial Completion is delayed as a result of any Tenant Delay (as defined below), then notwithstanding anything to the contrary in the Lease, Substantial Completion shall be deemed to have occurred on the date it would have occurred but for such Tenant Delay. "Substantial Completion" occurs on the date on which the Leasehold Improvements have been completed except as set forth on the Punch List (as defined below) and a permanent or temporary certificate of occupancy permitting full occupancy of the Premises has been issued. If issuance of a permanent or temporary certificate of occupancy is conditioned upon Tenant's installation of its equipment, racking, cabling, or furniture or completion of any other work or activity in the Premises for which Tenant is responsible, and the governmental authority will not issue the temporary or permanent certificate of occupancy, or schedule an inspection of the Leasehold Improvements due to Tenant's failure to complete any work, installation, or activity (including the installation of any telephone, telephone switching, telephone, data, and security cabling and systems, furniture, computers, servers, Tenant's trade fixtures and other personal property installed (or to be installed) by or on behalf of Tenant in the Premises), then Substantial Completion shall be deemed to have occurred without Landlord having obtained the temporary or permanent certificate of occupancy. "Tenant Delay" shall mean any Tenant-caused delay in Substantial Completion, including without limitation: (i) Tenant's failure to provide any reasonably requested information or approvals related to the Leasehold Improvements within 5 business days after receipt of Landlord's written request therefor; (ii) Tenant's request for materials, finishes, or installations other than Landlord's Building standard; (iii) the performance or completion of any work, labor, or services by Tenant or any party employed or engaged by or on behalf of Tenant.

3. Prior to delivery of possession of the Premises to Tenant, Landlord or Landlord's architect shall prepare a preliminary punch list in writing for Landlord's and Tenant's review, and Landlord and Tenant shall examine the Premises and agree on a final punch list that shall specify any items of work that require correction, repair, or replacement ("Punch List"). Tenant shall approve the Punch List in writing within 2 business days of the walkthrough. Landlord shall use commercially reasonable efforts to complete the Punch List work within 30 days; provided however, that the expiration of such 30 day period shall not relieve Landlord's obligation to continue using commercially reasonable efforts to complete the Punch List work.

EXHIBIT C-1
SPACE PLAN (NOT TO SCALE)

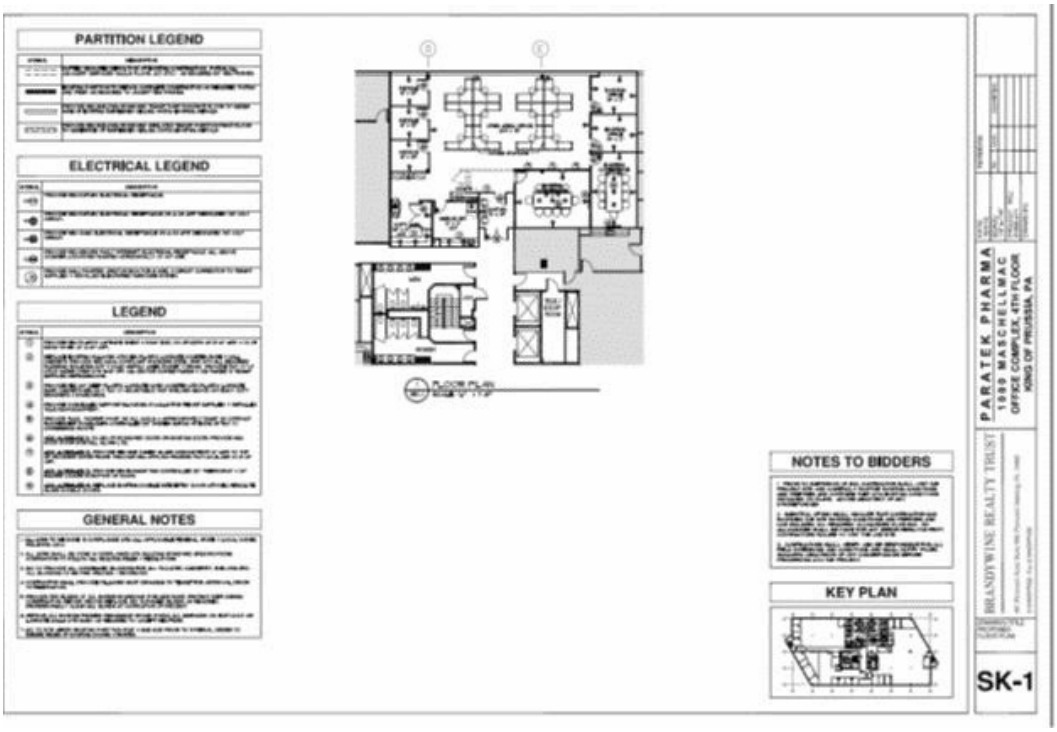


EXHIBIT D
JANITORIAL SPECIFICATIONS

OFFICE CLEANING SPECIFICATIONS

DAILY

- Empty Trash and Recycle
- Spot Clean Carpet
- Remove Visible Debris/Litter from Carpet
- Spot Clean Desks and Tables
- Straighten Chair – Furniture
- Turn Off Lights

WEEKLY

- Dust Desks (only if clear of personal effects) and Tops of System Furniture
- Vacuum Carpet
- Clean Telephones in common areas
- Clean Tables

AS NEEDED

- Clean Wastebaskets
- Clean Light Fixtures and Vents
- Clean Walls, Switch Plates and Baseboards
- Dust File Cabinets, Partitions and Bookshelves
- Clean Chairs
- Clean Doors
- Dust Pictures and Surfaces Over 5'
- Dust Window Sills, Ledges and Radiators
- Spot Clean Side Light Glass

RESTROOM CLEANING SPECIFICATIONS

DAILY

- Sinks
- Floors
- Counters
- Trash Receptacle
- Toilet/Urinals
- Dispensers
- Door
- Spot Clean Walls
- Spot Clean Partitions

WEEKLY

- Dust Lights
- Dust Surfaces Over 5'

AS NEEDED

- Ceiling Vents
- Clean Walls
- Clean Partitions

FLOOR CARE SPECIFICATIONS

DAILY

- Spot Clean Carpet

WEEKLY

- Sweep kitchen floors
- Wet mop kitchen floors

AS NEEDED

- Burnish Polished Surfaces
- Machine Scrub Restroom Floors

THESE SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE. THE COST FOR ANY CLEANING OVER AND ABOVE THE STANDARD CLEANING SPECIFICATIONS ARE TO BE PAID BY TENANT.

EXHIBIT E
RULES AND REGULATIONS

RULES AND REGULATIONS

1. Sidewalks, entrances, passages, elevators, vestibules, stairways, corridors, halls, lobby, and any other part of the Building shall not be obstructed or encumbered by Tenant or used for any purpose other than ingress or egress to and from the Premises. Landlord shall have the right to control and operate the common portions of the Building and exterior facilities furnished for common use of the Building's tenants (such as the eating, smoking, and parking areas) in such a manner as Landlord deems appropriate.

2. No awnings or other projections may be attached to the outside walls of the Building without the prior written consent of Landlord. All drapes and window blinds shall be of a quality, type, design, and color, and attached in a manner approved in writing by Landlord.

3. No showcases, display cases, or other articles may be put in front of or affixed to any part of the exterior of the Building, or placed in hallways or vestibules without the prior written consent of Landlord. All supplies shall be kept in designated storage areas. Tenant shall not use or permit the use of any portion of the Project for outdoor storage. No mats, trash, or other objects may be placed in the public corridors, hallways, stairs, or other common areas of the Building.

4. Restrooms and other plumbing fixtures shall not be used for any purposes other than those for which they were constructed, and no debris, rubbish, rags, or other substances may be thrown therein. Only standard toilet tissue may be flushed in commodes. All damage resulting from any misuse of these fixtures shall be the responsibility of the tenant who, or whose employees, agents, visitors, clients, or licensees, caused such damage. Bathing and changing of clothes is permitted only in designated shower/locker facilities, and is not permitted in restrooms.

5. Tenant shall not, without the prior written consent of Landlord, mark, paint, drill into, bore, cut, string wires, or in any way deface any part of the Premises or the Building except for the reasonable hanging of decorative or instructional materials on the walls of the Premises. Tenant shall remove seasonal decorations that are visible outside of the Premises within 30 days after the end of the applicable season.

6. Tenant shall not construct, install, maintain, use, or operate in any part of the Project any electrical device, wiring, or other apparatus in connection with a loud speaker system or other sound/communication system that may be heard outside the Premises.

7. No bicycles, mopeds, skateboards, scooters, or other vehicles may be brought into, used, or kept in or about the Building or in the common areas of the Project other than in locations specifically designated thereof. No animals or pets of any kind (other than a service animal performing a specified task), including without limitation fish, rodents, and birds, may be brought into, used, or kept in or about the Building. Rollerblading and roller skating is not permitted in the Building or in the common areas of the Project.

8. Tenant shall not cause or permit any unusual or objectionable odors to be produced upon or permeate from the Premises.

9. No space in the Project may be used for the manufacture of goods for sale in the ordinary course of business, or for sale at auction of merchandise, goods, or property of any kind.

10. Tenant shall not make any unseemly or disturbing noises, or disturb or interfere with the occupants of the Building or neighboring buildings or residences by voice, musical instrument, radio, talking machines, whistling, singing, lewd behavior, or in any other way. All passage through the Building's hallways, elevators, and main lobby shall be conducted in a quiet, businesslike manner. Tenant shall not commit or suffer any waste upon the Premises, the Building, or the Project, or any nuisance, or do any other act or thing that may disturb the quiet enjoyment of any other tenant in the Building or Project.

11. Tenant shall not throw anything out of the doors, windows, or down corridors or stairs of the Building.

12. Tenant shall not place, install, or operate in the Premises or in any part of the Project, any engine, stove,

machinery, or electrical equipment not directly related to its business, including without limitation space heaters, coffee cup warmers, and small refrigerators, conduct mechanical operations, cook thereon or therein, or place or use in or about the Premises or the Project any explosives, gasoline, kerosene oil, acids, caustics, canned heat, charcoal, or any other flammable, explosive or hazardous material, without the prior written consent of Landlord. Notwithstanding the foregoing, Tenant shall have the right to install and use a coffee machine, microwave oven, toaster, ice maker, refrigerator, and/or vending machine in compliance with all applicable Laws in a kitchen or break room designated as such by Landlord, provided Tenant shall use only stainless steel braided hoses. All supply waterlines shall be of copper (not plastic) tubing.

13. No smoking (including without limitation of cigarettes, cigars, and e-cigarettes) is permitted anywhere in the Premises, the Building, or the Project, including but not limited to restrooms, hallways, elevators, stairs, lobby, exit and entrance vestibules, sidewalks, and parking lot areas, provided smoking shall be permitted in any Landlord-designated exterior smoking area. All cigarette ashes and butts shall be deposited in the containers provided for such disposal, and shall not be disposed of on sidewalks, parking lot areas, or toilets.

14. Tenant shall not install any additional locks or bolts of any kind upon any door or window of the Building without the prior written consent of Landlord. Tenant shall, upon the termination of its tenancy, return to Landlord all keys for the Premises, either furnished to or otherwise procured by Tenant, and all security access cards to the Building.

15. Tenant shall keep all doors to hallways and corridors closed during Business Hours except as they may be used for ingress or egress.

16. Tenant shall not use the name of the Building, Project, Landlord, or Landlord's agents or affiliates in any way in connection with its business except as the address thereof. Landlord shall also have the right to prohibit any advertising by Tenant that, in Landlord's sole opinion, tends to impair the reputation of the Building or its desirability as a building for offices, and upon written notice from Landlord, Tenant shall refrain from or discontinue such advertising.

17. Tenant shall be responsible for all security access cards issued to it, and shall secure the return of all security cards from all employees terminating employment with them. Lost cards shall cost $35.00 per card to replace. No person/company other than Building tenants and/or their employees may have security access cards unless Landlord grants prior written approval.

18. All deliveries to the Building that involve the use of a hand cart, hand truck, or other heavy equipment or device shall be made via the freight elevator, if such freight elevator exists in the Building. Tenant shall be responsible to Landlord for any loss or damage resulting from any deliveries made by or for Tenant to the Building. Tenant shall procure and deliver to Landlord a certificate of insurance from its movers, which certificate shall name Landlord as an additional insured.

19. Landlord reserves the right to inspect all freight to be brought into the Building, and to exclude from the Building all freight or other material that violates any of these rules and regulations.

20. Tenant shall refer all contractors, contractor's representatives, and installation technicians rendering any service on or to the Premises, to Landlord for Landlord's approval and supervision before performance of any contractual service or access to Building. This provision shall apply to all work performed in the Building including installation of telephones, telegraph equipment, electrical devices and attachments, and installations of any nature affecting floors, walls, woodwork, trim, windows, ceilings, equipment, or any other physical portion of the Building. Landlord reserves the right to require that all agents of contractors and vendors sign in and out of the Building.

21. If Tenant desires to introduce electrical, signaling, telegraphic, telephonic, protective alarm or other wires, apparatus or devices, Landlord shall direct where and how the same are to be placed, and except as so directed, no installation boring or cutting shall be permitted, without Landlord's consent, not to be unreasonably withheld, conditioned, or delayed. Landlord shall have the right to prevent and to cut off the

transmission of excessive or dangerous current of electricity or annoyances into or through the Building or the Premises and to require the changing of wiring connections or layout at Tenant's expense, to the extent that Landlord may reasonably deem necessary, and further to require compliance with such reasonable and uniformly applied rules as Landlord may establish relating thereto, and in the event of non-compliance with the requirements or rules, Landlord shall have the right immediately to cut wiring or to do what it reasonably considers necessary to remove the danger, annoyance, or electrical interference with apparatus in any part of the Building. All wires installed by Tenant must be clearly tagged at the distributing boards and junction boxes and elsewhere where required by Landlord, with the suite number of the office to which such wires lead, and the purpose for which the wires respectively are used, together with the name of the concern, if any, operating such wires.

22. Landlord reserves the right to exclude from the Building at all times any person who is not known or does not properly identify himself or herself to Landlord's management or security personnel.

23. Landlord may require, at its sole option, all persons entering the Building outside of Business Hours to register at the time they enter and at the time they leave the Building.

24. No space within the Building, or in the common areas such as the parking lot, may be used at any time for the purpose of lodging, sleeping, or for any immoral or illegal purposes.

25. Tenant shall not use the hallways, stairs, lobby, or other common areas of the Building as lounging areas during breaks or during lunch periods.

26. No canvassing, soliciting, or peddling is permitted in the Building or its common areas.

27. Tenant shall comply with all Laws regarding the collection, sorting, separation, and recycling of garbage, trash, rubbish and other refuse, and Landlord's recycling policy for the Building.

28. Landlord does not maintain suite finishes that are non-standard, such as kitchens, bathrooms, wallpaper, special lights, etc. However, should the need arise for repair of items not maintained by Landlord, Landlord at its sole option, may arrange for the work to be done at tenant's expense.

29. Tenant shall clean at least once a year, at its expense, drapes in the Premises that are visible from the exterior of the Building.

30. No pictures, signage, advertising, decals, banners, etc. may be placed in or on windows in such a manner as they are visible from the exterior, without the prior written consent of Landlord.

31. Tenant is prohibited at all times from eating or drinking in hallways, elevators, restrooms, lobbies, or lobby vestibules outside of the Premises. Food storage shall be limited to a Landlord-approved kitchen or break room.

32. Tenant shall be responsible to Landlord for any acts of vandalism performed in the Building by its employees, invitees, agents, contractors, licensees, subtenants, and assignees.

33. Tenant shall not permit the visit to the Premises of persons in such numbers or under such conditions as to interfere with the use and enjoyment by other tenants of the entrances, hallways, elevators, lobby, exterior common areas, or other public portions or facilities of the Building.

34. Landlord's employees shall not perform any work or do anything outside of their regular duties unless under special instructions from Landlord. Requests for such requirements shall be submitted in writing to Landlord.

35. Tenant is prohibited from interfering in any manner with the installation and/or maintenance of the heating, air conditioning and ventilation facilities and equipment at the Project.

36. Landlord shall not be responsible for lost or stolen personal property, equipment, money, or jewelry regardless of whether such loss occurs when an area is locked against entry or not.

37. Landlord shall not permit entrance to the Premises by use of pass key controlled by Landlord, to any person at any time without written permission of Tenant, except employees, contractors or service personnel supervised or employed by Landlord.

38. Tenant shall observe and comply with the driving and parking signs and markers on the Project grounds and surrounding areas. Tenant shall comply with all reasonable and uniformly applied parking regulations promulgated by Landlord from time to time for the orderly use of vehicle parking areas. Parked vehicles shall not be used for vending or any other business or other activity while parked in the parking areas. Vehicles shall be parked only in striped parking spaces, except for loading and unloading, which shall occur solely in zones marked for such purpose, and be so conducted as to not unreasonably interfere with traffic flow or with loading and unloading areas of other tenants. Tractor trailers shall be parked in areas designated for tractor trailer parking. Employee and tenant vehicles shall not be parked in spaces marked for visitor parking or other specific use. All vehicles entering or parking in the parking areas shall do so at owner's sole risk and Landlord assumes no responsibility for any damage, destruction, vandalism, or theft. Tenant shall cooperate with Landlord in any reasonable and uniformly applied measures implemented by Landlord to control abuse of the parking areas, including without limitation access control programs, tenant and guest vehicle identification programs, and validated parking programs, provided no such validated parking program shall result in Tenant being charged for spaces to which it has a right to free use under the Lease. Each vehicle owner shall promptly respond to any sounding vehicle alarm or horn, and failure to do so may result in temporary or permanent exclusion of such vehicle from the parking areas. Any vehicle that violates the parking regulations may be cited, towed at the expense of the owner, temporarily or permanently excluded from the parking areas, or subject to other lawful consequence.

39. Tenant shall not enter other separate tenants' hallways, restrooms, or premises except with prior written approval from Landlord's management.

40. Tenant shall not place weights anywhere beyond the load-per-square-foot carrying capacity of the Building.

41. Tenant shall comply with all laws, regulations, or other governmental requirements with respect to energy savings, not permit any waste of any utility services provided Landlord, and cooperate with Landlord fully to ensure the most effective and efficient operation of the Building.

42. The finishes, including floor and wall coverings, and the furnishings and fixtures in any areas of the Premises that are visible from the common areas of the Building are subject to Landlord's approval in its sole discretion. Selections for these areas shall be pre-approved in writing by Landlord.

43. Power strips and extension cords shall not be combined (also known as daisy chaining).

44. Candles and open flames are prohibited in the Building.

45. Guns, firearms, and other dangerous weapons (concealed or otherwise) are not allowed at the Project, subject to applicable Law (if any) requiring Landlord to so permit at the Project.

Landlord reserves the right to rescind any of these rules and make such other and further rules and regulations as in the judgment of Landlord shall from time to time be needed for the safety, protection, care, and cleanliness of the Project, the operations thereof, the preservation of good order therein, and the protection and comfort of its tenants, their agents, employees, and invitees, which rules when made and notice thereof given to Tenant shall be binding upon Tenant in a like manner as if originally prescribed. As used in these rules and regulations, capitalized terms shall have the respective meanings given to them in the Lease to which these rules and regulations are attached, provided Tenant shall be responsible for compliance herewith by everyone under Tenant's reasonable control, including without limitation its employees, invitees, agents, contractors, licensees, subtenants and assignees, and a violation of these rules and regulations by any of the foregoing is deemed a violation by Tenant.

THIS EXHIBIT HAS BEEN REDACTED AND IS THE SUBJECT OF A CONFIDENTIAL TREATMENT REQUEST. REDACTED MATERIAL IS MARKED WITH [* * *] AND HAS BEEN FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION.

Execution Version

MANUFACTURING AND SERVICES AGREEMENT

THIS MANUFACTURING AND SERVICES AGREEMENT (this "**Agreement**") is made and entered into as of December 30, 2016 (the "**Effective Date**"), by and between Paratek Pharmaceuticals, Inc., a corporation organized and existing under the laws of Delaware, with an address at 75 Park Plaza, 4th Floor, Boston, Massachusetts 02116, United States ("**Paratek**"), on the one hand, and Almac Pharma Services Limited, a company organized and existing under the laws of Northern Ireland with an address at Almac House, 20 Seagoe Industrial Estate, Craigavon, Northern Ireland, BT63 5QD ("**Almac**"), on the other hand. Paratek and Almac are collectively referred to herein as the "**Parties**", and each, a "**Party**".

RECITALS

WHEREAS, Almac is experienced in the manufacture and packaging of finished drug products in the antibiotic field;

WHEREAS, Almac has the capability to manufacture Omadacycline oral solid dosage tablets in bulk form meeting the Specifications (as defined below) (the "**Product**");

WHEREAS, Paratek intends to develop, market and sell Paratek Products (as defined below), including the Product; and

WHEREAS, Paratek desires to have Almac manufacture the Product for Paratek and Almac desires to do so all on the terms and subject to the conditions set forth herein.

NOW, THEREFORE, in consideration of the mutual covenants and agreements set forth herein, and for good and valuable consideration the receipt and sufficiency of which are hereby acknowledged, the Parties hereto hereby agree as follows:

1. DEFINITIONS

1.1 Definitions. As used in this Agreement, the following capitalized terms have the meanings indicated below:

1.1.1 "**Affiliate**" means, with respect to any Person, any other Person which directly or indirectly controls, is controlled by, or is under common control with that Person at any time during the period for which the determination of affiliation is being made. The term "control" (including, with correlative meaning, the terms "controlling", "controlled by" and "under common control with"), as used in this Section 1.1.1 with respect to any Person, means the possession, directly or indirectly, of the power to elect a majority of the board of directors (or other governing body) or to direct or cause the direction of the management and policies of such Person, whether through the ownership of voting securities, by contract or otherwise.

1.1.2 "**Agreement**" has the meaning set forth in the preamble hereto.

1.1.3 "**Almac**" has the meaning set forth in the preamble hereto.

1.1.4 "**Almac Improvement**" means any Invention that [* * *].

1.1.5 "**Almac Representatives**" has the meaning set forth in Section 13.1.2.

1.1.6 "**Almac Technology**" means (a) all intellectual property and embodiments thereof, including any Inventions, owned by Almac or its Affiliates as of the date hereof that are not Paratek Technology or Joint Technology and (b) the Almac Improvements.

1.1.7 "**Applicable Laws**" has the meaning set forth in Section 8.1.

1.1.8 "**Backup Supplier**" has the meaning set forth in Section 5.2.

1.1.9 "**Batch**" means, at any given time, a discrete output or isolation from a set of unit operations described in the then-current batch record instructions for the Product. The batch size for the Product shall be related to the capacity of a given equipment train and is dependent on the maximum utilization of the bottle-neck reactor or vessel. As of the Effective Date, a Batch of the Product is a [* * *] blend, which batch size may be modified from time to time.

1.1.10 "**Business Day**" means a day on which banking institutions in Boston, Massachusetts and Northern Ireland are open for business.

1.1.11 "**Calendar Quarter**" means, with respect to any given Calendar Year, the respective periods of three (3) consecutive calendar months ending on March 31, June 30, September 30 or December 31; provided, however, that (a) the first Calendar Quarter of the Term shall extend from the Effective Date to the end of the first complete Calendar Quarter thereafter and (b) the last Calendar Quarter of the Term shall end upon the effective date of expiration or termination of this Agreement.

1.1.12 "**Calendar Year**" means each successive period of twelve (12) consecutive months commencing on January 1 and ending on December 31; provided, however, that (a) the first Calendar Year of the Term shall begin on the Effective Date and end on December 31, 2016 and (b) the last Calendar Year of the Term shall end on the effective date of expiration or termination of this Agreement.

1.1.13 "**CDA**" means the Mutual Confidentiality Agreement between Paratek and Almac Group Limited and its Affiliates, dated as of February 25, 2016.

1.1.14 "**Change of Control**" means any transaction or series of transactions wherein (a) the voting securities of Almac outstanding immediately prior thereto cease to represent at least fifty percent (50%) of the combined voting power of the surviving entity immediately after such transaction or transactions; (b) the stockholders or equity holders of Almac approve a plan of complete liquidation of Almac, or an agreement for the sale or disposition by Almac of all or substantially all of Almac's assets, other than to an Affiliate; (c) a Third Party becomes the beneficial owner of fifty percent (50%) or more of the combined voting power of the outstanding securities of Almac or (d) substantially all of Almac's business or assets which relate to this Agreement are sold or otherwise transferred to a Third Party.

1.1.15 "**Claims**" means any and all claims, demands, suits, Losses (as hereinafter defined), liability, damage, fines, expenses and costs (including without limitation attorney's fees and expenses and settlement costs) arising from any cause of action brought by any party (including without limitation either Party and/or a Third Party or Third Parties), whether in contract, tort (including, without limitation, negligence), warranty, strict liability, product liability, statutory duty or otherwise.

1.1.16 "**Confidential Information**" means, with respect to any Party, such Party's technology, data, know-how, or information, whether written or oral, technical or non-technical, including, but not limited to, financial statements, reports, pricing, trade secrets, secret processes, formulae, samples, customer data (including, but not limited to, customer lists), the formulation of pharmaceutical dosage forms and compounds, manufacturing procedures, manufacturing processes, manufacturing equipment, manufacturing batch records, plant layouts, product volumes, quality control procedures, and quality control standards and the like, that is disclosed to the other Party. Confidential Information of Paratek shall include Manufacturing Information, any "Confidential Information" (as defined under the CDA) of Paratek disclosed by Paratek to Almac or any Affiliate of Almac under the CDA and Paratek Technology. Confidential Information of Almac shall include any "Confidential Information" (as defined under the CDA) of Almac disclosed by Almac to Paratek under the CDA.

1.1.17 "**Current Good Manufacturing Practice**" or "**cGMP**" means, at any given time, the current standards for the manufacture of pharmaceuticals, as set forth in the FD&C Act and applicable regulations promulgated thereunder, as amended from time to time, and such standards of good manufacturing practice as are required by the applicable laws and regulations of the United States, the European Union and any other countries agreed by the Parties in writing or pursuant to the Quality Agreement, to the extent such standards are not inconsistent with cGMP under the FD&C Act.

1.1.18 "**Effective Date**" has the meaning set forth in the preamble hereto.

1.1.19 "**Facility**" means Almac's facility located at Seagoe Industrial Estate, Craigavon, Northern Ireland or any other facility approved in writing by the Parties for the Manufacture of the Product.

1.1.20 "**FDA**" means the United States Food and Drug Administration or any successor entity thereto.

1.1.21 "**FD&C Act**" means the Federal Food, Drug and Cosmetic Act, as the same may be amended or supplemented from time to time.

1.1.22 "**Firm Forecast Period**" has the meaning set forth in Section 2.2.

1.1.23 "**Force Majeure Event**" has the meaning set forth in Section 16.1.

1.1.24 "**Indemnified Party**" has the meaning set forth in Section 13.1.3.

1.1.25 "**Indemnifying Party**" has the meaning set forth in Section 13.1.3.

1.1.26 "**Initial Term**" means the [* * *] period commencing on the Effective Date.

1.1.27 "**Inspection Period**" has the meaning set forth in Section 9.2.1.

1.1.28 "**Invention**" means any development, information, invention, improvement, know-how, data or intellectual property, whether or not reduced to practice and whether or not patentable.

1.1.29 "**Joint Technology**" has the meaning set forth in Section 11.1.3.

1.1.30 "**Laboratory**" has the meaning set forth in Section 9.3.1.

1.1.31 "**Latent Defect**" shall mean any defect in a Product that is not reasonably discoverable through Paratek's (or Paratek's designee's) normal incoming goods inspection verification methods and procedures, such methods and procedures to be in accordance with the Quality Agreement.

1.1.32 "**Losses**" has the meaning set forth in Section 13.1.1.

1.1.33 "**Manufacture**," "**Manufactured**" or "**Manufacturing**" means all activities involved in the production of the Product to be supplied to Paratek or its Affiliates hereunder, including the preparation, formulation, finishing, testing, storage and packaging for shipment of the Product and the handling, storage and disposal of any residues or wastes generated thereby.

1.1.34 "**Manufacturing Information**" means all information, instructions and data relating to the Manufacture of the Product provided by Paratek to Almac hereunder, including the Specifications, Methods of Analysis and all formulas and processes.

1.1.35 "**Materials**" means all materials, including all raw materials, and ingredients required for the Manufacture of the Product, the specifications for which are set out in the Specifications.

1.1.36 "**Methods of Analysis**" means the methods of analysis for the Product set forth in the Quality Agreement.

1.1.37 **[* * *]**

1.1.38 **[* * *]**

1.1.39 **[* * *]**

1.1.40 "**Paratek**" has the meaning set forth in the preamble hereto.

1.1.41 "**Paratek Improvement**" means any Invention [* * *].

1.1.42 "**Paratek Licensee**" means any Third Party to whom Paratek grants a license or a right to research, develop, make, have made, use, sell, have sold, import, export or otherwise exploit the Product or a Paratek Product.

1.1.43 "**Paratek Materials**" means the Materials of Paratek that are required by Almac for the Manufacture of the Product or the performance of Services for Paratek and are supplied by Paratek to Almac pursuant to this Agreement. A description of all Paratek Materials is set forth on Exhibit B.

1.1.44 "**Paratek Product**" means any pharmaceutical product owned, controlled or sold by Paratek, its Affiliates or Paratek Licensees that incorporates or is derived from the Product.

1.1.45 "**Paratek Representatives**" has the meaning set forth in Section 13.1.1.

1.1.46 "**Paratek Technology**" means (a) all intellectual property and embodiments thereof, including any Inventions, owned by Paratek as of the Effective Date that are not Joint Technology and (b) the Paratek Improvements.

1.1.47 "**Party**" and "**Parties**" have the meaning set forth in the preamble hereto.

1.1.48 "**Person**" means any natural person, corporation, general partnership, limited partnership, proprietorship, other business organization, trust, union, association or governmental authority.

1.1.49 "**Product**" has the meaning set forth in the recitals hereto.

1.1.50 "**Quality Agreement**" means the written Quality Agreement between the Parties dated as of December 2, 2016.

1.1.51 "**Recall**" means any recall, withdrawal or corrective action (whether voluntary or mandatory) or issue of an "NDA Field Alert" (as defined in 21 CFR 314.81).

1.1.52 "**Regulatory Approval**" means all authorizations by the competent Regulatory Authorities which are required for the manufacture, marketing, promotion, pricing and sale of the Product in a given country or regulatory jurisdiction in the Territory.

1.1.53 "**Regulatory Authority**" means any national, supra-national, regional, state or local regulatory agency, department, bureau, commission, council or other governmental entity involved in the granting of Regulatory Approval for the Product in the Territory.

1.1.54 "**Rejection Notice**" has the meaning set forth in Section 9.2.1.

1.1.55 "**Renewal Term**" means each consecutive [* * *] period commencing on the expiration of the Initial Term or immediately preceding Renewal Term, until this Agreement is terminated pursuant to Article 14.

1.1.56 "**Rolling Clinical Forecast**" has the meaning set forth in Section 2.2.

1.1.57 "**Rolling Commercial Forecast**" has the meaning set forth in Section 2.2.

1.1.58 "**Rolling Forecast**" means a Rolling Clinical Forecast or a Rolling Commercial Forecast, as applicable.

1.1.59 "**Scope of Work**" has the meaning set forth in Section 3.1.

1.1.60 "**Seizure**" means any action by FDA or any other Regulatory Authority to detain or destroy the Product or prevent the release of the Product.

1.1.61 "**Services**" has the meaning set forth in Section 3.1.

1.1.62 "**Services Agreement**" has the meaning set forth in Section 3.1.

1.1.63 [* * *]

1.1.64 "**Specifications**" means the specifications for the Product set forth in the Quality Agreement, as such may be amended from time to time in accordance with its terms.

1.1.65 "**Supply Price**" has the meaning set forth in Section 7.1.

1.1.66 "**Term**" means, in the aggregate, the Initial Term and all Renewal Terms, if any.

1.1.67 "**Territory**" means the United States of America and its territories and possessions and any other countries in the world added to the definition of "Territory" pursuant to Section 2.9.

1.1.68 "**Third Party**" means any Person other than Paratek, Almac and their respective Affiliates.

1.1.69 [* * *]

1.1.70 [* * *]

1.1.71 **[* * *]**

1.1.72 Construction of Certain Terms and Phrases. Unless the context of this Agreement otherwise requires, (i) words of any gender include each other gender; (ii) words using the singular or plural number also include the plural or singular number, respectively; (iii) the term "or" shall have the inclusive meaning of the term "and/or"; (iv) "including" and its cognates shall have the non-limiting meaning of "including, without limitation"; (v) the term "will" shall have the same meaning and import as the term "shall"; (vi) the terms "hereof," "herein," "hereby" and derivative or similar words refer to this entire Agreement; (vii) the terms "Article" or "Section" refer to the specified Article or Section of this Agreement; and (viii) Article and Section headings shall not affect the meaning or construction of any provision of this Agreement.

THIS EXHIBIT HAS BEEN REDACTED AND IS THE SUBJECT OF A CONFIDENTIAL TREATMENT REQUEST. REDACTED MATERIAL IS MARKED WITH [* * *] AND HAS BEEN FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION.

2. GENERAL; FORECASTS AND ORDERS

2.1 Manufacture. Almac shall Manufacture, package and supply the Product to Paratek or Paratek's designee in such quantities and at such times as ordered by Paratek, in accordance with the Specifications and otherwise pursuant to the terms of this Agreement in exchange for payment of the applicable Supply Price for such Product. During the Term, Almac shall maintain the resources necessary to Manufacture the Product pursuant to the terms of this Agreement.

2.2 Forecasts. Within [* * *] after the Effective Date, Paratek shall submit to Almac a forecast of clinical supply of the Product that Paratek anticipates ordering from Almac during the [* * *] period (broken down by month and, if applicable, country in the Territory) following the date of such forecast and Paratek shall update such forecast on a rolling [* * *] basis every [* * *] thereafter (each, a "**Rolling Clinical Forecast**") until Paratek no longer requires any clinical supply of the Product. Beginning [* * *] prior to the anticipated launch of a Paratek Product in the Territory and for the remainder of the Term, Paratek shall submit to Almac a forecast of commercial supply of the Product that Paratek anticipates ordering from Almac during the [* * *] period (broken down by month and, if applicable, country in the Territory) following the date of such forecast and Paratek shall update such forecast on a rolling [* * *] basis every [* * *] thereafter (each, a "**Rolling Commercial Forecast**"), provided that Paratek shall provide an updated Rolling Commercial Forecast within [* * *] after such Paratek Product receives Regulatory Approval by the applicable Regulatory Authority in a country in the Territory. Paratek shall place purchase orders for at least the quantity of the Product specified in the first [* * *] of each such Rolling Clinical Forecast or Rolling Commercial Forecast (such period, the "**Firm Forecast Period**") and the remaining [* * *] of such forecast shall be a good faith estimate and shall be non-binding, provided that Almac may place orders with its suppliers for raw materials or packaging materials as reasonably necessary in order to Manufacture the quantities of the Product specified in the first [* * *] of each Rolling Clinical Forecast or Rolling Commercial Forecast. In the event that Paratek and Almac agree that Almac or its Affiliate will perform the secondary packaging of the Product, the Parties will discuss, in good faith, amending the Firm Forecast Period for purchase orders of Product to appropriately reflect such additional service to be conducted in an Almac facility in the United States.

2.3 Orders. Paratek may submit purchase orders for the Product to Almac from time to time during the Term and at least [* * *] prior to the requested date of delivery. Each purchase order shall specify (a) the quantity of the Product ordered for delivery; and (b) the delivery date for that order. Almac shall Manufacture and supply the Product in accordance with this Agreement and each applicable purchase order. [* * *] after receiving any purchase order from Paratek, Almac shall be deemed to have accepted such purchase order if such purchase order has not been rejected by Almac in accordance with the terms and conditions of this Agreement. On or prior to such acceptance, Almac shall provide Paratek with a Manufacturing schedule for the Product subject to such purchase order. With respect to any of the [* * *] in the then most recent Firm Forecast Period, Almac may reject, by written notice to Paratek, any portion of any purchase order to the extent that fulfilling the entirety of such purchase order would cause the aggregate number of units of the Product supplied by Almac during such month to exceed [* * *] of the units of such Product forecast for such month in the applicable Rolling Forecast; provided, however, that Almac will use its reasonable efforts to, but shall not be obligated to, supply such Product in excess of such [* * *].

2.4 Cancellations. Paratek may cancel any firm purchase order (in whole or in part) at any time prior to the delivery for any quantity of the Product that Almac has not completed Manufacturing pursuant to such purchase order at the time that notice of cancellation is received by Almac. If, at the time of Paratek's cancellation of a purchase order:

2.4.1 it is more than [* * *] prior to the delivery date of such purchase order, Paratek will reimburse Almac for [* * *];

2.4.2 it is less than [* * *] prior to the delivery date of such purchase order, but Almac has not commenced Manufacture of Products pursuant to such purchase order, Paratek will reimburse Almac for [* * *]; or

2.4.3 it is less than [* * *] prior to the delivery date of such purchase order, and Almac has commenced Manufacture of Products pursuant to such purchase order, Paratek shall reimburse Almac for [* * *].

2.5 Materials. Almac shall be responsible for obtaining the Materials for the Manufacture of Products. The cost of Materials paid by Almac and incurred in accordance with this Agreement shall be included in the prices set out in the Scope of Work to the extent such costs are related to Services and included in the Supply Price to the extent such costs are related to Products; provided, however, that the costs for any Material shall never be double-counted under this Agreement.

2.6 Paratek Materials. Paratek shall use commercially reasonable efforts to deliver the Paratek Materials no less than [* * *] prior to the intended delivery date of the Products incorporating such Paratek Materials; [* * *]. In the event that Paratek is unable to deliver the Paratek Materials [* * *] prior to the intended delivery date, the Parties shall discuss in good faith whether any changes to the delivery date and/or costs of the Services are necessary as a result of such delay. Paratek will deliver the Paratek Materials to Almac [* * *]. Paratek shall be responsible for ensuring that the Paratek Materials have been manufactured in accordance with cGMP and, unless otherwise set forth herein, shall provide the Paratek Materials to Almac free of charge.

2.7 Priority of Supply. Almac and its Affiliates shall maintain capacity in the Facility to fill Paratek's forecasted orders for the Product in a manner consistent with this Agreement, including purchase orders placed hereunder.

2.8 Equipment and Tools. In no event shall Almac sell, license, transfer or otherwise dispose of any equipment or tools funded by Paratek, including any transfer of such equipment or tools to another facility of Almac or its Affiliates, without Paratek's prior written consent.

2.9 Territory Expansion. At any time during the Term, Paratek may, by written notice to Almac, request to expand the Territory under this Agreement to include one (1) or more additional countries or territories and Almac's consent to such expansion shall not be unreasonably withheld, conditioned or delayed. Promptly following such notification, the Supply and Quality Committee shall discuss any requirements to accommodate such expansion of the Territory (including changes to costs) and if the Parties agree on the identity and implementation of such requirements, the Parties shall execute an amendment that (a) amends the definition of "Territory" under Section 1.1.67 to include such

additional countries or territories and (b) modifies the provisions of this Agreement and/or the Quality Agreement, as necessary in order to reflect the regulatory requirements of such additional countries or territories. For clarity, Paratek shall not be obligated to amend the definition of Territory at any point during the Term.

2.10 Supply to Paratek Licensees. In the event Paratek delivers a written request to Almac requesting that Almac engage in negotiations with a Paratek Licensee on the terms of a definitive agreement pursuant to which Almac would Manufacture and supply the Product to such Paratek Licensee or a designee of a Paratek Licensee, Almac shall use commercially reasonable good faith efforts to negotiate and execute such agreement on substantially similar terms to the terms of this Agreement.

3. SERVICES

3.1 Scopes of Work. Almac shall perform for Paratek certain services related to the development, technology transfer and Manufacturing (including scale-up and validation) of the Product (the "**Services**") as set forth in one (1) or more statements of work to be mutually agreed by the Parties and attached as addenda to this Agreement (each, a "**Scope of Work**"). Each Scope of Work shall be automatically incorporated by reference into and governed by the terms and conditions of this Agreement. A Scope of Work shall include the scope of Services to be provided by Almac, any deliverables or milestones in connection with such Services, the fees payable for such Services, the applicable standard of service to be provided and any other relevant terms and conditions not already set forth in this Agreement. In the event of any conflict between this Agreement and any Scope of Work, the terms of this Agreement shall govern unless otherwise mutually agreed by the Parties in writing. The Parties may amend the activities or costs set forth in any Scope of Work by mutual written agreement. [* * *].

3.2 Fees. As part of a Scope of Work, the Parties will negotiate reasonable costs for the Services to be performed by Almac for Paratek under such Scope of Work. Almac shall submit a cost estimate to Paratek for any such Service, and shall not commence any such Service until Paratek provides written notice of its approval of such cost estimate (or the Parties otherwise mutually agree on the costs for such Service). As a general principle, any such cost estimate shall reflect [* * *].

3.3 Payment. Almac shall invoice Paratek for any Services upon completion of such Services. Paratek shall pay Almac for such Services within [* * *] from the date of invoice; provided that, pending resolution regarding any disagreement between the Parties as to the amount of such invoice, Paratek is not obligated for any payment of the disputed amount with respect to such Services. Any invoice submitted to Paratek by Almac shall be sent via e-mail to a Paratek-designated e-mail address (in addition to any other forms of delivery) and the date of any invoice shall be dated within [* * *] of the date of such invoice's e-mail delivery to Paratek.

4. SUPPLY AND QUALITY COMMITTEE

4.1 Composition. The Parties agree that the Supply and Quality Committee shall be set up when the Parties agree in good faith that there is reasonable need to have a Supply and Quality Committee due to the scale or nature of the activities being conducted under this Agreement. The Supply and Quality Committee shall be comprised of an equal number of representatives of each Party. Each Party shall appoint its respective representatives to the Supply and Quality Committee within thirty (30) days of agreement between the Parties on the establishment of the Supply and Quality Committee, and each Party, from time to time, may substitute one (1) or more of its representatives, in its sole discretion, effective upon notice to the other Party of such change. All Supply and Quality Committee representatives shall have appropriate expertise, seniority, decision-making authority and relevant expertise in matters related to the Manufacturing and supply of the Product. For clarity, the Parties may, by mutual consent, elect to use the Supply and Quality Committee under the Quality Agreement as the Supply and Quality Committee under this Agreement.

4.2 Meetings. The Supply and Quality Committee shall meet as necessary to carry out its duties under Section 4.3, but no more often than once per Calendar Quarter, unless otherwise agreed by its members. The Supply and Quality Committee shall meet in-person at Paratek or Almac or, alternatively, by means of teleconference, videoconference or other similar communications equipment.

4.3 Supply and Quality Committee Responsibilities. The Supply and Quality Committee shall provide a forum for the discussion, coordination and review of all activities under this Agreement (including under any Scope of Work), and shall in particular have responsibility for the following: (a) reviewing key metrics for the Product's production and quality, and reviewing and monitoring any required remediation with respect to production and quality for the Product; (b) reviewing Almac's capacity and short-term and long-term planning for clinical and commercial supply of the Product, including anticipating any capacity shortfalls and discussing the cost allocation of investments required to increase capacity or improve efficiencies; (c) reviewing and discussing draft Scopes of Work; (d) discussing the cost allocation, if any, of extraordinary costs incurred by Almac in connection with the Manufacture of the Product or provision of Services; and (e) establishing resource priorities and resolving resource conflicts.

4.4 Decision-Making. All of each Party's representatives on the Supply and Quality Committee shall collectively have one (1) vote with respect to decisions before the Supply and Quality Committee. All decisions of the Supply and Quality Committee must be made by unanimous consent, which shall be documented in written minutes of the Supply and Quality Committee and signed by a representative of each Party.

5. [* * *] ALTERNATIVE SUPPLY

5.1 [* * *]

5.2 Alternative Supply. At any time during the Term, Paratek may elect to qualify one (1) or more alternative manufacturing facilities (whether owned by a Third Party, Paratek or by one of Paratek's Affiliates) to Manufacture the Product (each, a "**Backup Supplier**"). Paratek shall be responsible for any and all costs associated with qualifying Backup Suppliers. Almac shall use

commercially reasonable efforts to cooperate with the qualification of any Backup Supplier, including: (a) providing documentation reasonably required to enable technology transfer of all Almac Technology, Joint Technology and, to the extent in its possession, Paratek Technology, necessary or useful for the Manufacture of the Product; provided that, to the extent that such technology and know-how constitutes Almac Confidential Information it shall be subject to the provisions of Article 15 and Paratek's designated alternative supplier shall be required to enter into a confidentiality agreement with Almac containing substantially the same terms as Article 15. The Parties shall discuss in good faith any requirement for additional consulting services related to the Manufacture, quality control and quality assurance of the Product. Paratek shall reimburse Almac for performing such services described in the preceding sentence at [* * *] within [* * *] of invoice.

6. DELIVERY; FAILURE TO SUPPLY

6.1 Delivery. All Product shall be delivered [* * *]. Almac will notify Paratek at least five (5) Business Days prior to any shipment of the Product. Delivery shall be made at such time as the Products are placed at the disposal of Paratek at Almac's Facility. If requested by Paratek, Almac shall assist Paratek in arranging shipment of the Product to Paratek or Paratek's designated location in accordance with Paratek's instructions and at Paratek's risk and expense. All shipments will be subject to the standard terms and conditions of the selected courier and Almac shall have no liability to Paratek for any loss, damage or delay in a shipment attributable to the selected courier or any Third Party.

6.2 [* * *]

6.3 Delivery Documentation. Delivery of the Products shall be made together with the relevant batch documentation as required for release and in accordance with the Quality Agreement, unless otherwise agreed in writing between the Parties from time to time.

6.4 Manufacturing Date. Almac shall schedule its Manufacturing operations so that, unless otherwise agreed in writing (Paratek's agreement not to be unreasonably withheld, conditioned or delayed), at least [* * *] of the shelf life of the Products will remain on delivery of the Products.

6.5 Risk of Loss. [* * *]

6.6 Delay in Services Caused by Paratek. If Paratek causes any delay to Almac's provision of the Services or Manufacture of Product, for reasons within Paratek's control including but not limited to delay in providing information reasonably requested by Almac pursuant to this Agreement or a delay in the delivery of any Paratek Materials pursuant to this Agreement, [* * *]. [* * *].

6.7 Notice of Failure to Supply. If Almac is unable or anticipates that it will be unable to supply Product meeting Paratek's forecasted requirements in a timely manner at any time during the Term, Almac shall provide prompt written notice to Paratek. Following such notice, the Parties shall discuss in good faith how to prevent or mitigate such inability to supply, including [* * *]. Almac shall consider in good faith any reasonable suggestions of Paratek to prevent or mitigate such inability to supply, the costs associated with such suggestions to be allocated as mutually agreed by the Parties.

6.8 [* * *]

THIS EXHIBIT HAS BEEN REDACTED AND IS THE SUBJECT OF A CONFIDENTIAL TREATMENT REQUEST. REDACTED MATERIAL IS MARKED WITH [* * *] AND HAS BEEN FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION.

7. PRICE AND PAYMENT

7.1 Supply Price. The price of the Product to be sold to Paratek during the Term shall be as set forth in Exhibit A attached hereto, subject to adjustment as set forth in Section 7.2 (such price for the Product, the "**Supply Price**").

7.2 Price Adjustments. Beginning prior to the [* * *], the Supply Price for the Product for the next Calendar Year shall be adjusted by mutual agreement of the Parties on a yearly basis at least [* * *] prior to the beginning of such Calendar Year, such adjustment to reflect: [* * *]. Almac will promptly provide to Paratek for Paratek's review any documentation necessary in order to substantiate any adjustment to the Supply Price for a Product, such materials to be considered Almac's Confidential Information hereunder.

7.3 Payment. Almac shall invoice Paratek upon delivery of the Products, in accordance with the delivery provisions set forth at Section 6.1 above and shall only charge Paratek for Products that are shipped to Paratek or Paratek's designee pursuant to this Agreement. Paratek shall pay Almac for all supplied quantities of conforming Products within [* * *] from the date of invoice; provided that, pending resolution regarding any disagreement between the Parties as to conformance of a Product to the requirements of this Agreement or the Quality Agreement, Paratek is not obligated for any payment with respect to any Product Paratek believes to be non-conforming.

7.4 Taxes and Other Charges. All Product prices are stated exclusive of VAT or other similar taxes, Third Party shipping costs and customs duties. Paratek and Almac shall cooperate to eliminate or minimize the amount of any such taxes imposed on the transactions contemplated in this Agreement. Paratek is not responsible for any penalties or interest related to the failure of Almac to collect sales, use, VAT or similar taxes.

8. COMPLIANCE, QUALITY AND ENVIRONMENTAL

8.1 Compliance with Law. Almac shall conduct its Manufacturing operations hereunder in a safe and prudent manner, in compliance with cGMP and all other applicable laws and regulations of the United States and European Union (including, but not limited to, those dealing with occupational safety and health, those dealing with public safety and health, those dealing with protecting the environment, and those dealing with disposal of wastes) ("**Applicable Laws**"), and in compliance with all applicable provisions of this Agreement and the Quality Agreement. Almac shall obtain all necessary registrations and permits pertaining to activities contemplated by this Agreement and the Quality Agreement. To the extent necessary for the Regulatory Approval of the Product, Almac shall permit the inspection of the Facility by Regulatory Authorities and shall supply all documentation and information requested by Paratek to obtain or maintain Regulatory Approval of the Product.

8.2 Manufacturing Quality. Almac shall obtain all Materials from Almac's existing suppliers or such other suppliers as may be approved in accordance with the terms of the Quality Agreement, and shall pay such suppliers on a timely and current basis. All Product shall be Manufactured at the Facility. [* * *].

9. QUALITY AUDITS; TESTING AND INSPECTION OF THE PRODUCT

9.1 Inspection and Auditing Rights. Paratek and its representatives shall have the right, at Paratek's expense, to audit, inspect and observe the Facility, the performance by Almac of its obligations under this Agreement and the Quality Agreement, Almac's compliance with Applicable Laws in the performance of its obligations under this Agreement and the Quality Agreement, and the handling, Manufacture, testing, inspection, storage, disposal and transportation of the Product by Almac and its permitted subcontractors, during normal business hours and upon at least [* * *] prior notice unless otherwise set forth in the Quality Agreement. Almac shall make available to Paratek all relevant records and reports during such audit or inspection. Almac agrees to respond to Paratek's audit findings within [* * *] of receipt of Paratek's audit report (such response may not be final but shall be responsive to the findings), to take prompt corrective action to remedy any observed violations of the terms of this Agreement, the Quality Agreement or of Applicable Laws and to be responsive to the recommendations contained therein. Such audits may be conducted no more than [* * *] at Paratek's expense, provided that Paratek may also conduct follow-up audits or inspections at any time or times during a Calendar Year that are directed at [* * *]. The costs associated with any follow-up audit by Paratek shall be discussed in good faith and agreed between the Parties in advance.

9.2 Product Rejection and Inspection.

9.2.1 Paratek shall have a period of [* * *] from the date of delivery of a shipment of the Product, pursuant to Section 6.1 (the "**Inspection Period**"), to inspect, or cause to have inspected by a Third Party designated by Paratek, such shipment of the Product to determine whether such shipment conforms to Specifications [* * *]. [* * *].

9.2.2 [* * *]

9.3 Independent Testing.

9.3.1 [* * *]

9.3.2 [* * *]

9.3.3 [* * *]

9.4 [* * *]

9.5 Samples and Record Retention. Almac shall retain records and retention samples of each Batch of Product for at least [* * *] and shall make the same available to Paratek upon request. After the required holding period, Almac shall provide written notice to Paratek and, at Paratek's direction, shall either destroy or otherwise disposition such retention samples at Almac's expense. During and after the Term, Almac shall assist Paratek with respect to any complaint, issue or investigation relating to the Product.

9.6 Government Inspections. Each Party shall promptly notify the other Party if such Party receives notice from a Regulatory Authority regarding a cGMP investigation or other inspection directly related to the Product. If Almac receives advance notice of any such investigation, inspection or visit by any Regulatory Authority to inspect the Facility or review the Manufacture of the Product, Almac shall permit, to the extent permitted by Applicable Law and reasonably practicable, Paratek or its representatives to be present during such visit, at Paratek's expense. Upon Paratek's request, Almac shall provide Paratek with a copy of any report issued by such Regulatory Authority following such visit.

9.7 Recalls and Seizure.

9.7.1 Each Party shall keep the other Party promptly and fully informed of any notification or other information whether received directly or indirectly which might result in the Recall or Seizure of Paratek Product(s). If either Party determines that it is necessary to Recall any Paratek Product, it shall immediately notify the other Party and Almac will collaborate with Paratek in connection with any Recall or Seizure. In any such situation, Paratek shall have the right to make all final decisions regarding a Recall or Seizure of Paratek Products.

9.7.2 [* * *]

9.7.3 Paratek shall be liable for the out-of-pocket costs and expenses actually incurred by Almac as a result of any Recall or Seizure to the extent such Recall or Seizure results from [* * *].

10. MANUFACTURING CHANGES

10.1 Voluntary Changes.

10.1.1 Paratek may propose any change to the Manufacturing process, the Manufacturing equipment, the packaging of the Product, the Specifications, the Materials, the sources of Materials or the Methods of Analysis by delivering a written notice to Almac of such proposed change. Within thirty (30) Business Days of receiving such notice (or such longer time as agreed between the Parties), Almac shall inform Paratek of any and all reasonable costs associated with implementing such change and if Paratek agrees to reimburse Almac for such costs, Almac shall implement such change as promptly as practicable in consultation in Paratek.

10.1.2 Almac shall not make any changes to the Manufacturing process, the packaging of the Product, the Specifications, the Materials, the sources of Materials or the Methods of Analysis except in accordance with the provisions of the Quality Agreement.

10.2 Required Changes. If FDA or any other Regulatory Authority requests or requires any change in the Manufacturing process, the Manufacturing equipment, the Specifications, the Materials, the source of Materials or Methods of Analysis with respect to the Product, the Parties shall promptly (but in no event more than fifteen (15) Business Days after receipt of the Regulatory Authority's notice) discuss an implementation plan for such change, including the allocation of any associated reasonable costs for such change. If the Parties, after discussing the proposed change in reasonable good faith negotiations, cannot agree on the plan for implementing such change, the costs (or cost allocation) of

implementing such change or Almac is technically or financially incapable of making such change, [* * *]. For clarity, in no event shall Almac be obligated to, with respect to such a change required or requested by a Regulatory Authority, (a) devote resources to implement such change if such change would be financially or operationally infeasible following the Parties' good faith negotiations or (b) continue Manufacturing any Product if such Manufacturing would not be in compliance with Applicable Laws or cGMP due to such change. Each Party agrees to promptly forward to the other copies of any written communication received by such Party from the FDA or any other Regulatory Authority that may affect the Manufacture or supply of the Product as contemplated herein.

11. INTELLECTUAL PROPERTY

11.1 Ownership.

11.1.1 Paratek shall have sole ownership of all Paratek Technology, including all Paratek Improvements, and shall have the sole right to prosecute, maintain and enforce such Paratek Technology in its sole discretion. If, at any time before or during the Term, Almac owns (solely or jointly) any Paratek Improvements, Almac agrees to assign and does hereby assign all right, title and interest in and to such Paratek Improvements to Paratek. Almac shall, and shall cause its Affiliates to, execute and deliver all requested assignments and other documents, and take such other actions as Paratek may reasonably request, in order to perfect and enforce Paratek's rights in the Paratek Improvements.

11.1.2 Paratek acknowledges that the Almac Technology, as of the Effective Date, may include certain proprietary inventions, processes, know-how, trade secrets, methods, approaches, analyses, improvements, other intellectual properties and other assets including, but not limited to, clinical trial management analyses, analytical methods, procedures and techniques, computer technical expertise and proprietary software, and technical and conceptual expertise in the area of manufacture, packaging and supplying products, in each case, that have been developed independently by Almac without the benefit of any information provided by Paratek or any access to the Paratek Technology. Almac shall have sole ownership of all Almac Technology, including all Almac Improvements, and shall have the sole right to prosecute, maintain and enforce such Almac Technology in its sole discretion. If, at any time before or during the Term, Paratek owns (solely or jointly) any Almac Improvements, Paratek agrees to assign and does hereby assign all right, title and interest in and to such Almac Improvements to Almac. Paratek shall, and shall cause its Affiliates to, execute and deliver all requested assignments and other documents, and take such other actions as Almac may reasonably request, in order to perfect and enforce Almac's rights in the Almac Improvements.

11.1.3 Except as expressly set forth in this Section 11.1, each Party shall own all right, title and interest in and to: (a) any and all Inventions made solely by its or its Affiliates' employees, staff, agents or independent contractors in connection with their activities under this Agreement; (b) any and all patent rights claiming any Invention described in clause (a) of this Section 11.1.3; and (c) any and all know-how embodied by or in any Invention described in clause (a) of this Section 11.1.3. Except as expressly set forth in this Section 11.1, the Parties shall jointly own all right, title and interest in and to: (i) any and all Inventions made jointly by the Parties or their respective Affiliates or their or their Affiliates' employees, staff, agents or independent contractors in connection with their activities under this Agreement; (ii) any and all patent rights claiming any Invention described in clause (i) of this Section 11.1.3; and (iii) any and all know-how embodied by or in any Invention described in clause (i)

of this Section 11.1.3 (such Inventions, patent rights and know-how described in clauses (i) through (iii), the "**Joint Technology**"). Subject to the license grants set forth in this Agreement, each Party shall be free to exploit, either itself or through the grant of licenses to Third Parties (which Third Party licenses may be further sublicensable), Joint Technology, throughout the world without restriction, without the need to obtain further consent from the other Party, and without any duty to account or payment of any compensation to the other Party. Paratek shall have the sole right to prosecute, maintain and enforce any patent rights within the Joint Technology, in its sole discretion. Inventorship shall be determined in accordance with United States patent laws.

11.2 Licenses.

11.2.1 Subject to the terms and conditions of this Agreement, during the Term, Paratek hereby grants to Almac a non-exclusive, worldwide, non-transferable, non-sublicensable, royalty-free license under the Paratek Technology, including the Paratek Improvements, solely to the extent necessary for Almac to perform its obligations under this Agreement and the Quality Agreement, for the sole purpose of performing such obligations.

11.2.2 [* * *]

11.3 Manufacturing Process Transfer. Paratek shall have the right, on an annual basis during the Term, to conduct an audit of Almac's Manufacturing process with respect to the Products in order to identify any updates to the technology used in, or any other improvements to, such Manufacturing process. During the Term, upon Paratek's reasonable request, Almac shall transfer to Paratek all Almac Technology, Paratek Improvements and Joint Technology in Almac's possession and not previously transferred to Paratek, for the purpose of enabling Paratek to exercise the license set forth in Section 11.2.2.

11.4 Employee Invention Assignment. Almac acknowledges and agrees that, with respect to any past, current or future employee, staff, contractor, subcontractor or other agent of Almac or its Affiliates who has conducted services or activities related to the development or Manufacture of Products for or to Paratek, Almac has entered into a binding written arrangement(s) with each such person that requires that such person assign to Almac all of its right, title and interest in and to any inventions (including, without limitation, knowhow, improvements, ideas, information, materials and processes) and all intellectual property rights therein that such person, alone or jointly with others, conceives, develops or reduces to practice during their period of employment or work with Almac or its Affiliate.

11.5 [†]

12. REPRESENTATIONS AND WARRANTIES

12.1 Representation and Warranties of Each Party. Each of Paratek and Almac hereby represents, warrants and covenants to the other Party hereto as follows:

12.1.1 it is a corporation or entity duly organized and validly existing under the laws of the state or other jurisdiction of incorporation or formation;

12.1.2 the execution, delivery and performance of this Agreement by such Party have been duly authorized by all requisite corporate action and do not require any shareholder action or approval;

12.1.3 it has the power and authority to execute and deliver this Agreement and to perform its obligations hereunder;

12.1.4 the execution, delivery and performance by such Party of this Agreement and its compliance with the terms and provisions hereof do not and will not conflict with or result in a breach of any of the terms and provisions of or constitute a default under (i) a loan agreement, guaranty, financing agreement, agreement affecting a product or other agreement or instrument binding or affecting it or its property; (ii) the provisions of its charter or operative documents or by laws; or (iii) any order, writ, injunction or decree of any court or governmental authority entered against it or by which any of its property is bound; and

12.1.5 it shall comply with all applicable laws and regulations relating to its activities under this Agreement.

12.2 Representations and Warranties of Almac. Almac hereby further represents and warrants to Paratek as follows:

12.2.1 the Product at the time of delivery to Paratek (i) has been Manufactured, stored, packaged and shipped in accordance with cGMP and Applicable Laws; (ii) conforms to the Specifications, is, to the best of its knowledge, free from defects and is merchantable; (iii) is not adulterated or misbranded within the meaning of the FD&C Act; and (iv) has been stored and handled in accordance with the procedures set forth under this Agreement and the Quality Agreement;

12.2.2 as of immediately prior to the delivery of the Product to Paratek, Almac has good and marketable title to such Product and such Product is free from all liens, charges, encumbrances and security interests; and

12.2.3 Almac does not, at any time from and after the Effective Date, retain or use the services of (a) any person debarred under 21 U.S.C. § 335a or (b) any person who has been convicted of a crime as defined under the FD&C Act, in each case in any capacity associated with or related to the Manufacture or supply of the Product or any service rendered to Paratek under this Agreement or the Quality Agreement.

12.3 Representation by Legal Counsel. Each Party hereto represents that it has been represented by legal counsel in connection with this Agreement and acknowledges that it has participated in the drafting hereof. In interpreting and applying the terms and provisions of this Agreement, the Parties agree that no presumption shall exist or be implied against the Party which drafted such terms and provisions.

13. INDEMNIFICATION, LIMITATION OF LIABILITY AND INSURANCE

13.1 Indemnification.

13.1.1 Almac shall indemnify and hold harmless Paratek, its directors, officers, employees and agents (collectively, the "**Paratek Representatives**") from and against all damages, losses, liabilities, expenses, claims, demands, suits, penalties or judgments or administrative or judicial orders (including reasonable attorneys' fees and expenses reasonably incurred) (collectively, "**Losses**") that are incurred by the Paratek Representatives to, from or in favor of Third Parties to the extent resulting from or arising out of [* * *], except, in each case ((i) through (v)), to the extent Paratek has an obligation to indemnify any Almac Representative pursuant to Section 13.1.2. The provisions of this Section shall survive the termination or expiration of this Agreement.

13.1.2 Paratek shall indemnify and hold harmless Almac, its directors, officers, employees and agents (collectively, the "**Almac Representatives**") from and against all Losses that are incurred by the Almac Representatives to, from or in favor of Third Parties to the extent resulting from or arising out of [* * *], except, in each case ((i) through (iii)), to the extent Almac has an obligation to indemnify any Paratek Representative pursuant to Section 13.1.1. The provisions of this Section shall survive the termination or expiration of this Agreement.

13.1.3 Each Party and its directors, officers, employees or agents (an "**Indemnified Party**") shall promptly notify the other Party (the "**Indemnifying Party**"), in writing, of any claim asserted or threatened against such Indemnified Party for which such Indemnified Party is entitled to indemnification hereunder from the Indemnifying Party. With respect to any such claim the Indemnified Party shall reasonably cooperate with and provide such reasonable assistance to such Indemnifying Party as such Indemnifying Party may reasonably request, and all reasonable out-of-pocket costs of such assistance shall be paid by the Indemnifying Party. Such reasonable assistance may include providing copies of all relevant correspondence and other materials that the Indemnifying Party may reasonably request. The obligations of an Indemnifying Party under Sections 13.1.1 and 13.1.2 are conditioned upon the delivery of written notice to the Indemnifying Party of any asserted or threatened claim promptly after the Indemnified Party becomes aware of such claim, provided that the failure of the Indemnified Party to give such notice or any delay thereof shall not affect the Indemnified Party's right to indemnification hereunder, except to the extent that such failure or delay impairs the Indemnifying Party's ability to defend or contest any such claim. The Indemnifying Party shall have the right to assume the defense of any suit or claim for which indemnification is sought. If the Indemnifying Party defends the suit or claim, the Indemnified Party may participate in (but not control) the defense thereof at its sole cost and expense. An Indemnifying Party may not settle a suit or claim, without the consent of the Indemnified Party, if such settlement would (a) impose any monetary obligation on the Indemnified Party for which indemnification is not provided hereunder, (b) not include a full release of claims with respect to the Indemnified Party, (c) require the Indemnified Party to submit to an injunction or (d)

otherwise limit the Indemnified Party's rights under this Agreement. Any payment made by an Indemnifying Party to settle any such suit or claim shall be at its (or its insurer's) own cost and expense.

13.2 Limitations on Liability.

13.2.1 [* * *]

13.2.2 [* * *]

13.2.3 [* * *]

13.2.4 [* * *]

13.2.5 Nothing in this Section 13.2 shall be deemed to exclude or limit the liability of either Party for any form of liability that may not be excluded or limited by law, including liability for fraud.

13.2.6 [* * *]

13.3 Insurance. Almac shall obtain and maintain insurance adequate to cover its obligations under this Agreement, to the extent such obligations are insurable. Without limiting the foregoing, Almac shall obtain and maintain the following kinds of insurance with the minimum limits set forth below.

Kind of Insurance	Minimum Limits
[* * *]	[* * *]
[* * *]	[* * *]
[* * *]	[* * *]

Upon request, Almac shall furnish insurance documentation as directed by Paratek, satisfactory in form and substance to Paratek, showing the above coverages, and providing for at least ten (10) days' prior written notice to Paratek by the insurance company of cancellation or modification. Coverage shall be procured with carriers [* * *].

14. TERM AND TERMINATION

14.1 Term. This Agreement shall commence on the Effective Date and continue, unless sooner terminated as set forth below in this Article 14 or in Article 16, for the duration of the Initial Term. After the Initial Term, this Agreement shall continue for successive Renewal Terms unless either Party shall have given written notice of termination of this Agreement not less than [* * *] prior to the expiration of the Initial Term or the then-current Renewal Term.

14.2 Termination for Material Breach. In the event that either Party breaches any of its material obligations under this Agreement, the other Party may deliver written notice of such breach to the breaching Party. If the breaching Party fails to cure such breach within [* * *] following its receipt of such notice, the non-breaching Party may terminate this Agreement by written notice to the breaching Party.

14.3 Termination for Insolvency. In the event that (i) either Party is declared insolvent or bankrupt by a court of competent jurisdiction; (ii) either Party files a voluntary petition of bankruptcy in any court of competent jurisdiction or (iii) this Agreement is assigned by either Party for the benefit of creditors, then the other Party may terminate this Agreement by delivering written notice of termination, effective immediately. Such termination shall not give rise to the payment of any penalty, damages or indemnity by the terminating Party.

14.4 Termination Due to Material Product Events. In the event that either [* * *] Paratek may terminate this Agreement by [* * *] written notice to Almac.

14.5 Effects of Termination.

14.5.1 Termination of this Agreement for any reason shall be without prejudice to the right of either Party to receive all payments accrued and unpaid at the effective date of such termination or expiration, without prejudice to the remedy of either Party in respect to any previous breach of any of the representations, warranties or covenants herein contained and without prejudice to any other provisions hereof which expressly or necessarily call for performance after such termination.

14.5.2 Upon termination of this Agreement for any reason, (i) at Paratek's request, Almac shall supply Paratek with its inventory of Materials, finished Product and/or works-in-progress, and Paratek shall pay Almac [* * *]; (ii) all Paratek Materials shall be returned to Paratek; and (iii) at Paratek's request, Almac shall return to Paratek all retention samples of the Product.

14.5.3 Promptly following either Party's delivery of a notice of termination to the other Party, upon Paratek's request, Almac shall cooperate with Paratek to transfer and transition supply of the Product to a Third Party supplier. [* * *]

14.5.4 [* * *]

14.6 Survival. The following provisions shall survive the expiration or termination of this Agreement: Article 1 (Definitions) (solely to the extent necessary to give meaning to other surviving sections), Section 6.1 (Delivery) and Section 6.5 (Risk of Loss) (in each case, solely with respect to Products and Materials remaining at the Facility following the effective date of expiration or termination), Section 7.3 (Payment) and Section 7.4 (Taxes and Other Charges) (in each case, solely with respect to payment obligations accruing prior to expiration or termination), Section 9.5 (Samples and Record Retention), Section 9.7 (Recalls and Seizures), Section 11.1 (Ownership), Section 11.2.2 [* * *], Section 11.5 [* * *], Section 13.1 (Indemnification), Section 13.2 (Limitations on Liability), Section 13.3 (Insurance) (for [* * *] following expiration or termination of this Agreement), Section 14.5 (Effects of Termination), this Section 14.6 (Survival), Article 15 (Confidentiality), Article 17 (Notices) and Article 18 (General). Without limiting the foregoing, all of Almac's obligations under this

Agreement relating to compliance with cGMP in respect of the Materials, Paratek Products and Products shall continue in force following expiration or termination of this Agreement according to the requirements of cGMP.

15. CONFIDENTIALITY

15.1 Nondisclosure Obligation. Each of Almac and Paratek shall use only in accordance with this Agreement and shall not disclose to any Third Party the Confidential Information received by it from the other Party pursuant to this Agreement, without the prior written consent of the other Party. The foregoing obligations shall survive for a period of [* * *] after the termination or expiration of this Agreement. These obligations shall not apply to Confidential Information that:

(i) is known by the receiving Party at the time of its receipt, and not through a prior disclosure by the disclosing Party, as documented by business records;

(ii) is at the time of disclosure or thereafter becomes published or otherwise part of the public domain without breach of this Agreement by the receiving Party;

(iii) is subsequently disclosed to the receiving Party by a Third Party who has the right to make such disclosure;

(iv) is developed by the receiving Party independently of the Confidential Information received from the disclosing Party and such independent development can be documented by the receiving Party; or

(v) is required by law, regulation, rule, act or order of any governmental authority or agency to be disclosed by a Party, provided that notice is promptly delivered to the other Party in order to provide an opportunity to seek a protective order or other similar order with respect to such Confidential Information and thereafter the disclosing Party discloses to the requesting entity only the minimum Confidential Information required to be disclosed in order to comply with the request, whether or not a protective order or other similar order is obtained by the other Party.

15.2 Permitted Disclosures. Each Party may disclose the other Party's Confidential Information to its employees and Affiliates on a need-to-know basis and to its agents or consultants to the extent required to accomplish the purposes of this Agreement; provided that the recipient Party obtains prior agreement from such agents and consultants to whom disclosure is to be made to hold in confidence and not make use of such Confidential Information for any purpose other than those permitted by this Agreement. Each Party will use at least the same standard of care as it uses to protect proprietary or confidential information of its own to ensure that such employees, agents, consultants, and Affiliates do not disclose or make any unauthorized use of the other Party's Confidential Information.

15.3 Disclosure of Agreement. Neither Almac nor Paratek shall release to any Third Party or publish in any way any non-public information with respect to the terms of this Agreement without the prior written consent of the other Party, which consent shall not be unreasonably withheld or delayed, provided that either Party may disclose the terms of this Agreement

(i) to the extent required to comply with applicable laws, including the rules and regulations promulgated by the United States Securities and Exchange Commission; provided, further, that prior to making any such disclosure, the Party intending to so disclose the terms of this Agreement shall (a) provide the non-disclosing Party with written notice of the proposed disclosure and an opportunity to review and comment on the intended disclosure which is reasonable under the circumstances and (b) shall seek confidential treatment for as much of the disclosure as is reasonable under the circumstances, including seeking confidential treatment of any information as may be requested by the other Party; or

(ii) to one (1) or more Third Parties and/or their advisors in connection with a proposed spin-off, joint venture, divestiture, merger or other similar transaction involving all, or substantially all, of the Products, assets or business of the disclosing Party to which this Agreement relates or to lenders, investment bankers and other financial institutions of its choice solely for purposes of financing the business operations of such Party; provided, further, that either (a) the other Party has consented to such disclosure or (b) such Third Parties have signed confidentiality agreements with respect to such information on terms no less restrictive than those contained in this Article 15.

15.4 Publicity. All publicity, press releases and other announcements relating to this Agreement or the transactions contemplated hereby shall be reviewed in advance by, and shall be subject to the approval of, both Parties.

16. FORCE MAJEURE AND SCIENTIFIC OBSTACLES

16.1 If the production, delivery, acceptance, or use of the Product specified for delivery under this Agreement, or the performance of any other obligation of one of the Parties hereunder is prevented, restricted or interfered with by reason of any cause or event beyond the reasonable control of such Party and without the fault or negligence of such Party (a "**Force Majeure Event**"), the Party so affected, upon prompt notice to the other Party, shall be excused from performing such obligation during the continuance of such Force Majeure Event. If such Force Majeure Event continues for a period of ninety [* * *] the other Party may terminate this Agreement by notice in writing, provided that such Force Majeure Event is continuing. The affected Party as a result of a Force Majeure Event shall use all reasonable efforts, at its own expense, to eliminate the Force Majeure Event and to resume performance as soon as practicable.

16.2 Without limiting Section 16.1, if it becomes apparent to either Party at any stage in the provision of the Services that it will not be possible to complete the Services for scientific or technical reasons beyond the reasonable control of either Party and without the fault or negligence of either Party,

the Parties shall use good faith efforts to agree on a plan for addressing the identified scientific or technical challenges. If such challenges are not resolved within the [* * *] period following mutual agreement upon such plan, [* * *].

17. NOTICES

17.1 Ordinary Notices. Correspondence, reports, documentation, and any other communication in writing between the Parties in the course of ordinary implementation of this Agreement shall be delivered by hand, sent by facsimile, overnight courier or by airmail to the employee or representative of the other Party who is designated by such other Party to receive such written communication at the address or facsimile numbers specified by such employee or representative.

17.2 Extraordinary Notices. Extraordinary notices and communications (including notices of termination, force majeure, material breach, change of address, requests for disclosure of Confidential Information, claims or indemnification) shall be in writing and sent to each Party by prepaid registered or certified airmail, or by facsimile confirmed by prepaid registered or certified airmail letter (and shall be deemed to have been properly served to the addressee upon receipt of such written communication) to the address set forth in Section 17.3 or such other address as notified in writing by such Party to the other Party.

17.3 Addresses.

If to Paratek:

Paratek Pharmaceuticals, Inc.
75 Park Plaza
4th floor
Boston, MA 02111
[* * *]

With a copy to:

Paratek Pharmaceuticals, Inc.
75 Park Plaza
4th floor
Boston, MA 02111
[* * *]

If to Almac:

Almac Pharma Services Limited
Almac House, 20 Seagoe Industrial Estate,
Craigavon, Northern Ireland, BT63 5QD
Attention: Mr Graeme McBurney, President & Managing Director
Facsimile No.: +44 (0) 2838 332299

With a copy to:

Almac Group Limited
Almac House, 20 Seagoe Industrial Estate,
Craigavon, Northern Ireland, BT63 5QD
Attention: General Counsel
Email: commercial.contracts@almacgroup.com
Facsimile No.: +44 (0) 2838 332299

18. GENERAL

18.1 Governing Law. This Agreement shall be construed in accordance with and governed by the law of the [* * *], without giving effect to its conflict of laws provisions.

18.2 Escalation of Disputes. In the event of any dispute relating to this Agreement or the Quality Agreement, either Party may refer such dispute to the Supply and Quality Committee for resolution. If the Supply and Quality Committee is unable to resolve such dispute within [* * *] of such referral, either Party may escalate such dispute to each Party's senior management for resolution. If each Party's senior management is unable to resolve such dispute within [* * *] of such escalation, either Party may commence arbitration pursuant to Section 18.3.

18.3 Arbitration. Any dispute relating to this Agreement or the Quality Agreement that cannot be resolved pursuant to Section 18.2 may be referred by either Party to confidential arbitration in accordance with the ICC Rules of Arbitration. The arbitration hearing shall be held as soon as practicable following submission to arbitration. The arbitration hearing shall be held in Wilmington, Delaware. The Parties shall request that the arbitration panel render a formal, binding non-appealable resolution and award on each issue as expeditiously as possible. In any arbitration, the prevailing Party shall be entitled to reimbursement of its reasonable attorneys' fees and the Parties shall use all reasonable efforts to keep arbitration costs to a minimum. Judgment upon the award may be entered by any court having jurisdiction thereof or having jurisdiction over the relevant Party or its assets.

18.4 Assignment. This Agreement shall be binding upon and inure to the benefit of each Party and their respective heirs, successors and permitted assigns. This Agreement shall not be assignable or transferable by either Party hereto without the prior written consent of the other Party (such consent not to be unreasonably withheld, conditioned or delayed), except that Paratek may, with written notice to Almac, assign this Agreement without Almac's consent to an Affiliate, a Paratek Licensee or a successor in connection with the merger, consolidation, reorganization or sale of all, or substantially all, of the Products, assets or business to which this Agreement relates. Any permitted assignee of this Agreement shall agree in writing to comply with all obligations of the assigning Party under this Agreement. Almac shall not subcontract any of its work hereunder without Paratek's prior written consent and any such consent given by Paratek shall not release Almac from its obligations hereunder. For clarity, any Change of Control of Almac shall be deemed an assignment of this Agreement and subject to the provisions of this Section 18.4, regardless of the structure of such Change of Control.

18.5 Change of Control. During the Term, Almac will notify Paratek in writing if at any time Almac reasonably anticipates that a Change of Control will occur in the next thirty (30) days. [* * *]

18.6 Performance. Each Party agrees to perform its obligations under this Agreement, including under any Scope of Work, in a timely manner. Almac shall allocate adequate resources to execute its obligations under this Agreement, including under each Scope of Work. Almac represents and warrants that all Services shall be performed by qualified personnel in accordance with the highest industry standards.

18.7 Further Assurances. Each Party shall duly execute and deliver or cause to be duly executed and delivered, such further instruments and do and cause to be done such further acts, as may be necessary or appropriate in order to carry out the purposes and intent of this Agreement.

18.8 Entire Agreement. This Agreement and all Exhibits attached hereto (as the same may be amended from time to time by the written agreement of the Parties) and the Quality Agreement constitute the entire agreement between the Parties with respect to the subject matter hereof and supersedes all other documents, agreements, verbal consents, arrangements and understandings between the Parties with respect to the subject matter hereof, including that certain Mutual Confidentiality Agreement between Paratek and Almac Group Limited and its Affiliates, dated as of February 25, 2016. This Agreement shall not be amended orally, but only by an agreement in writing, signed by both Parties that states that it is an amendment to this Agreement.

18.9 Severability. If and to the extent that any provision (or any part thereof) of this Agreement is held to be invalid, illegal or unenforceable, in any respect in any jurisdiction, the provision (or the relevant part thereof) shall be considered severed from this Agreement and shall not serve to invalidate the remainder of such provision or any other provisions hereof. The Parties shall make a good faith effort to replace any invalid, illegal or unenforceable provision (or any part thereof) with a valid, legal and enforceable one such that the objectives contemplated by the Parties when entering this Agreement may be realized.

18.10 Independent Contractor. Almac shall act as an independent contractor and neither Party shall have any authority to represent or bind the other Party in any way.

18.11 No Waiver. Any waiver by one Party of any right of such Party or obligation of the other Party must be in writing and shall not operate as a waiver of any subsequent right or obligation.

18.12 Equitable Relief. Almac acknowledges that any breach or threatened breach by Almac of its obligations under this Agreement (including under any Scope of Work) will cause irreparable harm to Paratek and that money damages would not be adequate to remedy such harm. Therefore, in addition to any other remedies available at law or in equity, Paratek shall be entitled to injunctive relief from a court of competent jurisdiction to prevent any such breach, without proof of damages or posting of a bond.

18.13 Counterparts. This Agreement may be executed in one (1) or more counterparts, each of which shall be deemed an original, and together shall constitute one and the same agreement and shall become effective when one (1) or more counterparts have been signed by each of the Parties and delivered to the other Party, it being understood that both Parties need not sign the same counterpart. This Agreement, following its execution, may be delivered via PDF copies or other form of electronic delivery, which shall constitute delivery of an execution original for all purposes.

[*Signature page follows.*]

THIS EXHIBIT HAS BEEN REDACTED AND IS THE SUBJECT OF A CONFIDENTIAL TREATMENT REQUEST. REDACTED MATERIAL IS MARKED WITH [* * *] AND HAS BEEN FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the Effective Date.

PARATEK PHARMACEUTICALS, INC.

By: /s/ William M. Haskel
Name: William M. Haskel
Title: Sr. Vice President

ALMAC PHARMA SERVICES LIMITED

By: /s/ Colin Hayburn
Name: Colin Hayburn
Title: Director

THIS EXHIBIT HAS BEEN REDACTED AND IS THE SUBJECT OF A CONFIDENTIAL TREATMENT REQUEST. REDACTED MATERIAL IS MARKED WITH [* * *] AND HAS BEEN FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION.

EXHIBIT A

Supply Price

[* * *]

THIS EXHIBIT HAS BEEN REDACTED AND IS THE SUBJECT OF A CONFIDENTIAL TREATMENT REQUEST. REDACTED MATERIAL IS MARKED WITH [* * *] AND HAS BEEN FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION.

EXHIBIT B

Paratek Materials

[* * *]

THIS EXHIBIT HAS BEEN REDACTED AND IS THE SUBJECT OF A CONFIDENTIAL TREATMENT REQUEST. REDACTED MATERIAL IS MARKED WITH [* * *] AND HAS BEEN FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION.

Confidential
Execution Version

MANUFACTURING AND SERVICES AGREEMENT

THIS MANUFACTURING AND SERVICES AGREEMENT (this "**Agreement**") is made and entered into as of November 2, 2016 (the "**Effective Date**"), by and between Paratek Pharmaceuticals, Inc., a corporation organized and existing under the laws of Delaware, with an address at 75 Park Plaza, 4th Floor, Boston, Massachusetts 02116, United States ("**Paratek**") and CIPAN−Companhia Industrial Produtora de Antibióticos, S.A., a corporation organized and existing under the laws of Portugal with an address at Rua da Estação, nº42, 2600-726 Castanheira do Ribatejo, Portugal ("**CIPAN**" and, collectively with Paratek, the "**Parties**", and each, a "**Party**").

RECITALS

WHEREAS, CIPAN is experienced in the manufacture of active pharmaceutical ingredients in the antibiotic field;

WHEREAS, [* * *] to manufacture increased quantities of Minocycline HCI precursor meeting the Specifications ("**Minocycline Starting Material**") and to manufacture crude Omadacycline meeting the Specifications ("**Crude Omadacycline**" and, collectively with the Minocycline Starting Material, the "**Products**", and each, a "**Product**");

WHEREAS, Paratek intends to purify or have purified Crude Omadacycline into Omadacycline and develop, market and sell Paratek Products (as defined below), including pharmaceutical products containing Omadacycline as the active pharmaceutical ingredient; and

WHEREAS, Paratek desires to have CIPAN manufacture the Products for Paratek and CIPAN desires to do so all on the terms and subject to the conditions set forth herein.

NOW, THEREFORE, in consideration of the mutual covenants and agreements set forth herein, and for good and valuable consideration the receipt and sufficiency of which are hereby acknowledged, the parties hereto hereby agree as follows:

1. DEFINITIONS

1.1 Definitions. As used in this Agreement, the following capitalized terms have the meanings indicated below:

1.1.1 "**Affiliate**" means, with respect to any Person, any other Person which directly or indirectly controls, is controlled by, or is under common control with that Person at any time during the period for which the determination of affiliation is being made. The term "control," (including, with correlative meaning, the terms "controlling", "controlled by" and "under common control with"), as used in this Section 1.1.1 with respect to any Person, means the possession, directly or indirectly, of the power to elect a majority of the board of directors (or other governing body) or to direct or cause the direction of the management and policies of such Person, whether through the ownership of voting securities, by contract or otherwise.

1.1.2 "**Agreement**" has the meaning set forth in the preamble hereto.

1.1.3 "**Approval Date**" means, with respect to any Batch, the date on which such Batch is approved for release by CIPAN's quality assurance group in accordance with the Quality Agreement.

1.1.4 "**Approved Supplier**" means any supplier that (a) has been approved with respect to quality standards by either Paratek or CIPAN and, in the event such approval was given by CIPAN, (b) has been agreed to by Paratek by way of Paratek's approval of the Quality Agreement in which such supplier has been set forth.

1.1.5 "**Batch**" means, with respect to a Product at any given time, a discrete output or isolation from a set of unit operations described in the then-current batch record instructions for such Product. The batch size for each Product shall be related to the capacity of a given equipment train and is dependent on the maximum utilization of the bottle-neck reactor or vessel. As of the Effective Date, a Batch of Minocycline Starting Material is [* * *] and a Batch of Crude Omadacycline is [* * *].

1.1.6 "**Business Day**" means a day on which banking institutions in Boston, Massachusetts and Castanheira do Ribatejo, Portugal are open for business.

1.1.7 "**Calendar Quarter**" means, with respect to any given Calendar Year, the respective periods of three (3) consecutive calendar months ending on March 31, June 30, September 30 or December 31; provided, however, that (a) the first Calendar Quarter of the Term shall extend from the Effective Date to the end of the first complete Calendar Quarter thereafter and (b) the last Calendar Quarter of the Term shall end upon the effective date of expiration or termination of this Agreement.

1.1.8 "**Calendar Year** " means each successive period of twelve (12) consecutive months commencing on January 1 and ending on December 31; provided, however, that (a) the first Calendar Year of the Term shall begin on the Effective Date and end on December 31, 2016; and (b) the last Calendar Year of the Term shall end on the effective date of expiration or termination of this Agreement.

1.1.9 "**Change of Control**" means any transaction or series of transactions wherein (a) the voting securities of CIPAN outstanding immediately prior thereto cease to represent at least fifty percent (50%) of the combined voting power of the surviving entity immediately after such transaction or transactions; (b) the stockholders or equity holders of CIPAN approve a plan of complete liquidation of CIPAN, or an agreement for the sale or disposition by CIPAN of all or substantially all of CIPAN's assets, other than to an Affiliate; (c) a Third Party becomes the beneficial owner of fifty percent (50%) or more of the combined voting power of the outstanding securities of CIPAN or (d) substantially all of CIPAN's business or assets which relate to this Agreement are sold or otherwise transferred to a Third Party.

1.1.10 "**CIPAN**" has the meaning set forth in the preamble hereto.

1.1.11 "**CIPAN Improvement**" means any Invention that [* * *].

1.1.12 "**CIPAN Representatives**" has the meaning set forth in Section 13.1.2.

1.1.13 "**CIPAN Technology**" means (a) all intellectual property and embodiments thereof, including any Inventions, owned by CIPAN or its Affiliates as of the date hereof that are not Paratek Technology or Joint Technology and (b) the CIPAN Improvements.

1.1.14 "**Confidential Information**" means, with respect to any Party, such Party's technology, data, know-how, or information whether written or oral, technical or non-technical, including, but not limited to, financial statements, reports, pricing, trade secrets, secret processes, formulae, samples, customer data (including, but not limited to, customer lists), the formulation of pharmaceutical dosage forms and compounds, manufacturing procedures, manufacturing processes, manufacturing equipment, manufacturing batch records, plant layouts, product volumes, quality control procedures, and quality control standards and the like, that is disclosed to the other Party. Confidential Information of Paratek shall include Manufacturing Information and Paratek Technology.

1.1.15 "**Crude Omadacycline**" has the meaning set forth in the recitals hereto.

1.1.16 "**Current Good Manufacturing Practice**" or "**cGMP**" means, at any given time, the current standards for the manufacture of pharmaceuticals, as set forth in the FD&C Act and applicable regulations promulgated thereunder, as amended from time to time, and such standards of good manufacturing practice as are required by the applicable laws and regulations of countries in which Products are intended to be sold, to the extent such standards are not inconsistent with GMP under the FD&C Act.

1.1.17 "**Effective Date**" has the meaning set forth in the preamble hereto.

1.1.18 "**Facility**" means CIPAN's facility located at Rua da Estação, nº42, Vala do Carregado, 2600-726 Castanheira do Ribatejo, Portugal or any other facility approved in writing by the Parties for the Manufacture of Products.

1.1.19 "**FDA**" means the United States Food and Drug Administration or any successor entity thereto.

1.1.20 "**FD&C Act**" means the Federal Food, Drug and Cosmetic Act, as the same may be amended or supplemented from time to time.

1.1.21 "**Firm Forecast Period**" has the meaning set forth in Section 2.2.

1.1.22 "**Force Majeure Event**" has the meaning set forth in Article 16.

1.1.23 "**Indemnified Party**" has the meaning set forth in Section 13.1.3.

1.1.24 "**Indemnifying Party**" has the meaning set forth in Section 13.1.3.

1.1.25 "**Initial Term**" means the [* * *] period commencing on the Effective Date.

1.1.26 "**Inspection Period**" has the meaning set forth in Section 9.2.1.

1.1.27 "**Invention**" means any development, information, invention, improvement, know-how, data or intellectual property, whether or not reduced to practice and whether or not patentable.

1.1.28 "**Joint Technology**" has the meaning set forth in Section 11.1.3.

1.1.29 "**Laboratory**" has the meaning set forth in Section 9.3.1.

1.1.30 "**Latent Defect**" shall mean any defect in a Product that is not reasonably discoverable through Paratek's (or Paratek's designee's) normal incoming goods inspection verification methods and procedures, such methods and procedures to be in accordance with the Quality Agreement. By way of example only, the discoloration of a Product over time due to the presence of an excipient that is not compliant with the Specifications would constitute a Latent Defect.

1.1.31 "**Losses**" has the meaning set forth in Section 13.1.1.

1.1.32 "**Manufacture**," "**Manufactured**" or "**Manufacturing**" means all activities involved in the production of Products to be supplied to Paratek or its Affiliates hereunder, including the preparation, formulation, finishing, testing, storage and packaging for shipment of Products and the handling, storage and disposal of any residues or wastes generated thereby.

1.1.33 "**Manufacturing Information**" means all information and data relating to the Manufacture of Products provided by Paratek to CIPAN hereunder, including the Specifications, Methods of Analysis and all formulas and processes.

1.1.34 "**Materials**" means all materials, including all raw materials and ingredients required for the Manufacture of Products.

1.1.35 "**Methods of Analysis**" means the methods of analysis for the Products set forth in the Quality Agreement, as such Quality Agreement may be amended from time to time in accordance with its terms.

1.1.36 "**Minocycline Starting Material**" has the meaning set forth in the recitals hereto.

1.1.37 "**Paratek**" has the meaning set forth in the preamble hereto.

1.1.38 "**Paratek Improvement**" means any Invention [* * *].

1.1.39 [* * *]

1.1.40 "**Paratek Licensee**" means any Third Party to whom Paratek grants a license or a right to research, develop, make, have made, use, sell, have sold, import, export or otherwise exploit a Product or Paratek Product.

1.1.41 "**Paratek Product**" means any pharmaceutical product owned, controlled or sold by Paratek, its Affiliates or Paratek Licensees that incorporates or is derived from a Product.

1.1.42 "**Paratek Representatives**" has the meaning set forth in Section 13.1.1.

1.1.43 "**Paratek Technology**" means (a) all intellectual property and embodiments thereof, including any Inventions, owned by Paratek as of the Effective Date that are not Joint Technology and (b) the Paratek Improvements.

1.1.44 "**Party**" and "**Parties**" have the meaning set forth in the preamble hereto.

1.1.45 "**Person**" means any natural person, corporation, general partnership, limited partnership, proprietorship, other business organization, trust, union, association or governmental authority.

1.1.46 "**Product**" and "**Products**" have the meaning set forth in the recitals hereto.

1.1.47 "**Quality Agreement**" has the meaning set forth in Section 8.1.

1.1.48 "**Recall**" means any recall, withdrawal or corrective action (whether voluntary or mandatory) or issue of an "NDA Field Alert" (as defined in 21 CFR 314.81).

1.1.49 "**Regulatory Approval**" means all authorizations by the competent Regulatory Authorities which are required for the manufacture, marketing, promotion, pricing and sale of a Product in a given country or regulatory jurisdiction in the Territory.

1.1.50 "**Regulatory Authority**" means any national, supra-national, regional, state or local regulatory agency, department, bureau, commission, council or other governmental entity involved in the granting of Regulatory Approval for Products in the Territory.

1.1.51 "**Reimbursement Reduction**" has the meaning set forth in Section 7.3.1.

1.1.52 "**Rejection Notice**" has the meaning set forth in Section 9.2.1.

1.1.53 "**Renewal Term**" means each consecutive [* * *] period commencing on the expiration of the Initial Term or immediately preceding Renewal Term, until this Agreement is terminated pursuant to Article 14.

1.1.54 "**Rolling Clinical Forecast**" has the meaning set forth in Section 2.2.

1.1.55 "**Rolling Commercial Forecast**" has the meaning set forth in Section 2.2.

1.1.56 "**Rolling Forecast**" means a Rolling Clinical Forecast or a Rolling Commercial Forecast, as applicable.

1.1.57 "**Scope of Work**" has the meaning set forth in Section 3.1.

1.1.58 "**Seizure**" means any action by FDA or any other Regulatory Authority to detain or destroy Product or prevent the release of Product.

1.1.59 "**Services**" has the meaning set forth in Section 3.1.

1.1.60 [* * *]

1.1.61 "**Specifications**" means the specifications for the Products set forth in the Quality Agreement, as such Quality Agreement may be amended from time to time in accordance with its terms.

1.1.62 "**Supply Price**" has the meaning set forth in Section 7.1.

1.1.63 "**Term**" means, in the aggregate, the Initial Term and all Renewal Terms, if any.

1.1.64 "**Territory**" means the United States of America and its territories and possessions and any other countries in the world added to the definition of "Territory" pursuant to Section 2.6.

1.1.65 "**Third Party**" means any Person other than Paratek, CIPAN and their respective Affiliates.

1.1.66 "**Tufts**" has the meaning set forth in Section 11.4.

1.1.67 "**Tufts License**" has the meaning set forth in Section 11.4.

1.1.68 "**Tufts Technology**" has the meaning set forth in Section 11.4.

1.2 Construction of Certain Terms and Phrases. Unless the context of this Agreement otherwise requires, (i) words of any gender include each other gender; (ii) words using the singular or plural number also include the plural or singular number, respectively; (iii) the term "or" shall have the inclusive meaning of the term "and/or"; (iv) "including" and its cognates shall have the non-limiting meaning of "including, without limitation"; (v) the term "will" shall have the same meaning and import as the term "shall"; (vi) the terms "hereof," "herein," "hereby" and derivative or similar words refer to this entire Agreement; (vii) the terms "Article" or "Section" refer to the specified Article or Section of this Agreement; and (viii) Article and Section headings shall not affect the meaning or construction of any provision of this Agreement.

2. GENERAL; FORECASTS AND ORDERS

2.1 Manufacture. CIPAN shall Manufacture and supply Products to Paratek or Paratek's designee in such quantities and at such times as ordered by Paratek pursuant to the terms of this Agreement in exchange for payment of the applicable Supply Price for such Products. During the Term, CIPAN shall maintain the resources necessary to Manufacture Products pursuant to the terms of this Agreement and shall provide, at its own expense, all Materials and labor necessary to do so.

2.2 Forecasts. Within [* * *] after the Effective Date, Paratek shall submit to CIPAN a forecast of clinical supply of Products that Paratek anticipates ordering from CIPAN during the [* * *] period (broken down by Product and by month and, if applicable, country in the Territory) following the date of such forecast and Paratek shall update such forecast on a rolling [* * *] basis every [* * *] thereafter (each, a "**Rolling Clinical Forecast**") until Paratek no longer requires any clinical supply of Products. Beginning [* * *] prior to the anticipated launch of a Paratek Product in the Territory and for the remainder of the Term, Paratek shall submit to CIPAN a forecast of commercial supply of Products that Paratek anticipates ordering from CIPAN during the [* * *] period (broken down by Product and by month and, if applicable, country in the Territory) following the date of such forecast and Paratek shall update such forecast on a rolling [* * *] basis every [* * *] thereafter (each, a "**Rolling Commercial Forecast**"), provided that Paratek shall provide an updated Rolling Commercial Forecast within [* * *] after such Paratek Product receives Regulatory Approval by the applicable Regulatory Authority in a country in the Territory. Paratek shall place purchase orders for at least the quantity of each Product specified in the first [* * *] of each such Rolling Clinical Forecast or Rolling Commercial Forecast (such period, the "**Firm Forecast Period**") and the remaining [* * *] of such forecast shall be a good faith estimate. Except as set forth in the immediately preceding sentence, Paratek shall not be required to order any fixed minimum quantity of either Product, notwithstanding any forecast or prior course of dealing.

2.3 Orders. Paratek may submit purchase orders for Products to CIPAN from time to time during the Term and at least [* * *] prior to the requested date of delivery. Each purchase order shall specify (a) the quantity of each Product ordered for delivery; and (b) the delivery date for that order. CIPAN shall Manufacture and supply Products in accordance with this Agreement and each applicable purchase order. Within five (5) Business Days after receiving any purchase order from Paratek, CIPAN shall accept such purchase order in writing provided it has been submitted and is otherwise in accordance with the terms and conditions of this Agreement and shall provide Paratek with a Manufacturing schedule for the Products subject to such purchase order. Notwithstanding the foregoing, with respect to any of the [* * *] in the then most recent Firm Forecast Period, CIPAN may reject, by written notice to Paratek, any portion of any purchase order to the extent that fulfilling the entirety of such purchase order would cause the aggregate number of units of a Product supplied by CIPAN during such month to exceed [* * *] of the units of such Product forecast for such month in the applicable Rolling Forecast; provided, however, that CIPAN will use its reasonable efforts to, but shall not be obligated to, supply such Product in excess of such [* * *] quantity. Paratek may cancel any firm purchase order (in whole or in part) at any time prior to the delivery for any quantity of a Product that CIPAN has not completed Manufacturing pursuant to such purchase order at the time that notice of cancellation is received by CIPAN, provided that, if CIPAN has commenced but not completed the Manufacture of such Product pursuant to such firm purchase order, [* * *].

2.4 Priority of Supply. CIPAN and its Affiliates shall (a) maintain capacity in the Facility to fill Paratek's forecasted orders for each Product in a manner consistent with this Agreement, including purchase orders placed hereunder and (b) fill Paratek's purchase orders placed pursuant to this Agreement for each Product prior to filling any orders of any other customer in the event of a labor, materials or capacity shortage.

2.5 [* * *]

2.6 Territory Expansion. At any time during the Term, Paratek may provide written notice to CIPAN of its desire to expand the Territory under this Agreement with respect to one (1) or both Products to include one (1) or more additional countries or territories. Promptly following such notification, the Supply and Quality Committee shall meet to discuss any expansion of CIPAN's Manufacturing capabilities that would be necessitated by such expansion in accordance with clause (b) of Section 4.3 and the Parties shall use good faith commercially reasonable efforts to execute an amendment that (a) amends the definition of "Territory" under Section 1.1.64 to include such additional countries or territories and (b) modifies the provisions of this Agreement as necessary in order to reflect the regulatory requirements of such additional countries or territories. For clarity, Paratek shall not be obligated to amend the definition of Territory at any point during the Term.

2.7 Supply to Paratek Licensees. In the event Paratek delivers a written request to CIPAN requesting that CIPAN engage in negotiations with a Paratek Licensee on the terms of a definitive agreement pursuant to which CIPAN would Manufacture and supply one (1) or both Products to such Paratek Licensee or a designee of a Paratek Licensee, CIPAN shall use commercially reasonable good faith efforts to negotiate and execute such agreement on substantially the same terms of this Agreement (including pricing, orders, forecasting, delivery, non-conformance, failure to supply, term and termination).

3. SERVICES

3.1 Scopes of Work. CIPAN shall perform for Paratek certain services related to the development, technology transfer and Manufacturing (including scale-up and validation) of the Products (the "**Services**") as set forth in one (1) or more statements of work to be mutually agreed by the Parties and attached as addenda to this Agreement (each, a "**Scope of Work**"). Each Scope of Work shall be automatically incorporated by reference into and governed by the terms and conditions of this Agreement. A Scope of Work shall include the scope of Services to be provided by CIPAN, any deliverables or milestones in connection with such Services, the fees payable for such Services, the applicable standard of service to be provided and any other relevant terms and conditions not already set forth in this Agreement. In the event of any conflict between this Agreement and any Scope of Work, the terms of this Agreement shall govern unless the Scope of Work explicitly states that its terms and conditions are to supersede this Agreement. The Parties may amend the activities or costs set forth in any Scope of Work by mutual written agreement.

3.2 Fees. As part of a Scope of Work, the Parties will negotiate reasonable costs for the Services to be performed by CIPAN for Paratek under such Scope of Work. CIPAN shall submit a cost estimate to Paratek for any such Service, and shall not commence any such Service until Paratek provides written notice of its approval of such cost estimate (or the Parties otherwise mutually agree on the costs for such Service). As a general principle, any such cost estimate shall reflect [* * *].

4. SUPPLY AND QUALITY COMMITTEE

4.1 Composition. The Supply and Quality Committee shall be comprised of an equal number of representatives of each Party. Each Party shall appoint its respective representative to the Supply and Quality Committee within thirty (30) days of the Effective Date, and from time to time, may substitute one (1) or more of its representatives, in its sole discretion, effective upon notice to the other Party of such change. All Supply and Quality Committee representatives shall have appropriate expertise, seniority, decision-making authority and relevant expertise in matters related to the Manufacturing and supply of Products.

4.2 Meetings. The Supply and Quality Committee shall meet as necessary to carry out its duties under Section 4.3, but no more often than once per Calendar Quarter, unless otherwise agreed by its members. Unless otherwise agreed by the Parties, each Party will request that one or more of its executive officers attend one meeting of the Supply and Quality Committee each Calendar Year. The Supply and Quality Committee shall meet in-person at Paratek or CIPAN or, alternatively, by means of teleconference, videoconference or other similar communications equipment.

4.3 Supply and Quality Committee Responsibilities. The Supply and Quality Committee shall provide a forum for the discussion, coordination and review of all activities under this Agreement (including under any Scope of Work), and shall in particular have responsibility for the following: (a) reviewing key metrics for each Product's production and quality, and reviewing and monitoring any required remediation with respect to production and quality for each Product; (b) reviewing CIPAN's capacity and short-term and long-term planning for clinical and commercial supply of each Product, including anticipating any capacity shortfalls and discussing the cost allocation of investments required to increase capacity or improve efficiencies; (c) reviewing and discussing draft Scopes of Work; (d) discussing the cost allocation, if any, of extraordinary costs incurred by CIPAN in connection with the Manufacture of Products or provision of Services; (e) establishing resource priorities and resolving resource conflicts; and (f) establishing and monitoring a process improvement incentive program.

4.4 Decision-Making. All of each Party's representatives on the Supply and Quality Committee shall collectively have one (1) vote with respect to decisions before the Supply and Quality Committee. All decisions of the Supply and Quality Committee must be made by unanimous consent, which shall be documented in written minutes of the Supply and Quality Committee and signed by a representative of each Party.

5. [* * *] ALTERNATIVE SUPPLY

5.1 [* * *]

5.2 Alternative Supply. At any time during the Term, Paratek may elect to qualify one (1) or more alternative manufacturing facilities (whether owned by a Third Party, Paratek or by one of Paratek's Affiliates) to Manufacture the Products (each, a "Backup Supplier"). Paratek shall be responsible for any costs associated with qualifying Backup Suppliers. [* * *] CIPAN shall use commercially reasonable efforts to cooperate with the qualification of any Backup Supplier, including (a) technology transfer of all CIPAN Technology, Joint Technology and, to the extent in its possession, Paratek Technology, necessary or useful for the Manufacture of the Products; provided that, to the

extent that such technology and know-how constitutes CIPAN Confidential Information it shall be subject to the provisions of Article 15 and Paratek's designated Backup Supplier shall be required to enter into a confidentiality agreement with CIPAN containing substantially the same terms as Article 15 and (b) providing Paratek and any Backup Supplier with consulting services related to the Manufacture, quality control and quality assurance of the Products. Paratek shall reimburse CIPAN for performing such services described in the preceding sentence at [* * *] within [* * *] of invoice.

6. DELIVERY; FAILURE TO SUPPLY

6.1 Delivery. All Products shall be delivered [* * *]. CIPAN will notify Paratek at least ten (10) Business Days prior to any shipment of Product. Time is of the essence for all deliveries of Products. CIPAN shall ensure that all Product held in storage is stored in accordance with the Specifications until delivery to Paratek under this Agreement and that all storage areas meet cGMP requirements. CIPAN shall hold title to and bear all risk of loss or damage to Products and Materials prior to such item's delivery to Paratek or its designee hereunder. In the event of any delay in delivery of Product from the delivery date on the applicable purchase order for such Product, if such delay is: [* * *], unless, in each case ((a) and (b)), such delay is due to a Force Majeure Event causing a worldwide shortage of the applicable Materials, in which case Article 16 shall apply.

6.2 Manufacturing Date. CIPAN shall schedule its Manufacturing operations so that all Products delivered have the maximum shelf life possible and in any event no Minocycline Starting Material delivered hereunder shall have less than [* * *] of shelf life remaining at the time of delivery. If Product is delivered to Paratek or Paratek's designee whose shelf life does not conform to the requirements set forth in this Section 6.2, CIPAN shall promptly, at its cost and expense, refund or replace the non-conforming Product upon Paratek's request.

6.3 Material Failure of Supply. If CIPAN, for any reason, fails to supply at least [* * *] of the units of any Product required to be delivered by CIPAN pursuant to valid purchase orders placed by Paratek during any period of [* * *] or longer beginning on the requested delivery date, in addition to and without limiting any other remedies available to Paratek, Paratek shall be entitled to notify CIPAN of its intent to source from the Backup Supplier all or any of the Products [* * *].

6.4 Notice of Failure to Supply. If CIPAN is unable or anticipates that it will be unable to supply Products meeting Paratek's forecasted requirements of any Product(s) in a timely manner at any time during the Term, CIPAN shall provide prompt written notice to Paratek. Following such notice, the Parties shall discuss in good faith how to prevent or mitigate such inability to supply, including (i) an expansion of the Facility's capacity and (ii) the ability of Paratek to seek [* * *] from a Backup Supplier(s). CIPAN shall implement in good faith any reasonable suggestions of Paratek to prevent or mitigate such inability to supply at its own expense unless otherwise mutually agreed upon by the Parties.

THIS EXHIBIT HAS BEEN REDACTED AND IS THE SUBJECT OF A CONFIDENTIAL TREATMENT REQUEST. REDACTED MATERIAL IS MARKED WITH [* * *] AND HAS BEEN FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION.

7. PRICE AND PAYMENT

7.1 Supply Price. The price of Products to be sold to Paratek during the Term shall be based on the annual volume of each Product ordered by Paratek as set forth in Exhibit A attached hereto, subject to adjustment as set forth in Sections 6.1, 7.2 and 7.3 (such price for a Product, the "**Supply Price**" for such Product). For clarity, the Supply Price for Minocycline Starting Material under this Agreement shall be invoiced separately from the Supply Price for Crude Omadacycline but, for the avoidance of doubt, to the extent Minocycline Starting Material supplied by CIPAN hereunder is used in the Manufacture of Crude Omadacycline by CIPAN hereunder, Paratek will only be charged once for the Minocycline Starting Material (i.e. not also as a component of the Crude Omadacycline).

7.2 Price Adjustments.

7.2.1 The Supply Price of Crude Omadacycline may be adjusted by the mutual agreement of the Parties upon the finalization of the final costs of Manufacturing Crude Omadacycline following the completion of Manufacture of the [* * *] registration batch of Crude Omadacycline.

7.2.2 Beginning prior to [* * *], the Supply Price for each Product for the next Calendar Year shall be adjusted by mutual agreement of the Parties on a yearly basis at least [* * *] prior to the beginning of such Calendar Year, such adjustment to reflect: [* * *]. CIPAN will permit Paratek to promptly review such portions of its internal records, books and any other materials that are necessary in order to substantiate CIPAN's proposed Supply Price for a Product or any adjustment to the Supply Price for a Product, such materials to be considered CIPAN's Confidential Information hereunder. For clarity, Paratek shall have no right to review CIPAN's records regarding other activities or products that are not relevant to the proposed Supply Price for a Product or any adjustment thereto as set forth in this Section 7.2.2.

7.3 [* * *]

7.4 Payment. CIPAN shall invoice Paratek for Products on or after the Approval Date and shall only charge Paratek for Products that are shipped to Paratek or Paratek's designee pursuant to this Agreement. Paratek shall pay CIPAN for all supplied quantities of conforming Products within [* * *] from the date of invoice receipt; provided that, pending resolution regarding any disagreement between the Parties as to conformance of a Product to the requirements of this Agreement or the Quality Agreement, Paratek is not obligated for any payment with respect to any Product Paratek believes to be non-conforming. In this Agreement, unless expressly otherwise stated, all references to money or payments means US Dollars and all payments made hereunder shall be made in that currency.

7.5 Taxes and Other Charges. All Product prices are inclusive of taxes, shipping costs to the point of delivery, customs duties and other charges. Paratek and CIPAN shall cooperate to eliminate or minimize the amount of any such taxes imposed on the transactions contemplated in this Agreement. Paratek is not responsible for any penalties or interest related to the failure of CIPAN to collect sales, use, VAT or similar taxes.

8. COMPLIANCE, QUALITY AND ENVIRONMENTAL

8.1 Quality Agreement. The Parties shall use good faith reasonable efforts to enter into a commercial pharmaceutical product quality agreement (the **"Quality Agreement**") within sixty (60) days of the Effective Date. Each Party agrees to perform its respective obligations under the Quality Agreement in accordance with such agreement.

8.2 Compliance with Law. CIPAN shall conduct its Manufacturing operations hereunder in a safe and prudent manner, in compliance with all applicable laws and regulations (including, but not limited to, those dealing with occupational safety and health, those dealing with public safety and health, those dealing with protecting the environment, and those dealing with disposal of wastes), and in compliance with all applicable provisions of this Agreement and the Quality Agreement. CIPAN shall obtain all necessary registrations and permits pertaining to activities contemplated by this Agreement and the Quality Agreement. To the extent necessary for the Regulatory Approval of Products, CIPAN shall permit the inspection of the Facility by Regulatory Authorities and shall supply all documentation and information requested by Paratek to obtain or maintain Regulatory Approval of Products.

8.3 Manufacturing Quality. CIPAN shall obtain all Materials from Approved Suppliers and shall pay such suppliers on a timely and current basis. All Products shall be Manufactured at the Facility. CIPAN shall sample and analyze all Materials upon receipt to ensure that such Materials are free of defects and meet the applicable specifications therefor. CIPAN shall take all necessary steps to prevent contamination and cross contamination of Products. Products shall be unadulterated and free from contamination, diluents and foreign matter in any amount.

9. QUALITY AUDITS; TESTING AND INSPECTION OF THE PRODUCTS

9.1 Inspection and Auditing Rights. Paratek and its representatives shall have the right, at Paratek's expense, to audit, inspect and observe the Facility, the performance by CIPAN of its obligations under this Agreement and the Quality Agreement, CIPAN's compliance with applicable laws and regulations in the performance of its obligations under this Agreement and the Quality Agreement, and the handling, Manufacture, testing, inspection, storage, disposal and transportation of the Product by CIPAN and its permitted subcontractors, during normal business hours and upon at least [* * *] prior notice, provided that, [* * *] CIPAN shall make available to Paratek all relevant records and reports and Paratek shall have the right to copy all such records and reports. CIPAN agrees to respond to Paratek's audit findings within [* * *] of receipt of Paratek's audit report, to take prompt corrective action to remedy any observed violations of the terms of this Agreement, the Quality Agreement or of applicable law or regulations and to be responsive to the recommendations contained therein. Such audits may be conducted no more than [* * *] at [* * *] expense, provided that Paratek may also conduct follow-up audits or inspections at [* * *] expense at any time or times during a Calendar Year that are directed at [* * *].

9.2 Product Rejection and Inspection.

9.2.1 Paratek shall have a period of [* * *] from the date of Paratek's delivery of Products (the "**Inspection Period**") to inspect, or cause to have inspected by a Third Party designated by Paratek, any shipment of Products to determine whether such shipment conforms to Specifications or otherwise breaches CIPAN's warranties set forth in this Agreement. Paratek shall give CIPAN notice of rejection ("**Rejection Notice**") of any shipment of Products that, in whole or part, failed to meet Specifications or which otherwise breached CIPAN's warranties set forth in this Agreement, in each case at the time of delivery pursuant to Section 6.1.

9.2.2 If Paratek determines during the Inspection Period for a Product(s) that such Product(s) did not conform to Specifications or otherwise breached CIPAN's warranties set forth in this Agreement, in each case at the time of delivery pursuant to Section 6.1, it shall notify CIPAN prior to [* * *]. Paratek's failure to timely deliver a Rejection Notice shall be deemed its acceptance of the Product, unless a Latent Defect of such Product exists. Paratek shall accompany any Rejection Notice with reasonable supporting evidence in its possession that shows that the Product delivered to Paratek by CIPAN was not Manufactured in accordance with Specifications or otherwise breaches CIPAN's warranties set forth in this Agreement, in each case at the time of delivery pursuant to Section 6.1.

9.3 Independent Testing.

9.3.1 If Paratek delivers a Rejection Notice to CIPAN in respect of all or any part of a shipment of Product(s), then the Parties shall have [* * *] from the date of CIPAN's receipt of such Rejection Notice to resolve any dispute regarding whether all or any part of such shipment of the Product(s) was Manufactured in conformance with Specifications and CIPAN's warranties set forth in this Agreement. Either Party may request, in writing, at any time within such [* * *] period that an independent laboratory (a "**Laboratory**") be used to determine whether the Product met Specifications at the time of delivery. Such Laboratory must be mutually acceptable to both Parties and shall meet all the requirements of an outside laboratory as specified in the Quality Agreement. The determination of the Laboratory shall be binding upon the Parties.

9.3.2 If the Laboratory determines, or the Parties otherwise agree, that the Product(s) met Specifications at the time of delivery, then Paratek shall (i) pay to CIPAN the Supply Price invoiced for such Product(s) pursuant to Section 7.1, and (ii) pay to the Laboratory the amount of the fees charged by the Laboratory for such testing, if applicable.

9.3.3 If the Laboratory determines, or the Parties otherwise agree, that the Product(s) did not meet Specifications at the time of delivery, then CIPAN shall (i) reimburse Paratek for any Supply Price previously paid by Paratek for such non-conforming Product(s), (ii) pay to the Laboratory the amount of the fees charged by the Laboratory for such testing, if applicable (iii) dispose of the non-conforming Product, at CIPAN's expense, in accordance with Paratek's instructions, and (iv) re-initiate Manufacturing and supply of replacement Product(s) conforming to Specifications as soon as reasonably practicable (but in no event more than [* * *] following the Laboratory's determination). Paratek shall pay to CIPAN the Supply Price for such replacement Product(s) in accordance with Section 7.1.

9.4 Latent Defects. As soon as either Party becomes aware of a Latent Defect in any Batch, such Party shall immediately notify the other Party thereof, and, at Paratek's election, the applicable Batch shall be deemed rejected as of the date of delivery of such notice. In such case, CIPAN shall, without limiting any other remedies available to Paratek, (a) reimburse Paratek for any Supply Price previously paid by Paratek for such non-conforming Batch, (b) dispose of the non-conforming Batch, at CIPAN's expense, in accordance with Paratek's instructions, (c) Manufacture and supply of replacement Batch conforming to Specifications as soon as reasonably practicable (but in no event more than [* * *] following the discovery of the Latent Defect) and (d) reimburse Paratek for any reasonable out-of-pocket costs incurred by Paratek relating to the acceptance of returns from Paratek's customers resulting from such non-conforming Batch. At its election, Paratek may recover undisputed amounts to which it may become entitled under this paragraph by deducting such amounts from amounts then due or that may subsequently become due to CIPAN from Paratek hereunder.

9.5 Samples and Record Retention. CIPAN shall retain records and retention samples of each Batch of Product for at least [* * *] and shall make the same available to Paratek upon request. After the required holding period, CIPAN shall provide written notice to Paratek and, at Paratek's direction, shall either destroy or otherwise disposition such retention samples at CIPAN's expense. During and after the term of this Agreement, CIPAN shall assist Paratek with respect to any complaint, issue or investigation relating to Product.

9.6 Government Inspections. Each Party shall promptly notify the other Party if such Party receives notice from a Regulatory Authority regarding a cGMP investigation or other inspection with respect to a Product. If CIPAN receives advance notice of any such investigation, inspection or visit by any Regulatory Authority to inspect the Facility or review the Manufacture of a Product, CIPAN shall permit, to the extent permitted by applicable law, Paratek or its representatives to be present during such visit, at Paratek's expense. Upon Paratek's request, CIPAN shall provide Paratek with a copy of any report issued by such Regulatory Authority following such visit.

9.7 Recalls and Seizure.

9.7.1 Each Party shall keep the other Party promptly and fully informed of any notification or other information whether received directly or indirectly which might result in the Recall or Seizure of Paratek Product(s). If either Party determines that it is necessary to Recall any Paratek Product, it shall immediately notify the other Party and CIPAN will collaborate with Paratek in connection with any Recall or Seizure. In any such situation, Paratek shall have the right to make all final decisions regarding a Recall or Seizure of Paratek Products.

9.7.2 CIPAN shall be liable for the out-of-pocket costs and expenses actually incurred by Paratek as a result of any Recall or Seizure (including any Supply Price paid for the Product incorporated in the relevant Paratek Product and any in-process or finished Product that cannot be shipped due to the Recall or Seizure), to the extent such Recall or Seizure results from [* * *].

9.7.3 Paratek shall be liable for the out-of-pocket costs and expenses actually incurred by CIPAN as a result of any Recall or Seizure to the extent such Recall or Seizure results from [* * *].

10. MANUFACTURING CHANGES

10.1 Voluntary Changes.

10.1.1 Paratek may propose any change to the Manufacturing process, the Manufacturing equipment, the Specifications, the Materials, the sources of Materials or the Methods of Analysis by delivering a written notice to CIPAN of such proposed change. Within ten (10) Business Days of receiving such notice, CIPAN shall inform Paratek of any and all reasonable costs associated with implementing such change and if Paratek agrees to reimburse CIPAN for such costs, CIPAN shall implement such change as promptly as practicable in consultation in Paratek; provided, however, that, if CIPAN notifies Paratek that it has determined in good faith that such change is not in compliance with applicable laws or regulations (including cGMP), the Parties shall submit such dispute to a Third Party expert for resolution.

10.1.2 CIPAN shall not make any changes to the Manufacturing process, the Manufacturing equipment, the Specifications, the Materials, the sources of Materials or the Methods of Analysis without the prior written consent of Paratek.

10.2 Required Changes. If FDA or any other Regulatory Authority requests or requires any change in the Manufacturing process, the Manufacturing equipment, the Specifications, the Materials, the source of Materials or Methods of Analysis with respect to any Product, the Parties shall promptly (but in no event more than ten (10) Business Days after receipt of the Regulatory Authority's notice) meet and discuss an implementation plan for such change, including the allocation of any associated reasonable costs for such change. If the Parties, after discussing the proposed change in reasonable good faith negotiations, cannot agree on the plan for implementing such change, the costs (or cost allocation) of implementing such change or CIPAN is technically or financially incapable of making such change, [* * *]. Each Party agrees to promptly forward to the other copies of any written communication received by such Party from the FDA or any other Regulatory Authority that may affect the Manufacture or supply of any Product as contemplated herein.

11. INTELLECTUAL PROPERTY

11.1 Ownership.

11.1.1 Paratek shall have sole ownership of all Paratek Technology, including all Paratek Improvements, and shall have the sole right to prosecute, maintain and enforce such Paratek Technology in its sole discretion. If, at any time before or during the Term, CIPAN owns (solely or jointly) any Paratek Improvements, CIPAN agrees to assign and does hereby assign all right, title and interest in and to such Paratek Improvements to Paratek. CIPAN shall, and shall cause its Affiliates to, execute and deliver all requested assignments and other documents, and take such other actions as Paratek may reasonably request, in order to perfect and enforce Paratek's rights in the Paratek Improvements.

THIS EXHIBIT HAS BEEN REDACTED AND IS THE SUBJECT OF A CONFIDENTIAL TREATMENT REQUEST. REDACTED MATERIAL IS MARKED WITH [* * *] AND HAS BEEN FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION.

11.1.2 CIPAN shall have sole ownership of all CIPAN Technology, including all CIPAN Improvements, and shall have the sole right to prosecute, maintain and enforce such CIPAN Technology in its sole discretion. If, at any time before or during the Term, Paratek owns (solely or jointly) any CIPAN Improvements, Paratek agrees to assign and does hereby assign all right, title and interest in and to such CIPAN Improvements to CIPAN. Paratek shall, and shall cause its Affiliates to, execute and deliver all requested assignments and other documents, and take such other actions as CIPAN may reasonably request, in order to perfect and enforce CIPAN's rights in the CIPAN Improvements.

11.1.3 Except as expressly set forth in this Section 11.1, each Party shall own all right, title and interest in and to: (a) any and all Inventions made solely by its or its Affiliates' employees, staff, agents or independent contractors in connection with their activities under this Agreement; (b) any and all patent rights claiming any Invention described in clause (a) of this Section 11.1.3; and (c) any and all know-how embodied by or in any Invention described in clause (a) of this Section 11.1.3. Except as expressly set forth in this Section 11.1, the Parties shall jointly own all right, title and interest in and to: (i) any and all Inventions made jointly by the Parties or their respective Affiliates or their or their Affiliates' employees, staff, agents or independent contractors in connection with their activities under this Agreement; (ii) any and all patent rights claiming any Invention described in clause (i) of this Section 11.1.3; and (iii) any and all know-how embodied by or in any Invention described in clause (i) of this Section 11.1.3 (such Inventions, patent rights and know-how described in clauses (i) through (iii), the "**Joint Technology**"). Subject to the license grants set forth in this Agreement, each Party shall be free to exploit, either itself or through the grant of licenses to Third Parties (which Third Party licenses may be further sublicensable), Joint Technology, throughout the world without restriction, without the need to obtain further consent from the other Party, and without any duty to account or payment of any compensation to the other Party. Paratek shall have the sole right to prosecute, maintain and enforce any patent rights within the Joint Technology, in its sole discretion, provided that Paratek shall provide CIPAN with a reasonable opportunity to review and comment on any patent filings (such comments to be considered for implementation by Paratek in good faith) with respect to the Joint Technology prior to submission thereof. Inventorship shall be determined in accordance with United States patent laws.

11.2 Licenses.

11.2.1 Subject to the terms and conditions of this Agreement, during the Term, Paratek hereby grants to CIPAN, a non-exclusive, worldwide, non-transferable, non-sublicensable, royalty-free license under the Paratek Technology, including the Paratek Improvements, solely to the extent necessary for CIPAN to perform its obligations under this Agreement and the Quality Agreement, for the sole purpose of performing such obligations.

11.2.2 CIPAN shall, and hereby does, grant to Paratek a non-exclusive, worldwide, perpetual, irrevocable, sublicensable, royalty-free license under the CIPAN Technology, including the CIPAN Improvements, (a) to the extent necessary to effect any transfer of technology pursuant to this Agreement and (b) to conduct Paratek's business activities with respect to the Products and Paratek Products, including the Manufacture and exploitation of the Products and Paratek Products by Paratek, its Affiliates, Paratek Licensees or Third Parties[* * *].

11.3 Technology Transfer. Promptly following the Effective Date, and thereafter during the Term at least once per Calendar Quarter, or more often upon Paratek's reasonable request, CIPAN shall transfer to Paratek all CIPAN Technology, Paratek Improvements and Joint Technology in CIPAN's possession and not previo usly transferred to Paratek, for the purpose of enabling Paratek to exercise the license set forth in Section 11.2.2.

11.4 [†]

11.5 Rights in Bankruptcy. All rights and licenses granted under or pursuant to this Agreement by CIPAN are and shall otherwise be deemed to be, for purposes of Section 365(n) of the U.S. Bankruptcy Code or any analogous provisions in any other country or jurisdiction, licenses of right to "intellectual property" as defined under Section 101 of the U.S. Bankruptcy Code. CIPAN agrees that Paratek, as licensee of such rights under this Agreement, shall retain and may fully exercise all of their rights and elections under the U.S. Bankruptcy Code or any analogous provisions in any other country or jurisdiction. The Parties further agree that, in the event of the commencement of a bankruptcy proceeding by or against CIPAN under the U.S. Bankruptcy Code or any analogous provisions in any other country or jurisdiction, Paratek shall be entitled to a complete duplicate of (or complete access to, as appropriate) any such intellectual property and all embodiments of such intellectual property, which, if not already in Paratek's possession, shall be promptly delivered to it (a) upon any such commencement of a bankruptcy proceeding upon Paratek's written request therefor, unless CIPAN elects to continue to perform all of its obligations under this Agreement or (b) if not delivered under clause (a) above, following the rejection of this Agreement by or on behalf of CIPAN upon written request therefor by Paratek.

12. REPRESENTATIONS, WARRANTIES AND COVENANTS

12.1 Representation and Warranties of Each Party. Each of Paratek and CIPAN hereby represents, warrants and covenants to the other Party hereto as follows:

12.1.1 it is a corporation or entity duly organized and validly existing under the laws of the state or other jurisdiction of incorporation or formation;

12.1.2 the execution, delivery and performance of this Agreement by such Party has been duly authorized by all requisite corporate action and do not require any shareholder action or approval;

12.1.3 it has the power and authority to execute and deliver this Agreement and to perform its obligations hereunder;

12.1.4 the execution, delivery and performance by such Party of this Agreement and its compliance with the terms and provisions hereof does not and will not conflict with or result in a breach of any of the terms and provisions of or constitute a default under (i) a loan agreement, guaranty, financing agreement, agreement affecting a product or other agreement or instrument binding or affecting it or its property; (ii) the provisions of its charter or operative documents or by laws; or (iii) any order, writ, injunction or decree of any court or governmental authority entered against it or by which any of its property is bound; and

12.1.5 it shall comply with all applicable laws and regulations relating to its activities under this Agreement.

12.2 Representations and Warranties of CIPAN. CIPAN hereby further represents and warrants to Paratek as follows:

12.2.1 each Product at the time of delivery to Paratek (i) have been Manufactured, stored and shipped in accordance with cGMP and all applicable laws, rules, regulations or requirements; (ii) conform to the Specifications, are free from defects and are merchantable; (iii) are not adulterated or misbranded within the meaning of the FD&C Act; and (iv) have been shipped and stored in accordance with the procedures set forth under this Agreement and the Quality Agreement;

12.2.2 as of immediately prior to the delivery of each Product to Paratek, CIPAN has good and marketable title to all Products and Products are free from all liens, charges, encumbrances and security interests; and

12.2.3 CIPAN does not, at any time from and after the Effective Date, retain or use the services of (a) any person debarred under 21 U.S.C. § 335a or (b) any person who has been convicted of a crime as defined under the FD&C Act, in each case in any capacity associated with or related to the Manufacture or supply of Products or any service rendered to Paratek under this Agreement or the Quality Agreement.

12.3 Representation by Legal Counsel. Each Party hereto represents that it has been represented by legal counsel in connection with this Agreement and acknowledges that it has participated in the drafting hereof. In interpreting and applying the terms and provisions of this Agreement, the Parties agree that no presumption shall exist or be implied against the Party which drafted such terms and provisions.

12.4 [* * *]

13. INDEMNIFICATION, LIMITATION OF LIABILITY AND INSURANCE

13.1 Indemnification.

13.1.1 CIPAN shall indemnify, defend and hold harmless Paratek, its directors, officers, employees and agents (collectively, the "**Paratek Representatives**") from and against all damages, losses, liabilities, expenses, claims, demands, suits, penalties or judgments or administrative or judicial orders (including reasonable attorneys' fees and expenses) (collectively, "**Losses**") to, from or in favor of Third Parties to the extent resulting from or arising out of [* * *]; provided, however, that, in each case, CIPAN shall not be required to indemnify pursuant to this Section 13.1.1 with respect to any Losses to the extent arising from or related to [* * *]. The provisions of this Section shall survive the termination or expiration of this Agreement.

13.1.2 Paratek shall indemnify, defend and hold harmless CIPAN, its directors, officers, employees and agents (collectively, the "**CIPAN Representatives**") from and against all Losses to, from or in favor of Third Parties to the extent resulting from or arising out of [* * *]; provided, however, that, in each case, Paratek shall not be required to indemnify pursuant to this Section 13.1.2 with respect to any Losses to the extent arising from or related to [* * *]. The provisions of this Section shall survive the termination or expiration of this Agreement.

13.1.3 Each Party and its directors, officers, employees or agents (an "**Indemnified Party**") shall promptly notify the other Party (the "**Indemnifying Party**"), in writing, of any claim asserted or threatened against such Indemnified Party for which such Indemnified Party is entitled to indemnification hereunder from the Indemnifying Party. With respect to any such claim the Indemnified Party shall reasonably cooperate with and provide such reasonable assistance to such Indemnifying Party as such Indemnifying Party may reasonably request, and all reasonable out-of-pocket costs of such assistance shall be paid by the Indemnifying Party. Such reasonable assistance may include providing copies of all relevant correspondence and other materials that the Indemnifying Party may reasonably request. The obligations of an Indemnifying Party under Sections 13.1.1 and 13.1.2 are conditioned upon the delivery of written notice to the Indemnifying Party of any asserted or threatened claim promptly after the Indemnified Party becomes aware of such claim, provided that the failure of the Indemnified Party to give such notice or any delay thereof shall not affect the Indemnified Party's right to indemnification hereunder, except to the extent that such failure or delay impairs the Indemnifying Party's ability to defend or contest any such claim. The Indemnifying Party shall have the right to assume the defense of any suit or claim for which indemnification is sought. If the Indemnifying Party defends the suit or claim, the Indemnified Party may participate in (but not control) the defense thereof at its sole cost and expense. An Indemnifying Party may not settle a suit or claim, without the consent of the Indemnified Party, if such settlement would (a) impose any monetary obligation on the Indemnified

Party for which indemnification is not provided hereunder, (b) not include a full release of claims with respect to the Indemnified Party (c) require the Indemnified Party to submit to an injunction or (d) otherwise limit the Indemnified Party's rights under this Agreement. Any payment made by an Indemnifying Party to settle any such suit or claim shall be at its (or its insurer's) own cost and expense.

13.2 EXCEPT [* * *], IN NO EVENT SHALL EITHER PARTY BE LIABLE TO THE OTHER FOR SPECIAL, INDIRECT, PUNITIVE, EXEMPLARY, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING LOST PROFITS OR REVENUES) ARISING OUT OF, OR AS A RESULT OF, THE SALE, DELIVERY, NONDELIVERY, SERVICING, USE OR LOSS OF USE OF THE PRODUCT, REGARDLESS OF WHETHER SUCH CLAIM IS BASED ON BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, STRICT TORT OR OTHER THEORY.

13.3 Insurance. CIPAN shall obtain and maintain insurance adequate to cover its obligations under this Agreement, to the extent such obligations are insurable. Without limiting the foregoing, CIPAN shall obtain and maintain the following kinds of insurance with the minimum limits set forth below.

Kind of Insurance	Minimum Limits
[* * *]	[* * *]
[* * *]	[* * *]
[* * *]	[* * *]

Upon request, CIPAN shall furnish insurance certificates as directed by Paratek, satisfactory in form and substance to Paratek, showing the above coverages, and providing for at least ten (10) days' prior written notice to Paratek by the insurance company of cancellation or modification. Paratek shall be named as an additional insured on the CIPAN's policies. Coverage shall be procured with carriers [* * *].

14. TERM AND TERMINATION

14.1 Term. This Agreement shall commence on the Effective Date and continue, with respect to each Product, unless sooner terminated as set forth below in this Article 14 or in Article 16, for the duration of the Initial Term. After the Initial Term, this Agreement shall continue, with respect to each Product, for successive Renewal Terms unless either Party shall have given written notice of termination of this Agreement in its entirety or with respect to such Product to the other Party not less than [* * *] prior to the expiration of the Initial Term or the then-current Renewal Term.

14.2 Termination for Material Breach. In the event that either Party breaches any of its material obligations under this Agreement, the other Party may deliver written notice of such breach to the breaching Party. If the breaching Party fails to cure such breach within [* * *] following its receipt of such notice, the non-breaching Party may terminate this Agreement either in its entirety or on a Product-by-Product basis with respect to the Product to which such breach relates, by written notice to the breaching Party.

14.3 Termination for Insolvency. In the event that (i) either Party is declared insolvent or bankrupt by a court of competent jurisdiction; (ii) either Party files a voluntary petition of bankruptcy in any court of competent jurisdiction or (iii) this Agreement is assigned by either Party for the benefit of creditors, then the other Party may terminate this Agreement either in its entirety or on a Product-by-Product basis by delivering written notice of termination, effective immediately. Such termination shall not give rise to the payment of any penalty, damages or indemnity by the terminating Party.

14.4 Effects of Termination.

14.4.1 Termination of this Agreement for any reason shall be without prejudice to the right of either Party to receive all payments accrued and unpaid at the effective date of such termination or expiration, without prejudice to the remedy of either Party in respect to any previous breach of any of the representations, warranties or covenants herein contained and without prejudice to any other provisions hereof which expressly or necessarily call for performance after such termination.

14.4.2 Upon termination of this Agreement for any reason, (i) at Paratek's request, CIPAN shall supply Paratek with its inventory of Materials, finished Products and/or works-in-progress and, for requested items, Paratek shall pay CIPAN [* * *]; (ii) all Paratek Materials and Confidential Information of Paratek shall be returned to Paratek; and (iii) at Paratek's request, CIPAN shall return to Paratek all retention samples of Product.

14.4.3 Promptly following either Party's delivery of a notice of termination to the other Party, CIPAN shall cooperate with Paratek to transfer and transition supply of the Products to a Third Party supplier. Upon Paratek's request, CIPAN shall cooperate with Paratek in the transfer of technology and know-how necessary to Manufacture Products to such Third Party supplier, including providing Paratek and the Third Party supplier with reasonable access to the Facility and consulting services related to Manufacturing of the Product. CIPAN shall conduct such activities at [* * *] expense unless [* * *], in which case [* * *].

14.4.4 Notwithstanding anything to the contrary in this Agreement, if this Agreement is terminated by Paratek for any reason, upon Paratek's request, CIPAN shall continue to Manufacture and supply Products to Paratek pursuant to this Agreement until [* * *]. During such time as CIPAN is continuing to supply Products to Paratek pursuant to this Section 14.4.4, Paratek shall continue to make payments to CIPAN for such supply in accordance with this Agreement and, for clarity, all terms of the Agreement relevant to CIPAN's Manufacture and supply of Products shall survive termination and remain in effect.

14.5 Survival. The following provisions shall survive the expiration or termination of this Agreement: Article 1 (Definitions) (solely to the extent necessary to give meaning to other surviving sections), Section 7.4 (Payment) and Section 7.5 (Taxes and Other Charges) (in each case, solely with respect to payment obligations accruing prior to expiration or termination), Section 9.5 (Samples and Record Retention), Section 9.7 (Recalls and Seizure), Section 11.1 (Ownership of Intellectual Property), Section 11.2.2 (License to Paratek), Section 11.4 (Compliance with Tufts License), Section 11.5 (Rights in Bankruptcy), Section 13.1 (Indemnification), Section 13.2 (Third Party Liability), Section 13.3 (Insurance) (for [* * *] following expiration or termination of this Agreement), Section 14.4 (Effects of Termination), Article 15 (Confidentiality), Article 17 (Notices) and Article 18 (General). Without

limiting the foregoing, all of CIPAN's obligations under this Agreement relating to compliance with cGMP in respect of the Materials and Products shall continue in force following expiration or termination of this Agreement according to the requirements of cGMP.

15. CONFIDENTIALITY

15.1 Nondisclosure Obligation. Each of CIPAN and Paratek shall use only in accordance with this Agreement and shall not disclose to any Third Party the Confidential Information received by it from the other Party pursuant to this Agreement, without the prior written consent of the other Party. The foregoing obligations shall survive for a period of [* * *] after the termination or expiration of this Agreement. These obligations shall not apply to Confidential Information that:

(i) is known by the receiving Party at the time of its receipt, and not through a prior disclosure by the disclosing Party, as documented by business records;

(ii) is at the time of disclosure or thereafter becomes published or otherwise part of the public domain without breach of this Agreement by the receiving Party;

(iii) is subsequently disclosed to the receiving Party by a Third Party who has the right to make such disclosure; or

(iv) is developed by the receiving Party independently of the Confidential Information received from the disclosing Party and such independent development can be documented by the receiving Party.

15.2 Permitted Disclosures. Each Party may disclose the other Party's Confidential Information to its employees and Affiliates on a need-to-know basis and to its agents or consultants to the extent required to accomplish the purposes of this Agreement; provided that the recipient Party obtains prior agreement from such agents and consultants to whom disclosure is to be made to hold in confidence and not make use of such Confidential Information for any purpose other than those permitted by this Agreement. Each Party may also disclose the other Party's Confidential Information as required by law, regulation, rule, act or order of any governmental authority or agency to be disclosed by a Party; provided that notice is promptly delivered to the other Party in order to provide an opportunity to seek a protective order or other similar order with respect to such Confidential Information and thereafter the disclosing Party discloses to the requesting entity only the minimum Confidential Information required to be disclosed in order to comply with the request, whether or not a protective order or other similar order is obtained by the other Party. Each Party will use at least the same standard of care as it uses to protect proprietary or confidential information of its own to ensure that such employees, agents, consultants, and Affiliates do not disclose or make any unauthorized use of the other Party's Confidential Information.

15.3 Disclosure of Agreement. Neither CIPAN nor Paratek shall release to any Third Party or publish in any way any non-public information with respect to the terms of this Agreement without the prior written consent of the other Party, which consent shall not be unreasonably withheld or delayed, provided that either Party may disclose the terms of this Agreement

(i) to the extent required to comply with applicable laws, including the rules and regulations promulgated by the United States Securities and Exchange Commission; provided, further, that prior to making any such disclosure, the Party intending to so disclose the terms of this Agreement shall (a) provide the non-disclosing Party with written notice of the proposed disclosure and an opportunity to review and comment on the intended disclosure which is reasonable under the circumstances and (b) shall seek confidential treatment for as much of the disclosure as is reasonable under the circumstances, including, seeking confidential treatment of any information as may be requested by the other Party; or

(ii) to one (1) or more Third Parties and/or their advisors in connection with a proposed spin-off, joint venture, divestiture, merger or other similar transaction involving all, or substantially all, of the Products, assets or business of the disclosing Party to which this Agreement relates or to lenders, investment bankers and other financial institutions of its choice solely for purposes of financing the business operations of such Party; provided, further, that either (a) the other Party has consented to such disclosure or (b) such Third Parties have signed confidentiality agreements with respect to such information on terms no less restrictive than those contained in this Article 15.

15.4 Publicity. All publicity, press releases and other announcements relating to this Agreement or the transactions contemplated hereby shall be reviewed in advance by, and shall be subject to the approval of, both Parties.

16. FORCE MAJEURE

If the production, delivery, acceptance, or use of Products specified for delivery under this Agreement, or the performance of any other obligation of one of the Parties hereunder is prevented, restricted or interfered with by reason of any cause or event beyond the reasonable control of such Party and without the fault or negligence of such Party (a "**Force Majeure Event**"), the Party so affected, upon prompt notice to the other Party, shall be excused from performing such obligation during the continuance of such Force Majeure Event. If such Force Majeure Event continues for a period of [* * *] the other Party may terminate this Agreement by notice in writing provided that such Force Majeure Event is continuing. The affected Party as a result of a Force Majeure Event shall use all reasonable efforts, at its own expense, to eliminate the Force Majeure Event and to resume performance as soon as practicable.

17. NOTICES

17.1 Ordinary Notices. Correspondence, reports, documentation, and any other communication in writing between the Parties in the course of ordinary implementation of this Agreement shall be delivered by hand, sent by facsimile, overnight courier or by airmail to the employee or representative of the other Party who is designated by such other Party to receive such written communication at the address or facsimile numbers specified by such employee or representative.

17.2 Extraordinary Notices. Extraordinary notices and communications (including notices of termination, force majeure, material breach, change of address, requests for disclosure of Confidential Information, claims or indemnification) shall be in writing and sent to each Party by prepaid registered or certified airmail, or by facsimile confirmed by prepaid registered or certified airmail letter (and shall be deemed to have been properly served to the addressee upon receipt of such written communication) to the address set forth in Section 17.3 or such other address as notified in writing by such Party to the other Party.

17.3 Addresses.

If to Paratek:

Paratek Pharmaceuticals, Inc.
75 Park Plaza, 4th Floor
Boston, MA 02116
Attention: Vice President of Manufacturing

With a copy to:

Paratek Pharmaceuticals, Inc.
75 Park Plaza, 4th Floor
Boston, MA 02116
Attention: General Counsel

If to CIPAN:

CIPAN
Rua da Estação, n°42
2600-726 Castanheira do Ribatejo
Portugal
Attention: Chief Executive Officer

18. GENERAL

18.1 Governing Law. This Agreement shall be construed in accordance with and governed by the law of [* * *] without giving effect to its conflict of laws provisions.

18.2 Escalation of Disputes. In the event of any dispute relating to this Agreement or the Quality Agreement, either Party may refer such dispute to the Supply and Quality Committee for resolution. If the Supply and Quality Committee is unable to resolve such dispute within [* * *] of such referral, either Party may escalate such dispute to each Party's senior management for resolution. If each Party's senior management is unable to resolve such dispute within [* * *] of such escalation, either Party may commence arbitration pursuant to Section 18.3.

18.3 Arbitration. Any dispute relating to this Agreement or the Quality Agreement that cannot be resolved pursuant to Section 18.2 may be referred by either Party to confidential arbitration in accordance with the ICC Rules of Arbitration. The arbitration hearing shall be held as soon as practicable following submission to arbitration. The arbitration hearing shall be held in London, England. The Parties shall request that the arbitration panel render a formal, binding non-appealable resolution and award on each issue as expeditiously as possible. In any arbitration, the prevailing Party shall be entitled to reimbursement of its reasonable attorneys' fees and the Parties shall use all reasonable efforts to keep arbitration costs to a minimum. Judgment upon the award may be entered by any court having jurisdiction thereof or having jurisdiction over the relevant Party or its assets.

18.4 Assignment. This Agreement shall be binding upon and inure to the benefit of each Party and their respective heirs, successors and permitted assigns. This Agreement shall not be assignable or transferable by either Party hereto without the prior written consent of the other Party (such consent not to be unreasonably withheld, conditioned or delayed), except that Paratek may assign this Agreement without CIPAN's consent to an Affiliate, a Paratek Licensee or a successor in connection with the merger, consolidation, reorganization or sale of all, or substantially all, of the Products, assets or business to which this Agreement relates. Any permitted assignee of this Agreement shall agree in writing to comply with all obligations of the assigning Party under this Agreement. CIPAN shall not subcontract any of its work hereunder without Paratek's prior written consent and any such consent given by Paratek shall not release CIPAN from its obligations hereunder. For clarity, any Change of Control of CIPAN shall be deemed an assignment of this Agreement and subject to the provisions of this Section 18.4, regardless of the structure of such Change of Control.

18.5 Change of Control. During the Term, CIPAN will notify Paratek in writing if at any time CIPAN reasonably anticipates that a Change of Control will occur in the next thirty (30) days. [* * *]

18.6 Performance. Each Party agrees to perform its obligations under this Agreement, including under any Scope of Work, in a timely manner. CIPAN shall allocate adequate resources to execute its obligations under this Agreement, including under each Scope of Work. CIPAN represents and warrants that all Services shall be performed by qualified personnel in accordance with the highest industry standards.

18.7 Further Assurances. Each Party shall duly execute and deliver or cause to be duly executed and delivered, such further instruments and do and cause to be done such further acts, as may be necessary or appropriate in order to carry out the purposes and intent of this Agreement.

18.8 Entire Agreement. This Agreement, all Exhibits attached hereto, and the Quality Agreement (as the same may be amended from time to time by the written agreement of the Parties) constitute the entire agreement between the Parties with respect to the subject matter hereof and supersedes, as of the Effective Date, all other documents, agreements, verbal consents, arrangements and understandings between the Parties with respect to the subject matter hereof, including that certain Non-Disclosure Agreement between the Parties dated as of March 16, 2015, and that certain letter agreement between the Parties dated as of February 18, 2016. This Agreement shall not be amended orally, but only by an agreement in writing, signed by both Parties that states that it is an amendment to this Agreement.

18.9 Severability. If and to the extent that any provision (or any part thereof) of this Agreement is held to be invalid, illegal or unenforceable, in any respect in any jurisdiction, the provision (or the relevant part thereof) shall be considered severed from this Agreement and shall not serve to invalidate the remainder of such provision or any other provisions hereof. The Parties shall make a good faith effort to replace any invalid, illegal or unenforceable provision (or any part thereof) with a valid, legal and enforceable one such that the objectives contemplated by the Parties when entering this Agreement may be realized.

18.10 Independent Contractor. CIPAN shall act as an independent contractor and neither Party shall have any authority to represent or bind the other Party in any way.

18.11 No Waiver. Any waiver by one Party of any right or such Party or obligation of the other Party must be in writing and shall not operate as a waiver of any subsequent right or obligation.

18.12 Equitable Relief. CIPAN acknowledges that any breach or threatened breach by CIPAN of its obligations under this Agreement (including under any Scope of Work) will cause irreparable harm to Paratek and that money damages would not be adequate to remedy such harm. Therefore, in addition to any other remedies available at law or in equity, Paratek shall be entitled to injunctive relief to prevent any such breach, without proof of damages or posting of a bond.

18.13 Counterparts. This Agreement may be executed in one (1) or more counterparts, each of which shall be deemed an original, and together shall constitute one and the same agreement and shall become effective when one (1) or more counterparts have been signed by each of the Parties and delivered to the other Party, it being understood that both Parties need not sign the same counterpart. This Agreement, following its execution, may be delivered via PDF copies or other form of electronic delivery, which shall constitute delivery of an execution original for all purposes.

[*Signature page follows.*]

THIS EXHIBIT HAS BEEN REDACTED AND IS THE SUBJECT OF A CONFIDENTIAL TREATMENT REQUEST. REDACTED MATERIAL IS MARKED WITH [* * *] AND HAS BEEN FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the Effective Date.

PARATEK PHARMACEUTICALS, INC.

By: /s/ Evan Loh, MD
Name: Evan Loh, MD
Title: President

CIPAN − COMPANHIA INDUSTRIAL PRODUTORA DE ANTIBIÓTICOS, S.A.

By: /s/ Teresa Alves / /s/ Hector ARA
Name: Teresa Alves / Hector ARA
Title: CEO / President Board Directors

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EXHIBIT A

Prices

[* * *]

[* * *]

[* * *]	[* * *]	[* * *]
[* * *]	[* * *]	[* * *]

THIS EXHIBIT HAS BEEN REDACTED AND IS THE SUBJECT OF A CONFIDENTIAL TREATMENT REQUEST. REDACTED MATERIAL IS MARKED WITH [* * *] AND HAS BEEN FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION. WHERE SIX PAGES OF MATERIAL HAVE BEEN OMITTED, THE REDACTED MATERIAL IS MARKED WITH [●].

EXHIBIT B

[●]

Exhibit 10.29

THIS EXHIBIT HAS BEEN REDACTED AND IS THE SUBJECT OF A CONFIDENTIAL TREATMENT REQUEST. REDACTED MATERIAL IS MARKED WITH [* * *] AND HAS BEEN FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION.

Execution Version

Outsourcing Agreement

Between

Paratek Pharmaceuticals, Inc.

and

CARBOGEN AMCIS AG

Date

30 December 2016

THIS EXHIBIT HAS BEEN REDACTED AND IS THE SUBJECT OF A CONFIDENTIAL TREATMENT REQUEST. REDACTED MATERIAL IS MARKED WITH [* * *] AND HAS BEEN FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION.

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THIS AGREEMENT (this "Agreement"), dated December 30, 2016 (the "Effective Date"), is

BETWEEN:

Paratek Pharmaceuticals, Inc., a company having a place of business at 75 Park Plaza, 4th Floor, Boston, MA 02116, USA ("Customer")

AND:

CARBOGEN AMCIS AG, a company having a place of business at Hauptstrasse 171, CH 4416 Bubendorf, Switzerland ("Supplier" and, collectively with Customer, the "Parties", and each, a "Party).

WHEREAS:

A. Customer is the owner of certain technology and patent rights regarding the Product (as defined herein) having the description set out in Exhibit A (Description of Product) and Exhibit B (Chemical Synthesis);

B. Customer has filed / intends to file for approval with the United States Food and Drug Administration and/or its foreign equivalents, an Investigational New Drug Application ("IND") and a New Drug Application ("NDA"), and/or the foreign equivalents thereof, for certain formulations containing the Product;

C. Supplier is engaged in the business of performing contracted process development, Manufacturing and supply services of active pharmaceutical ingredients ("APIs") and intermediates; and

D. Customer desires that Supplier Manufacture the Product in bulk quantities, and Supplier desires to perform such services, each on the terms and conditions set out in this Agreement.

NOW THEREFORE, in consideration of the premises and the mutual covenants and agreements contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereto agree as follows:

Article 1Interpretation

1.1 Definitions

In this Agreement, in addition to words and phrases defined where they are used, the following words and phrases shall have the following meanings:

a) "Affiliate" of a Party shall mean any entity, directly or indirectly, controlling, controlled by, or under common control with a Party. For purposes of this definition, "controlling" (including, "controlled by" and "under common control") shall mean: (a) ownership of at least fifty percent (50%) of the equity capital or other ownership interest in or of an entity; (b) the power to control or otherwise direct the affairs of an entity; (c) in the case of non-stock organizations, the power to control the distribution of profits of an entity;

or (d) such other relationship as, in fact, results in actual control over the management, business, and affairs of an entity;

b) "Agreement" means this Supply Agreement for the Product, including all Exhibits attached hereto;

c) "Applicable Law" means any applicable law, statute, rule, regulation, order, judgment or ordinance of any governmental or regulatory authority or agency;

d) "Applicable Regulatory Authority" means FDA, EMEA and/or other equivalent governmental or regulatory authorities or agencies and any successors thereto;

e) "Business Day" means any day on which banking institutions in Boston, Massachusetts and Bubendorf, Switzerland are open for business;

f) "Campaign" means a schedule of one or more discrete batches of Product Manufactured in sequence by Supplier without pausing to change over to manufacture of any other product;

g) "cGMP Requirements" means the current Good Manufacturing Practices standards required under ICH Q7A guideline and/or any similar standards of applicable governmental and/or regulatory authorities as defined in the Quality Agreement;

h) "Change of Control" means any transaction or series of transactions wherein (a) the voting securities of Supplier outstanding immediately prior thereto cease to represent at least fifty percent (50%) of the combined voting power of the surviving entity immediately after such transaction or transactions; (b) the stockholders or equity holders of Supplier approve a plan of complete liquidation of Supplier, or an agreement for the sale or disposition by Supplier of all or substantially all of Supplier's assets, other than to an Affiliate; (c) a Third Party becomes the beneficial owner of fifty percent (50%) or more of the combined voting power of the outstanding securities of Supplier; or (d) substantially all of Supplier's business or assets which relate to this Agreement are sold or otherwise transferred to a Third Party;

i) "Chemical Synthesis" means established and reliable execution of chemical reactions in order to produce the "Product" by applying chemical and physical manipulations usually involving one or more reactions;

j) "Confidential Information" means all written information and data provided by the Parties to each other hereunder and identified as being "Confidential" and provided to the recipient, except that the term "Confidential Information" shall not apply to any information or any portion thereof which:

(i) was known to the recipient or any of its Affiliates, as evidenced by its written records, before receipt thereof under this Agreement;

(ii) is disclosed to the recipient or any of its Affiliates, without obligations of confidentiality, during the Term by a Third Party who has the right to make such disclosure;

(iii) is or becomes part of the public domain through no breach of this Agreement by the recipient; or

(iv) the recipient can demonstrate through competent written records is independently developed by or for the recipient or any of its Affiliates by individuals or entities who have not had access to the information disclosed under this Agreement.

The Confidential Information may include, without limitation, data, know-how, formulae, processes, designs, sketches, photographs, plans, drawings, specifications, samples, reports, studies, data, findings, inventions, ideas, production facilities, machines, production capacities, prices, market share, research and development projects, and other market data. For the purposes of this Agreement, Master Batch Record shall be deemed the Confidential Information of Customer and the Product Specifications shall be deemed the Confidential Information of Customer;

k) "Customer Licensee" means any Third Party to whom Customer grants a license or a right to research, develop, make, have made, use, sell, have sold, import, export or otherwise exploit a Product or Customer Product;

l) "Customer Material" means the compound satisfying the Customer Material Specification;

m) "Customer Material Specifications" means the specifications for the Customer Material set forth in the Quality Agreement, as such may be amended from time to time in accordance with its terms;

n) "Customer Product" means any pharmaceutical product owned, controlled or sold by Customer, its Affiliates or Customer Licensees that incorporates or is derived from a Product;

o) "Customer Technology" means:

[* * *];

p) "Drug Master File" or "DMF" means a submission to the Applicable Regulatory Authority that provides detailed information about facilities, processes or articles used in the Manufacture, processing, packaging and storing of a drug or excipient, among others, in order to obtain appropriate Applicable Regulatory Authority approval for the production for that drug;

q) "EMEA" means the European Medicines Agency and any successors thereto;

r) "FDA" means the United States Food and Drug Administration and any successors thereto;

s) "FD&C Act" means the Federal Food, Drug and Cosmetic Act, as the same may be amended or supplemented from time to time;

t) "Fees" means the fees specified in Exhibit C, as may be amended by the Parties in accordance with this Agreement;

u) "Improvements" means, in relation to any Intellectual Property, any and all versions, adaptations, modifications, improvements, enhancements, changes, revisions, translations and derivative works (whether complete or incomplete), of, to, in or based upon such Intellectual Property;

v) "Intellectual Property" means anything that is protected by any Rights in and to any and all patents, trade-marks, copyrights, industrial designs, Confidential Information, know-how and processes,

and all other intellectual and industrial property Rights whatsoever and world-wide (whether registered or unregistered and including Rights in any application for any of the foregoing);

w) "Manufacture," "Manufactured" or "Manufacturing" means all activities involved in the production of Products to be supplied to Customer or its Affiliates hereunder, including the preparation, formulation, finishing, testing, storage and packaging for shipment of Products and the handling, storage and disposal of any residues or wastes generated thereby;

x) "Manufacturing Process" means the activities set out in (a) this Agreement, (b) the Master Batch Record and (c) Supplier's standard operating procedures for the Manufacturing, characterization and testing, and bulk packaging and storage of the Product;

y) "Master Batch Record" means the complete detailed Manufacturing and control instructions and specifications for the Manufacturing Process for the Product, as defined by the applicable validation protocol and cGMP Requirements, as may be amended from time to time; in accordance with cGMP Requirements, or by mutual agreement of both Customer and Supplier;

z) "Materials" means any and all materials, reagents, chemicals, compounds, physical samples, models, specimens and any other similar physical substances that are used in the Manufacture of the Product except for Customer Materials, including processes and activities leading up to and peripheral to the Manufacture of the Product;

aa) "Product" means the compound product as described in Exhibit A satisfying the Product Specifications;

bb) "Product Specifications" means the specifications for the Product set forth in the Quality Agreement, as such may be amended from time to time in accordance with its terms;

cc) "Quality Agreement" shall mean that certain Quality Agreement Relating to Contract Manufacturing Services by and between Customer and Supplier, dated December 22, 2016;

dd) "Recall" means any action by Supplier, Customer or any of their respective Affiliates, to recover possession of the Product or finished products containing the Product shipped to Third Parties. "Recalled" and "Recalling" shall have comparable meanings;

ee) "Rights" shall mean any and all proprietary, possessory, use and ownership rights, titles and interests (whether beneficial or legal) of all kinds whatsoever, howsoever arising, world-wide and whether partial or whole in nature;

ff) "Seizure" means any action by an Applicable Regulatory Authority in any jurisdiction, to detain or destroy any Product or any intermediate or finished products containing the Product or prevent release of the Product or finished products containing the Product. "Seized" and "Seizing" shall have comparable meanings;

gg) "Services" refers to any activities undertaken by Supplier relating to the Product, as referenced in Section 6.6 (Services);

hh) "Supplier Technology" means, to the extent such is not Customer Technology: [* * *];

ii) "Term" means the Initial Term and the Renewal Term, if applicable;

jj) "Territory" means the United States of America and its territories and possessions and any other countries in the world added to the definition of "Territory" pursuant to Section 3.10;

kk) "Third Party" means any party other than a Party to this Agreement or an Affiliate of a Party to this Agreement; and

ll) "Yield" means, with respect to any batch of Product manufactured by Supplier under this Agreement, a percentage equal to the amount of Customer Material contained in such batch of Product delivered and accepted by Customer under this Agreement divided by the amount of Customer Material used in the Manufacturing Process of such batch of Product.

1.2 Other Definitions

Any words defined elsewhere in this Agreement shall have the particular meaning assigned to the words.

1.3 Currency

In this Agreement, all references to money or payments means U.S. Dollars and all payments made hereunder shall be made in that currency.

1.4 Headings

The headings in this Agreement are solely for convenience of reference and shall not be used for purposes of interpreting or construing the provisions hereof.

1.5 Exhibits

The Exhibits attached hereto shall be deemed to form an integral part of this Agreement. In the event of a conflict between the terms and conditions set out in this Agreement and the terms and conditions set out in any Exhibit hereto, the terms and conditions set out in this Agreement shall govern.

1.6 Applicable Law

This Agreement shall be governed by and construed in accordance with the substantive Laws of the [* * *], excluding any rules of conflicts of laws that would apply the substantive laws of any other jurisdiction.

Article 2Term

2.1 Term

[* * *]

This Agreement shall commence on the Effective Date and shall be valid until the [* * *] (the "Initial Term"). Both Parties shall use reasonably diligent efforts to come to a subsequent long-term agreement, including good faith negotiations regarding minimum volume-based Product commitments from Customer to Supplier, no later than [* * *] to replace this Agreement and serve as a long-term supply agreement between the Parties. Should the Parties have not agreed to the following agreement by [* * *], this Agreement shall automatically stay in force for a maximum of [* * *] (unless otherwise mutually agreed by the Parties or as otherwise set forth in Section 18.1(a)) or until the Parties have signed the follow-on agreement (the "Renewal Term").

2.2 Effect of Expiration on Purchase Orders

For the avoidance of doubt, any signed Purchase Order which has not been completed at the date of expiry shall continue in effect unless cancelled in accordance with Section 6.4 or Article 18. For further avoidance of doubt, the terms and conditions of this Agreement shall remain applicable to any such signed Purchase Order which continues in effect.

Article 3Supply of Product

3.1 Supply of Product

a) During the Term, Supplier shall Manufacture the Product and perform all Services at its facilities located at Bubendorf, Switzerland and at Neuland, Switzerland (such facilities, the "Facilities" and each, a "Facility"). Supplier will supply to Customer or Customer's designee, the Product, Manufactured in accordance with the accepted Purchase Order placed by Customer, Master Batch Record, the Product Specifications, the Quality Agreement and cGMP Requirements and, subject to Section 3.1(b), in such quantities as ordered by Customer in Purchase Orders submitted pursuant to Section 6.1 and accepted pursuant to Section 6.2.

b) [* * *]

c) [* * *]

d) In the event the Product manufactured and delivered to Customer under a Purchase Order is less than [* * *] of the amount ordered by Customer under such Purchase Order or if Customer otherwise reasonably requests, [* * *].

d) For clarity, nothing in this Section 3.1 limits Supplier's liability under this Agreement or under law, including liability for negligence, willful misconduct and failure to comply with Product Specifications; [* * *].

3.2 Manufacturing Services

Supplier will make available its labor, equipment and Facilities for the Manufacture and characterization of the Product, including in-process and quality control analyses, release testing, storage and bulk packaging of the Product, and shipping of the Product, in accordance with the terms and conditions of this Agreement.

3.3 Supply of Materials and Customer Material

a) Materials

i. Supplier shall, at its cost, be responsible for the purchase, planning, supply, control, testing, release and compliance of all Materials (other than Customer Materials unless expressly otherwise set forth in this Agreement) required for the Manufacture of the Product and performance of Services under accepted Purchase Orders.
ii. Supplier shall ensure that all Materials (other than Customer Material unless expressly otherwise set forth in this Agreement) used in the Manufacture of the Product and performance of Services shall comply with the specifications mutually agreed by the Parties in writing and applicable requirements of the Quality Agreement.
iii. Supplier shall test and inspect all Materials as set forth in the Quality Agreement and Supplier's standard incoming inspection and testing procedures, which at a minimum will include appearance and identity testing.

b) Customer Material

i. Customer or its designee (for which Customer is responsible) shall, at its cost, be responsible for the planning, supply, control, testing, release and compliance of all Customer Materials supplied to Supplier that are required for the Manufacture of the Product and performance of Services under accepted Purchase Orders. Customer shall ensure that all Customer Materials meet the Customer Material Specifications.
ii. Customer or its designee (for which Customer is responsible) shall, at its cost, be responsible for the qualification of suppliers of Customer Materials.
iii. Customer or its designee (for which Customer is responsible) shall ensure that all Customer Materials used in the Manufacture of the Product and performance of Services shall meet applicable requirements set forth in the Quality Agreement.
iv. Supplier shall test and inspect all Customer Materials in accordance with the Quality Agreement and Supplier's standard incoming inspection and testing procedures. Supplier shall also independently release Customer Materials (but Supplier shall not use any Customer Materials that have not also been released by Customer).
v. Upon receipt of a Purchase Order from Customer, Supplier will inform Customer of the latest delivery date required for Customer Materials [* * *]. Customer will use commercially reasonable efforts to coordinate delivery of Customer Materials by that date according to [* * *].

vi. If Customer is unable to deliver Customer Materials by the date required by Supplier, this will be promptly communicated to Supplier. Supplier will use commercially reasonable efforts to reallocate capacity and accommodate the planned Campaign at a later date. [* * *] Supplier will be released from its obligation under the relevant Purchase Order and any associated penalties regarding delivery date for the corresponding Product. In the event of any such delay in the delivery of Customer Materials to Supplier, the Parties shall negotiate in good faith and agree upon a revised schedule for the supply of Products to Customer or its designee, which revised schedule shall be binding on Supplier in accordance with this Agreement.

vii. In the event that Customer Materials delivered to Supplier are found by Supplier to be non-conforming to the Customer Material Specifications at the time of delivery of such Customer Materials to Supplier and Customer challenges this finding, the Parties shall conduct a joint investigation. If Supplier and Customer are unable to resolve the issue of non-compliance then a sample of the relevant Customer Material will be submitted to an independent laboratory reasonably acceptable to both Parties for testing against the Customer Material Specifications, and determination whether or not the Customer Material did not comply with the Customer Material Specifications at the time of delivery to Supplier. The test results of the independent laboratory testing shall be final and binding upon Customer and Supplier, and the fees and expense of such laboratory testing and the out-of-pocket costs reasonably incurred by the Parties in the joint investigation shall be [* * *] In such event, except as set forth in Section 3.3(b)(vi), Supplier shall be released from its obligation with respect to the relevant Purchase Order and any associated penalties regarding a delayed delivery date for the corresponding Product under such Purchase Order. In the event that Customer delivers any such non-conforming Customer Materials, the Parties shall negotiate in good faith and agree upon a revised schedule for the supply of Products to Customer or its designee, which revised schedule shall be binding on Supplier in accordance with this Agreement.

viii. Customer will provide Supplier with a Certificate of Analysis, a BSE/TSE statement and a Certificate of Compliance, data on the chemical and physical properties, toxicity, and handling, storing, and shipping information for any Customer Materials (MSDS or equivalent) and any other information that is necessary for the safe handling and transportation of Customer Materials. Customer shall update all of such information provided to Supplier after such updated information becomes available or known to Customer.

Following receipt of Customer Materials from Customer and until the delivery of Product containing such Customer Materials, Supplier shall bear the risk of any loss of or damage to such Customer Materials resulting from [* * *]. Supplier shall retain exclusive control over Customer Materials and shall not transfer any portion of them to any Third Party without the prior written consent of Customer. Supplier shall identify Customer Materials at all times as Customer property and shall segregate same from other substances except as needed for the Manufacture of the Product and performance of the Services. Supplier shall not take any action inconsistent with Customer's ownership interest in Customer Materials, including but not limited to, Supplier shall keep Customer Materials free and clear of any liens,

encumbrances, or security interests resulting from the actions or omissions of Supplier or its Affiliates and, in the event of any such liens, encumbrances, or security interests, Supplier shall promptly remove same at its sole expense.

3.4 Production Capacity

Supplier agrees to provide to Customer all such facility and Manufacturing capacity to perform the Manufacturing Process as required to meet the Product requirements as described in the then-current Short Term Rolling Forecast (as defined below). Supplier agrees that it shall provide to Customer at least [* * *] prior written notice of any scheduled shutdown at any Facility that may impact Supplier's ability to Manufacture and timely deliver the Product to Customer under this Agreement, [* * *].

For the avoidance of doubt, Supplier confirms that it has the capacity to deliver [* * *], or such adjusted amount as mutually agreed by the Parties. Batch size and annual capacity could be adjusted in the future by mutual agreement of the Parties based on results of ongoing scale up work.

3.5 Processing Changes

a) Supplier shall not make any material changes to the Manufacturing Process, starting materials, the Master Batch Record or Product Specifications for the Manufacture of the Product except in accordance with the Quality Agreement. For clarity, formatting changes in the documentation related to the Master Batch Record shall not be deemed a "material" change under this Section 3.5(a).

b) Customer (or Supplier, if changes are necessitated by Applicable Law) may request reasonable changes to the Manufacturing Process, the Master Batch Record, the Product Specifications, storage, testing or analytical methods or any starting materials for the Manufacture of the Product [* * *]. The notice of any such change by Customer shall comply with the cGMP documentation system and standard operating procedures maintained by Supplier at the Facilities. No material modifications or additions to the machinery, equipment and other fixed assets used by Supplier in the manufacture and supply of the Product to Customer shall be required without the consent of Supplier, which consent may be granted or withheld in Supplier's sole discretion.

c) In the event of a change to the Manufacturing Process, the Master Batch Record or the Product Specifications, the relevant documents and related Exhibits to this Agreement will be revised accordingly.

d) All operational Master Batch Records and standard operating procedures utilized by Supplier are in the German language. Any requirement by Customer for translation of such records will be billed at cost.

3.6 Monitoring of Facilities

Customer shall have the right to have a representative present at each Facility to observe the performance of the Manufacturing Process by Supplier during normal business hours with at least [* * *] advance notice. Supplier shall have the right to reasonably restrict such observation access to prevent

undue interference with Supplier's business operations or compromise Supplier's confidentiality obligations to Third Parties; provided, however, Customer's observation access shall be absolute with regard to the Manufacturing Process for the Product. As such it is Supplier's obligation to segregate Third Party documents and materials from Customer's documents and materials and Customer will not be restricted from observing any part of Customer's Manufacturing Process and related documentation.

3.7 Subcontracting

Supplier shall obtain Customer's prior written approval, in accordance with the Quality Agreement, to use a subcontractor to perform services under this Agreement, such approval not to be unreasonably withheld, conditioned or delayed. Any and all such contractors shall perform such services in accordance with the terms and conditions of this Agreement, and Supplier shall remain liable for the performance of its obligations under this Agreement. Supplier may use the Third Party suppliers set forth in Schedule 4 of the Quality Agreement for such specific activities set forth opposite their respective name(s) in such Schedule. It is hereby agreed that Customer may authorize the use of additional Third Party suppliers under this Agreement in accordance with the Quality Agreement. Supplier agrees to use the Third Party suppliers identified, as applicable, in Schedule 4 of the Quality Agreement as the exclusive suppliers of starting materials for the Product Manufacturing Process and any deviation from said supply sources requires the prior written approval of Customer, in accordance with the Quality Agreement, such approval not to be unreasonably withheld, conditioned or delayed.

3.8 [* * *]

3.9 [* * *]

3.10 Territory Expansion

At any time during the Term, Customer may provide written notice to Supplier of its intent to expand the Territory under this Agreement to include one or more additional countries or territories. Promptly following such notification, the Steering Committee (as defined below) shall meet to discuss any expansion of Supplier's Manufacturing capabilities necessitated by such expansion in accordance with clause (b) of Section 7.4 and the Parties shall execute an amendment that (a) amends the definition of "Territory" under clause jj) of Section 1.1 to include such additional countries or territories and (b) modifies the provisions of this Agreement as necessary in order to reflect the regulatory requirements of such additional countries or territories. For clarity, neither Party shall be obligated to amend the definition of Territory at any point during the Term.

3.11 Supply to Customer Licensees

In the event Customer delivers a written request to Supplier requesting that Supplier engage in negotiations with a Customer Licensee on the terms of a definitive agreement pursuant to which Supplier would Manufacture and supply Product to such Customer Licensee or a designee of a Customer Licensee, Supplier shall use commercially reasonable good faith efforts to negotiate and execute such agreement on substantially the same terms of this Agreement (including pricing, orders, forecasting, delivery, non-conformance, failure to supply, term and termination).

3.12 Alternative Supply

At any time during the Term, Customer may elect to qualify one or more alternative Manufacturing facilities (whether owned by a Third Party, Customer or by one of Customer's Affiliates) to Manufacture the Products (each, a "Backup Supplier"). Customer shall be responsible for any costs associated with qualifying Backup Suppliers. [* * *]. Supplier shall use commercially reasonable efforts to cooperate with the qualification of any Backup Supplier, including (a) technology transfer of all Supplier Technology necessary or useful for the Manufacture of the Products; provided that, to the extent that such technology and know-how constitutes Confidential Information of Supplier, it shall be subject to the provisions of Article 12 and Customer's designated alternative supplier shall be required to enter into a confidentiality agreement with Supplier containing substantially the same terms as Article 12 and (b) providing Customer and any Backup Supplier with consulting services related to the Manufacture, quality control and quality assurance of the Products. Any work related to technology transfer or qualification of a second supplier shall be considered as Services under this Agreement as described in Section 6.6. For the avoidance of doubt, Supplier will first prepare a customary Scope of Work describing the Services to be performed and the costs to Customer for the approval of Customer. No Services shall be commenced by Supplier unless (a) a customary Scope of Work relating to such Services has been agreed, executed and delivered by both Supplier and Customer; and (b) a Purchase Order has been issued by Customer and accepted by Supplier relating to such Services, which Purchase Order references the specific Scope of Work and this Agreement. In case of disagreement on the Scope of Work, the Parties will enter into good faith negotiations to reach a mutually satisfactory resolution.

Article 4Forecasts

4.1 Short Term Rolling Forecasts

Commencing on the Effective Date, Customer shall provide to Supplier on a calendar quarterly basis on or before the last Business Day of each calendar quarter during the Term, a short term rolling forecast for the [* * *] period commencing on the first day of the following calendar month (each, a "Short Term Rolling Forecast"). Each Short Term Rolling Forecast shall set out Customer's reasonable and genuine

estimate of the quantities of the Product to be ordered by Customer and to be delivered by Supplier under this Agreement for the following [* * *].

(A): In case of an order volume equal or less than [* * *]: The first [* * *] of each short term rolling forecast shall be binding firm purchase orders by Customer (each a "Purchase Order") and the last [* * *] of each short term rolling forecast shall be non-binding, good faith estimates. Customer shall provide Supplier with one or more Purchase Order(s) for Product consistent with the first [* * *] binding portion of each Short Term Rolling Forecast, at least [* * *] in advance of the scheduled delivery dates provided in such Purchase Order(s).

(B): In case of order volume larger than [* * *]: The first [* * *] of each short term rolling forecast shall be binding firm purchase orders by Customer (each a "Purchase Order") and the last [* * *] of each short term rolling forecast shall be non-binding, good faith estimates. Customer shall provide Supplier with one or more Purchase Order(s) for Product consistent with the first [* * *] binding portion of each Short Term Rolling Forecast, at least [* * *] in advance of the scheduled delivery dates provided in such Purchase Order(s).

4.2 Long Term Forecasts

Within [* * *] after the Effective Date, Customer shall provide to Supplier a long term forecast of the estimated quantities of the Product required by Customer from Supplier during the following [* * *] (the "Long Term Forecast"). Customer shall during the Term provide to Supplier together with the Short Term Rolling Forecast, on a calendar quarter basis, updates of such Long Term Forecasts for the following [* * *] (or the balance of the Term, if shorter). For the avoidance of doubt, the first [* * *] of each Long Term Forecast shall constitute the Short Term Rolling Forecast of which the first [* * *], or the first [* * *], as the case may be due to the order volume, shall be binding and the remainder of the Short Term Rolling Forecast and Long Term Forecast shall be non-binding.

Article 5Testing and Samples

5.1 Release Testing

a) Supplier shall perform release testing of all batches of Product prior to delivery to Customer in accordance with the Product Specifications and the Master Batch Record, to determine whether such batches of Product meet the requirements set out in the Product Specifications. Customer shall be responsible for the final release of Product prior to shipping and further processing.

b) Supplier shall ensure that:

(i) its quality assurance department approves each batch of Product for release promptly following successful completion of release testing done by its quality control department (in this section "promptly" means [* * *]); and

(ii) its quality assurance department does not release any batch of Product that does not meet the requirements set out in the Product Specifications without prior written consent of Customer.

c) Supplier shall prepare a Certificate of Analysis and Certificate of Conformance, setting out the results of the release testing and which shall be included with each batch of Product shipped to Customer.

d) Customer shall have the right to oversee the activities set forth in this Section 5.1 in accordance with the Quality Agreement.

5.2 Additional Release Testing

Customer reserves the right to conduct, in its sole discretion and at its expense, additional analytical testing on the Product.

5.3 Retention Samples

Supplier shall retain and store in accordance with cGMP Requirements, Applicable Law and Supplier's internal quality standard operating procedures, retention samples of each batch of Product Manufactured under this Agreement.

5.4 Stability Testing

If requested by Customer, Supplier shall be responsible for performing annual stability testing of the Product and shall ensure that all such testing is performed in compliance with the applicable ICH regulations (e.g. follow-up stability studies of commercially used products). Costs associated with annual stability testing will be quoted separately from commercial unit pricing under a separate Scope of Work or Purchase Order.

5.5 Reference Standards

If requested by Customer, Supplier shall be responsible for qualification and requalification of reference standards. Costs associated with qualification and requalification of reference standards will be quoted separately from commercial unit pricing under a separate Scope of Work or Purchase Order.

5.6 Preparation of Process Qualification

All costs associated with the preparation of process qualification (as but not limited to analytical method validation, process optimization, PAR studies, preparation of quality risk assessments, preparation of validation protocols and report per stage, preparation of validation master protocol and report, preparation of process performance assessment) will be handled separately from the commercial unit pricing under separate Scopes of Work or Purchase Orders. Until otherwise agreed, all pricing for process qualification services to be similar to current framework between Supplier and Customer.

Article 6Purchase Orders

6.1 Placement of Purchase Orders

Consistent with the Short Term Rolling Forecast as set forth in Section 4.1, Customer shall place with Supplier Purchase Orders, stating Customer's required delivery data, anticipated delivery schedule and the anticipated Fees, in accordance with the Fee Schedule set out in Exhibit C, for each delivery of Product to be made under this Agreement. Purchase Orders must have at least [* * *] of lead time before anticipated delivery to allow sufficient time for Supplier's planning, raw material purchases, production and release. Each Purchase Order shall constitute a firm, binding order, upon Supplier's acceptance thereof in accordance with Section 6.2.

6.2 Acceptance of Orders

Supplier may reject any Purchase Order placed by Customer that is not placed in accordance with this Agreement by giving written notice (e-mail shall constitute written notice) to Customer within a reasonable time, not to exceed [* * *] after receipt of each Purchase Order, setting out the reason for such rejection. In the event Supplier does not respond within [* * *], such Purchase Order shall be considered accepted by Supplier. In the event the ordered amount of Product under the Purchase Order differs more than [* * *] from the firm portion of the most recent Short Term Rolling Forecast or more than [* * *] from the firm portion of the most recent Short Term Rolling Forecast, Supplier shall [* * *].

In the event the terms and conditions of this Agreement conflict with the terms and conditions of the Purchase Order, the terms and conditions of this Agreement shall take precedence unless otherwise agreed upon by the Parties.

6.3 Delays

If, after acceptance of a Purchase Order, Supplier is unable for any reason to supply quantities of the Product in accordance with the Purchase Orders placed by Customer under Section 6.1 on the timelines set forth therein, Supplier shall inform Customer within [* * *] of becoming aware of its inability to supply the Product of the expected duration of such inability and shall keep Customer informed on a timely basis of developments during any such period of time. The Parties shall cooperate to expedite the scheduling of the resumption of Manufacture of the Product by Supplier when any such inability has been alleviated. In the event of any delay in delivery of Product from the delivery date on the applicable Purchase Order for such Product, if such delay is: [* * *].

6.4 Cancellation of Purchase Orders

In the event that Customer cancels all or part of a Purchase Order already accepted by Supplier, Supplier will use best efforts to reallocate capacity and mitigate any resultant costs of such cancellation. Except as expressly set forth in Section 3.4, Section 6.2, Section 6.3 and Section 6.5, the following will be charged to Customer:

[* * *]

6.5 Material Failure of Supply

If Supplier, for any reason, fails to supply at least [* * *] of the units of Product ordered by Customer pursuant to valid Purchase Orders during any period of [* * *] or longer beginning on the requested delivery date, in addition to and without limiting any other remedies available to Customer, [* * *].

6.6 Services

From time-to-time during the Term, Customer may request that Supplier perform Services for Customer relating to the Product, for which Customer shall pay reasonable compensation to Supplier. In the event that Supplier is willing to perform any such Services requested by Customer, Supplier will first prepare a scope of work describing the Services to be performed and the costs to Customer for the approval of Customer (each a "Scope of Work"). No Services shall be commenced by Supplier unless (a) a Scope of Work relating to such Services has been agreed, executed and delivered by both Supplier and Customer; and (b) a Purchase Order has been issued by Customer and accepted by Supplier relating to such Services which Purchase Order references the specific Scope of Work and this Agreement. Customer shall have the right to terminate any Scope of Work and corresponding Purchase Order for Services at any time on reasonable advance written notice to Supplier (without terminating this Agreement), in which case Customer shall be responsible for:

[* * *]

Article 7Shipment of Product

7.1 Storage of Product

Supplier shall ensure that all Product held in storage is stored in accordance with the Product Specifications until shipped to Customer under this Agreement and that all storage areas meet cGMP Requirements. [* * *]

Should any Product, during storage, change chemical composition, then Supplier and Customer will agree upon a plan for disposition of the Product, including possible disposal, reworking or using the Product "as is." For clarity, Supplier shall not commence any action set forth in the preceding sentence until such a plan has been agreed by Customer. The cost of reworking the Product shall be borne by [* * *].

The cost of storage, monitoring (including any on-going analytical analysis), and insurance before shipment shall be borne by [* * *].

7.2 Release and Shipment of Product

a) Supplier shall notify Customer by facsimile or electronic transmission of each batch of Product Manufactured by it under this Agreement in accordance with this Article 7 as soon as reasonably possible, and no later than [* * *], after Supplier's quality assurance department approves the batch for release following successful completion of the release testing procedures.

b) Supplier shall pack and label shipping boxes and ship all orders of Product in a prompt and timely manner and in accordance with international transport guidelines and regulations, the Product Specifications, and Customer's reasonable written instructions including, as applicable, for such shipment and the terms of this Agreement.

c) Supplier shall not sell or otherwise dispose of any Product except in accordance with the terms and conditions of this Agreement.

d) The Products will be shipped [* * *]. All freight, applicable taxes (excluding any and all income taxes, employment taxes and the like incurred by Supplier), duties, express and delivery charges shall be for Customer's account and shall not be subject to discount. Delivery shall be deemed completed and risk of loss or damage of the Products shall pass to Customer upon [* * *]. Title to the Products shall pass to Customer upon [* * *].

7.3 Documentation

Supplier shall include with each shipment of Product shipped to Customer under Section 7.2:

a) commercially appropriate documentation;

b) a Certificate of Analysis and Certificate of Compliance in English for each batch of Product included in the shipment, in the forms set out in Exhibit D; and

c) a copy of any deviation or investigation reports concerning each batch of Product shipped (to be sent separately from shipment as part of the batch record documentation).

7.4 Steering Committee

The Parties agree to form a steering committee (the "Steering Committee") to oversee their interactions under this Agreement as provided herein. Each Party shall name a mutually agreed upon equal number

of representatives to the Steering Committee, which shall meet either in person or remotely (as mutually agreed) at least [* * *], or as otherwise mutually agreed by the Parties. The primary function of the Steering Committee is to ensure the ongoing communication between the Parties and discuss and resolve any issues arising under this Agreement. The Steering Committee shall in particular have responsibility for the following: (a) reviewing key metrics for the Product's production and quality, and reviewing and monitoring any required remediation with respect to production and quality for the Product; (b) reviewing Supplier's capacity and short-term and long-term planning for clinical and commercial supply of the Product, including anticipating any capacity shortfalls and discussing the cost allocation of investments required to increase capacity or improve efficiencies; (c) [* * *]; (d) reviewing and discussing draft Scopes of Work; (e) discussing the cost allocation, if any, of extraordinary costs incurred by Supplier in connection with the Manufacture of Products or provision of Services; and (f) establishing resource priorities and resolving resource conflicts.

Article 8Acceptance of Shipments

8.1 Acceptance of Shipments

Customer or its designees shall, within a period of [* * *] after the date of physical receipt of any shipment of Product from Supplier, inspect the Product for any shortages or any defects or deviations of the Product Specifications (hereinafter "Out Of Specification") that would be apparent from visual inspections of the Product. In the event that Customer is of the opinion that the Product is Out Of Specification at the time of delivery, Customer shall, within [* * *] after the date of physical receipt of Product, provide Supplier with a written notice to reject the Product (a "Notice of Rejection"), which shall include a description of the grounds for rejection and copies of test reports and testing methodology conducted on the Product, if any. However, with respect to any Out Of Specification Product which would not be apparent from a reasonable visual inspection on delivery, including in the case of any hidden defects, such Notice of Rejection shall be provided to Supplier not later than [* * *].

The failure of Customer or its designees to notify Supplier of any Out Of Specification Product in the manner set forth herein above shall constitute confirmation of the acceptance thereof.

8.2 Dispute of Rejected Product

Supplier may, at its option, within [* * *] of receipt of any Notice of Rejection under Section 8.1, challenge the Notice of Rejection by delivering written notice thereof to Customer. In the event that Supplier challenges the Notice of Rejection, Customer and Supplier shall conduct a joint investigation. If Supplier and Customer are unable to resolve the issue of non-compliance then a sample of the Product will be submitted to an independent laboratory reasonably acceptable to both Parties for testing against the Product Specifications, and determination whether or not the non-compliance may be caused by a fault on the part of Supplier. The test results of the independent laboratory testing shall be final and

binding upon Customer and Supplier, and the fees and expense of such laboratory testing shall be borne entirely by the Party against whom such laboratory's findings are made.

8.3 Remedies

a) Except as set forth in this Agreement, in the event of a Product shortage[* * *].

b) In the event that Customer issues a timely Notice of Rejection in respect to any Out Of Specification Product:

[* * *]

The Party in possession of any rejected Product which does not comply with the Product Specifications or cGMP Requirements shall destroy, in accordance with all Applicable Law and in a manner to which Customer has given its prior written approval, all rejected Product in its possession, but only after the Parties have followed the procedures specified under Sections 8.2 and 8.3. No rejected Product shall be sold, reprocessed, salvaged, reclaimed or otherwise reused in any manner by Supplier or Customer without the prior written agreement of the Parties with the exception of use testing and analysis by Supplier and/or Customer in the investigating the cause of Product rejection. Representatives of the Party not performing the destruction shall be permitted to witness the destruction of the rejected Product under this section.

Article 9Fees

9.1 Fees

a) Customer shall pay to Supplier, in respect of each Purchase Order placed by Customer, the applicable Fees for the supply of the Product in bulk quantities under this Agreement, in accordance with the terms of this Agreement.

b) Except as otherwise expressly provided in this Agreement, the Fees specified in each Purchase Order accepted by Supplier shall be full compensation for all Manufacturing and characterization activities and Materials in respect thereof. Customer shall make all requests for processing changes to be performed under this Agreement in writing under Section 3.5 and Supplier shall provide Customer a cost estimate for such work.

9.2 Adjustments to Fees

During the Term of this Agreement, either Party may request an increase or decrease of the Fees specified in Exhibit C no more than [* * *] and such change in Fees shall take effect on [* * *] for which such Fee change is requested. Such change in Fees may be requested due to any of the following events:

[* * *] or

(iii) any other cost adjustments mutually agreed to by the Parties via the Steering Committee.

Supplier will make available to Customer records that substantiate any adjustment to Fees for a Product proposed by Supplier and Supplier will provide Customer with any Customer records that provide evidence for a decrease in Fees pursuant to clause (i); such records to be considered Supplier's Confidential Information hereunder.

The Party proposing an adjustment in the Fees will notify the other Party of the adjustment by delivering to the other Party at least [* * *] prior to the effective date of the Fees adjustment, written notice of the proposed adjustment. Said written notice shall specify the effective date as [* * *] in which the Fee adjustment becomes effective and the amounts for the adjusted Fees. On receipt of such request, the Parties shall seek in good faith to agree to an adjustment of the Fees, based on such reasonable and objective evidence. Each Party shall use its commercially reasonable efforts to mitigate any cost increase. The Fees for any Product ordered by Customer prior to the effective date of the Fees adjustment shall be the Fees existing on the date Customer placed the Purchase Order, as set out in the Purchase Order.

9.3 Taxes

The Fees shall be exclusive of any taxes, customs duties, levies and other charges applicable to the supply of the Product under this Agreement ("Taxes"). Customer shall pay any Taxes and reimburse Supplier for any Taxes for which Customer is responsible but which have been paid by Supplier. Subject to compliance with laws, the Parties shall reasonably cooperate to eliminate or minimize the amount of any such Taxes imposed on the transactions contemplated in this Agreement. For clarity, Customer shall not be liable for any taxes incurred by the Supplier including, without limitation, income taxes, employment taxes, use taxes, and the like incurred by Supplier, or for any penalties or interest related to the failure of Supplier to collect sales, use, VAT or similar taxes.

Article 10Invoicing and Payment

10.1 Issuance of Invoices

Supplier shall, in accordance with Section 10.2, invoice Customer for each Purchase Order accepted under Section 6.2 as follows:

10.2 Invoice Contents

All invoices issued by Supplier under Section 10.1 shall show:

a) the actual quantity of Product shipped;

b) the lot number of each batch of Product shipped;

c) the Fees for the quantity of Product shipped, based on the Fees for the Product set out in the applicable Purchase Order; and

d) the Purchase Order number placed by Customer for the Product shipped.

If Customer disputes for any reason with the amount of any invoice submitted by Supplier, Customer shall notify Supplier of such dispute within [* * *] after the date of the invoice, and the Parties shall promptly attempt to resolve the dispute. If Customer does not notify Supplier of any such dispute within such [* * *] period, such invoice will be final and binding on Customer and Supplier, subject to the correction of mathematical errors.

10.3 Delay of Shipment

If Customer delays shipment of Product released by Supplier in accordance with Section 7.2, Supplier may issue its invoice under Section 10.1 on or after the release, with reference to the Product released under Section 10.2.

10.4 Payment of Invoices

Each invoice provided by Supplier to Customer under Section 10.1, to the extent accurate, shall be paid by Customer to Supplier within [* * *] after the date of the invoice to the extent that Customer does not reasonably dispute that portion of the invoice in good faith.

All payments will be made in U.S. Dollars by SWIFT bank transfer directly to the Supplier account as specified in the respective Purchase Orders.

Article 11Intellectual Property

11.1 Title

a) The Parties agree that, as between Customer and Supplier, each Party owns its respective Confidential Information, Customer owns all Rights in and to the Customer Technology, the Product(s) and its Chemical Synthesis and Supplier owns all Rights in and to Supplier Technology.

b) Supplier shall not knowingly use in the Manufacturing Process any Intellectual Property protected by any patent or patent application licensed to Supplier by any Third Party, except with the prior written consent of Customer.

11.2 No Grant of Rights

Except as otherwise provided herein, neither Party hereto shall be deemed by this Agreement to have been granted any Rights of the other Party.

THIS EXHIBIT HAS BEEN REDACTED AND IS THE SUBJECT OF A CONFIDENTIAL TREATMENT REQUEST. REDACTED MATERIAL IS MARKED WITH [* * *] AND HAS BEEN FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION.

Execution Version

11.3 Grant of License by Customer

During the Term, Customer hereby grants to Supplier a paid-up, royalty-free, non-exclusive license, without the right to sublicense, to Customer's Confidential Information and the Customer Technology reasonably necessary to Manufacture and supply to Customer the Product hereunder, but only for such purposes. The Parties agree that the license grant contained in this Section 11.3 is personal to Supplier only and shall be exercised by Supplier only, and Supplier agrees to make use of Customer's Confidential Information and the Customer Technology only in accordance with this license and not to disclose any such Confidential Information or Customer Technology to any Third Party, except that nothing herein shall prevent Supplier from disclosing to its permitted subcontractors under confidentiality obligations at least as strict as those that bind Supplier under this Agreement, as necessary to perform Supplier's obligations hereunder.

11.4 Ownership of Inventions

With respect to any ideas, innovations, Improvements or inventions (whether patentable or non-patentable) developed by Supplier during the Term of this Agreement and [* * *], the Parties agree that, as between Customer and Supplier, Customer shall own all Rights to such Inventions and may obtain patent, copyright, and other proprietary protection respecting such Inventions. Supplier agrees to promptly disclose any Inventions to Customer. Supplier agrees to assign (and cause its employees or permitted subcontractors to assign), and does hereby assign, any and all rights, title and interests of Supplier in, to or under any Inventions to Customer. [* * *]

11.5 Patents to Inventions

With respect to all Intellectual Property created or developed under this Agreement, [* * *].

11.6 No Use of Trademarks

Nothing contained herein shall give either Party any right to use any trademark of the other Party. All trademarks and service marks adopted by Customer to identify the Product or a Customer Product are and shall remain the property of Customer.

11.7 [†]

Article 12 Confidentiality & Publicity

12.1 Obligation of Confidentiality

It is contemplated that in the course of the performance of this Agreement each Party may, from time to time, disclose Confidential Information to the other. Each Party agrees:

a) to keep and use in strict confidence all Confidential Information of the other Party that each Party acquires, sees, or is informed of, as a direct or indirect consequence of this Agreement and to not, without the prior written consent of the other Party, disclose any such Confidential Information or recollections thereof to any person or entity other than its corporate counsel, employees and contractors who are under an obligation of confidentiality on terms substantially similar to those set out in this Agreement, who have been informed of the confidential nature of the Confidential Information and who reasonably require such information in the performance of their duties under this Agreement;

b) not to use, copy, duplicate, reproduce, translate or adapt, either directly or indirectly, any of the Confidential Information of the other Party or any recollections thereof for any purpose other than the performance of the Services and the Manufacture and characterization of the Product under this Agreement, without the other Party's prior written approval;

c) that all copies, duplicates, reproductions, translations or adaptations of any Confidential Information of the other Party permitted to be made hereunder shall be clearly labelled as confidential; and

d) to take all reasonable steps to prevent material in its possession that contains or refers to Confidential Information of the other Party from being discovered, used or copied by Third Parties and to use reasonable steps to protect and safeguard all Confidential Information of the other Party in its possession from all loss, theft or destruction.

Upon the termination of this Agreement, each Party shall promptly destroy or return all Confidential Information to the disclosing Party in accordance with Section 18.4.

12.2 Disclosure with Consent

A Party receiving Confidential Information may, with the written consent of the disclosing Party, disclose such Confidential Information to entities or persons other than its corporate counsel, employees and contractors, on such terms and conditions as the disclosing Party may specify.

12.3 Publicity

During the Term, the Parties agree that no press release, public announcement or publication regarding this Agreement or the relationship of the Parties (except to the extent that it may be legally required), shall be made unless mutually agreed to in writing prior to the release or dissemination of any such press release, public announcement or publication.

12.4 Disclosure Required by Law

No provision of this Agreement shall be construed so as to preclude such disclosure of Confidential Information of the other Party as may be inherent in or reasonably necessary to the securing from any governmental agency of any necessary regulatory approval or license. To the extent required by legal process, subpoena, warrant, or court order, either Party may disclose Confidential Information only to the extent required to comply with said legal proceeding, provided that the Party obligated to make such disclosure shall, when lawfully permissible, provide reasonable prior notice the other Party so as to allow the other Party to take steps to oppose or limit the required disclosure.

12.5 Employee Confidentiality and Invention Assignment**.**

(a) Supplier acknowledges and agrees that, with respect to any past or current employee, staff, contractor, subcontractor or other agent of Supplier or its Affiliates who has conducted services or activities related to the development, manufacture or supply of Products for or to Customer (collectively, the "Supplier Employees"), Supplier or its Affiliate has entered into a binding written arrangement(s) with each such Supplier Employee that requires: (i) that such Supplier Employee will, at a minimum, keep the Confidential Information of Customer confidential and only use such Confidential Information to conduct permitted activities for Customer under Supplier's employment; and (ii) that such Supplier Employee assign to Supplier all of its right, title and interest in and to any inventions (including, without limitation, know-how, improvements, ideas, information, materials and processes) and all intellectual property rights therein that such Supplier Employee, alone or jointly with others, conceives, develops or reduces to practice during their period of employment or work with Supplier or its Affiliate.

(b) Supplier further covenants and agrees that, (i) with respect to any future Supplier Employee, Supplier or its Affiliate shall enter into a binding written arrangement with such Supplier Employee as set forth in Section 12.5(a) and (ii) with respect to any binding written arrangement referred to in this Section 12.5(b) or Section 12.5(a), Supplier shall enforce, to the fullest extent permitted under Applicable Law, the terms and provisions of such arrangement.

12.6 Duration of Obligation

Unless otherwise agreed by the Parties in writing, the obligations of the Parties relating to Confidential Information set out in this Article 12 shall survive the termination of this Agreement for a period of [* * *].

Article 13Representations, Warranties and Covenants

13.1 Supplier's Representations, Warranties and Covenants

Supplier hereby represents, warrants and covenants to Customer as follows:

a) Supplier has been duly organized and is validly subsisting and in good standing in its jurisdiction of organization and has the power to carry on the business as now being conducted by it;

b) the execution, delivery and performance of this Agreement by Supplier have been duly authorized by all requisite corporate action and do not require any shareholder action or approval;

c) Supplier has the right and authority to enter into this Agreement and perform its obligations hereunder, and this Agreement is a legal and valid obligation binding upon Supplier and enforceable in accordance with its terms;

d) Supplier has not made and will not make any commitments to Third Parties inconsistent with or in derogation of Supplier's obligations under this Agreement and Supplier is to its knowledge not subject to any obligations that would prevent it from entering into or carrying out its obligations under this Agreement, and Supplier's compliance with the terms and provisions hereof does not and will not conflict with or result in a breach of any of the terms and provisions of or constitute a default under (i) a loan agreement, guaranty, financing agreement, agreement affecting a Product or other agreement or instrument binding or affecting it or its property; (ii) the provisions of its charter or operative documents or by-laws; or (iii) any order, writ, injunction or decree of any court or governmental authority entered against it or by which any of its property is bound;

e) Supplier shall comply with all Applicable Law relating to its activities under this Agreement;

f) all Product delivered to Customer under this Agreement will have been Manufactured, stored and shipped in a competent fashion in accordance with the Master Batch Record, the Product Specifications, this Agreement, the Quality Agreement, Applicable Law and cGMP Requirements by qualified personnel and, to Supplier's knowledge, will be free from defects;

g) the Facilities, including equipment, systems, utilities and services, complies with cGMP Requirements for the Manufacture of the Product under this Agreement;

h) the Facilities and Supplier's procedures and processes in the Facilities are in compliance with Applicable Law, including applicable environmental, health and safety requirements, for the Manufacture of the Product under this Agreement;

i) Supplier does not, at any time from and after the Effective Date, retain or use the services of (i) any person debarred under 21 U.S.C. § 335a or (ii) any person who has been convicted of a crime as defined under the FD&C Act, in each case in any capacity associated with or related to the Manufacture or supply of Products or any service rendered to Customer under this Agreement or the Quality Agreement;

j) all Product supplied by Supplier under this Agreement shall be delivered by it free and clear of any security interests, liens, claims, pledges or encumbrances of any kind or nature except for such as are created by Customer; and

k) all records and reports required to be maintained by Supplier under cGMP Requirements shall be accurate and complete in all material respects.

In no event shall Customer seek to recover a refund for, or replacement to, an Out of Specification Product due to Supplier's breach of Sections 13.1 (f), (g) or (h) except pursuant to Article 8.

13.2 Customer's Representations, Warranties and Covenants

Customer hereby represents, warrants and covenants to Supplier as follows:

a) Customer has been duly organized and is validly subsisting and in good standing in its jurisdiction of organization and has the power to carry on the business as now being conducted by it;

b) the execution, delivery and performance of this Agreement by Customer have been duly authorized by all requisite corporate action and do not require any shareholder action or approval;

c) Customer has the right and authority to enter into this Agreement and perform its obligations hereunder, and this Agreement is a legal and valid obligation binding upon Customer and enforceable in accordance with its terms;

d) Customer has not made and will not make any commitments to Third Parties inconsistent with or in derogation of Customer's obligations under this Agreement and Customer is not subject to any obligations that would prevent it from entering into or carrying out its obligations under this Agreement, and Customer's compliance with the terms and provisions hereof does not and will not conflict with or result in a breach of any of the terms and provisions of or constitute a default under (i) a loan agreement, guaranty, financing agreement, agreement affecting a Product or other agreement or instrument binding or affecting it or its property; (ii) the provisions of its charter or operative documents or by-laws; or (iii) any order, writ, injunction or decree of any court or governmental authority entered against it or by which any of its property is bound;

e) Customer shall comply with all Applicable Law relating to its activities under this Agreement; and

f) to Customer's knowledge, [* * *].

13.3 No Other Warranty

THE WARRANTIES SET OUT IN SECTIONS 13.1 AND 13.2 ARE THE SOLE WARRANTIES MADE BY EITHER PARTY TO THE OTHER AND TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE PARTIES HEREBY DISCLAIM ANY AND ALL OTHER WARRANTIES, REPRESENTATIONS OR GUARANTEES OF ANY KIND WHATSOEVER, EITHER EXPRESS OR IMPLIED, REGARDING THE PRODUCT OR ANY OTHER MATERIALS OR SERVICES TO BE SUPPLIED UNDER THIS AGREEMENT, INCLUDING, BUT NOT LIMITED TO ANY EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

13.4 No Consequential Damages and Limitation of Liability

a) [* * *], IN NO EVENT SHALL EITHER PARTY BE LIABLE FOR ANY SPECIAL, CONSEQUENTIAL, PUNITIVE, INCIDENTAL OR INDIRECT DAMAGES, OR LOST PROFITS, HOWEVER CAUSED, ON ANY THEORY OF LIABILITY. THIS LIMITATION WILL APPLY EVEN IF THE OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

b) EXCEPT AS SET FORTH BELOW IN THIS SECTION 13.4(b), IN NO EVENT WILL SUPPLIER'S LIABILITY, [* * *], BE GREATER THAN, PER CLAIM OR SERIES OF CLAIMS ARISING FROM THE SAME CAUSE OF ACTION, [* * *].

EXCEPT AS SET FORTH BELOW IN THIS SECTION 13.4(b), [* * *], AS APPLICABLE, IN NO EVENT SHALL A PARTY'S LIABILITY, HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, BE GREATER THAN, PER CLAIM OR SERIES OF CLAIMS ARISING FROM THE SAME CAUSE OF ACTION, [* * *].

EXCEPT AS SET FORTH BELOW IN THIS SECTION 13.4(b), WITH RESPECT [* * *], IN NO EVENT SHALL A PARTY'S LIABIITY BE GREATER THAN, PER CLAIM OR SERIES OF CLAIMS ARISING FROM THE SAME CAUSE OF ACTION, [* * *].

NOTWITHSTANDING ANYTHING TO THE CONTRARY IN THIS SECTION 13.4(b), WITH RESPECT TO [* * *] IN NO EVENT SHALL SUPPLIER'S LIABILITY, HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, BE GREATER THAN, PER CLAIM OR SERIES OF CLAIMS ARISING FROM THE SAME CAUSE OF ACTION, [* * *].

[* * *]

Article 14Indemnification

14.1 Indemnification of Supplier

Customer shall indemnify, defend and hold harmless Supplier and its officers, directors, agents, servants and employees against any and all actions, claims, demands, proceedings, suits, losses, damages, costs and expenses (including reasonable legal fees) of Third Parties (in this Article 14, "Claims") (including Claims for personal injury or death) to the extent such Claims result from or arise out of [* * *], except, in each case of clause (a) and (b), to the extent Supplier has an obligation to indemnify Customer pursuant to Section 14.2 or 14.3.

14.2 Indemnification of Customer

Supplier shall indemnify, defend and hold harmless Customer and its Affiliates and Customer Licensees, and their respective officers, directors, agents, servants, employees and consultants against any and all Claims (including Claims for personal injury or death) to the extent such Claims result from or arise out of [* * *], except, in each case of clause (a) and (b), to the extent Customer has an obligation to indemnify Supplier pursuant to Sections 14.1 or 14.3.

14.3 [*** * ***]

14.4 Indemnification Procedure

The indemnities contained in this Article 14 shall be conditional on compliance with the terms and conditions set out in this Section 14.4. The indemnifying Party shall have the option to defend, contest, or otherwise protect against any such Claims at its own cost and expense provided that the party seeking indemnification (the "Indemnitee") regarding any such Claims gives written notice to the indemnifying Party promptly after receiving notice of said Claims. If the indemnifying Party chooses to defend Claims, the Indemnitee may, but will not be obligated to, participate at its own expense in a defense thereof by counsel of its own choosing, but the indemnifying Party shall be entitled to control the defense unless the Indemnitee has relieved the indemnifying Party from liability with respect to the particular matter. If the indemnifying Party fails to timely defend, contest, or otherwise protect against any such Claims, the Indemnitee may defend, contest, or otherwise protect against the same, and make any reasonable compromise or settlement thereof and recover the entire costs thereof from the indemnifying Party, including reasonable legal fees and costs and disbursements, and all amounts paid as a result of such Claims or the compromise or settlement thereof; provided, however, that if the indemnifying Party undertakes the timely defense of such matter, the Indemnitee shall not be entitled to recover from the indemnifying Party for its costs incurred in the defense thereof. The Indemnitee shall cooperate and provide such assistance as the indemnifying Party may reasonably request in connection with the defense of the matter subject to indemnification.

Article 15Insurance

15.1 Insurance Coverage

Customer and Supplier each represent that they are sufficiently insured against any liability arising under this Agreement. Further, Supplier shall at a minimum retain [* * *].

15.2 Evidence of Insurance

Each of Customer and Supplier shall, upon request by the other, provide the other Party with a copy of all insurance policies maintained under this Article 15 relating to the Manufacture of the Product in bulk quantities and the facilities therefor and shall notify the other Party in writing at least 30 days prior to the cancellation of or any material change to such insurance policies. Each Party may request that the other Party procure and maintain such additional insurance coverage relating to the Manufacture of the Product and the facilities therefore as may be reasonably necessary in respect of the Parties' respective obligations under this Agreement.

Article 16Legal and Regulatory

16.1 Compliance with Laws

a) Each Party shall, in connection with its obligations, rights and duties under this Agreement and in Manufacturing, handling, storage, loading, shipping, using, commercializing, reselling and distributing the Product:

(i) comply with all Applicable Law or other requirements applicable to such Party's business; and

(ii) subject to Subsection b) below, obtain and maintain in full force and effect all applicable licenses, permits, certificates, authorizations or approvals from local governmental authorities necessary to conduct its business and the activities contemplated under this Agreement. Such licences or certificates are to be provided to the other Party on request.

b) Customer shall be responsible for obtaining all necessary import and/or export licenses or permits and for the payment of all import and/or export fees, taxes or duties in connection with the purchase and/or delivery of the Product under this Agreement. Supplier shall reasonably cooperate with Customer in connection with obtaining necessary import and/or export licenses or permits.

16.2 Maintenance of Records

Supplier shall maintain adequate books and records and retention samples consistent with cGMP Requirements and any other Applicable Law and requirements of applicable governmental or regulatory authorities, in respect of test records, samples and associated support data for all batches of Product Manufactured by Supplier sufficient to substantiate and verify Supplier's duties and obligations under this Agreement for [* * *] from the expiration date of the respective Product batch.

16.3 Notice of Reports

Supplier shall provide to Customer within [* * *] of receipt by Supplier copies of all Product-specific portions of any reports of any governmental or regulatory authority including, without limitation, any Facility-specific reports solely to the extent applicable to the Product or Manufacturing Process, FDA Form

483 observations, FDA warning letters or other correspondence from the FDA or equivalent correspondence from another Applicable Regulatory Authority; provided that Supplier may redact any information from such reports subject to confidentiality obligations and not related to the Product.

16.4 Drug Master Files

Supplier will routinely update and keep current all information pertinent to maintain the Drug Master Files relating to the Manufacture of the Product at the production site of Supplier. Supplier will fully support and reasonably assist Customer with its filing of any application with respect to the Product with any Applicable Regulatory Authority at Customer's expense.

16.5 Compliance with Regulatory Standards

Supplier shall be responsible for Manufacturing the Product in compliance with Applicable Law, cGMP Requirements and the standards of any other applicable governmental or regulatory authority. Each Party will provide reasonable assistance to the other, at no charge, if necessary to respond to audits, inspections, inquiries, or requests of any Applicable Regulatory Authority. Supplier shall advise Customer immediately if Supplier receives notice of an impending inspection related to a Product or if an authorized agent of any Applicable Regulatory Authority or other governmental agency provides advance notice of any investigation, inspection or visit to a Facility. In such event, Supplier shall permit, to the extent permitted by Applicable Law, Customer or its representatives to be present during such visit, at Customer's expense. Upon Customer's request, Supplier shall provide Customer with a copy of any report issued by such Regulatory Authority following such visit.

16.6 Inspection

Supplier shall allow monitoring of the Facilities as set forth in Section 3.6 and inspections or audits as provided for in the Quality Agreement. Supplier shall make available to Customer all relevant records and reports and Customer shall have the right to copy all Product related records and reports. The frequency of such audits as well as the response time with respect to audit findings shall be governed by the Quality Agreement.

Article 17Recalls

17.1 Safety

Supplier shall provide Customer with reasonable co-operation to help Customer investigate adverse events or product complaints involving or related to the Product. The cost and expense of any testing undertaken by Supplier at Customer's request shall be borne by [* * *].

17.2 Recalls

If either Party has grounds to recommend a Recall or otherwise receives a notification or information which might result in a Recall, the Party recommending such Recall or receiving such notification or information shall immediately notify the other Party in writing. Subject to Applicable Law, Customer and its designees shall have the sole responsibility to implement any Recall of the Product or any intermediate or finished product containing the Product and the sole right to make all final decisions regarding any such Recall. Supplier shall reasonably cooperate with Customer and its designees in implementing any such Recall, at Customer's expense.

17.3 Supplier's Liability for Recall

In the event of a Recall or Seizure arising from [* * *], Supplier shall be liable for the expenses and out-of-pocket costs actually incurred by Customer as a result of such Recall or Seizure, and Supplier shall, at the option of Customer:

[* * *].

Such liability shall not limit or otherwise be exclusive of any other provisions of this Agreement.

17.4 Customer's Liability for Recall

In the event of a Recall or Seizure arising from [* * *] Customer shall [* * *].

Such liability shall not be exclusive of any other provisions of this Agreement.

17.5 Replacement Shipments

In the event of any Recall or Seizure with respect to the Product during the Term of this agreement, Supplier shall, upon the written request of Customer, as soon as reasonably possible, supply replacement Product to Customer in an amount sufficient to replace the amount of Product Recalled or Seized, at the applicable then current Fees for Product under this Agreement. If Customer makes such written request, Customer shall issue a Purchase Order in this regard which Supplier is obliged to accept. Supplier agrees to use commercially reasonable efforts to supply such replacement Product pursuant to the new Purchase Order as soon as possible.

Article 18Termination

18.1 Termination

This Agreement is effective as of the Effective Date and will expire in accordance with Section 2.1, unless, upon the occurrence of any of the following events, this Agreement is earlier terminated in accordance with this Section 18.1:

a) Customer delivers written notice of termination to Supplier at least [* * *] prior to the expiration date of the Initial Term, which termination shall be effective as of the expiration date of the Initial Term;

b) either Party delivers written notice of termination to the other Party at least [* * *] prior to the expiration date of the Renewal Term, which termination shall be effective as of the expiration date of the Renewal Term;

c) a Party makes a general assignment for the benefit of creditors, a court of competent jurisdiction declares a Party insolvent or bankrupt, or a petition in bankruptcy or under any insolvency law is filed by or against a Party and such petition is not dismissed within [* * *] after it has been filed, and the other Party delivers written notice of termination to such Party, which termination shall be effective immediately upon delivery of such written notice;

d) a Party breaches a material provision of this Agreement, and the other Party delivers written notice of termination to such breaching Party:

(i) if the breach is not cured within [* * *] after written notice thereof to the Party in default; or

(ii) if the breach is of a type that cannot be cured within [* * *], if a cure is not promptly commenced and diligently pursued until complete remediation but in any case after [* * *] unless otherwise agreed in writing between the Parties;

e) any governmental law, regulation or order is adopted and made effective which would make performance of a Party's obligations under this Agreement impossible or commercially impracticable, and such Party delivers written notice of termination to the other Party, which termination shall be effective immediately upon delivery of such written notice; or

f) a Party has the right to terminate under Section 14.3, which termination shall be effective [* * *] after delivery of written notice to the non-terminating Party.

18.2 Consequences of Termination

On expiration or the effective date of termination of this Agreement, if earlier:

a) both Parties shall be released from all obligations and duties imposed or assumed hereunder, except obligations and liabilities previously accrued and as expressly provided by this Agreement, including, without limitation, those provisions which expressly survive termination or expiration of this Agreement;

b) all Rights granted by Customer to Supplier under Section 11.3 shall immediately revert to Customer, provided that Supplier may continue to use any such Rights in order to fulfil its surviving obligations under Section 18.5, and only for such purpose;

c) Supplier shall provide to Customer, to the extent they exist, copies of:

(i) Supplier's Manufacturing batch records and analytical reports relating to the Product; and

(ii) any other documents required to be delivered pursuant to this Agreement or otherwise reasonably requested by Customer;

d) Unless this Agreement is terminated by Customer pursuant to Section 18.1(d) above, all Purchase Orders and Scopes of Work shall automatically be deemed terminated by Customer and Supplier shall be compensated for final Product already produced or Services already rendered in accordance with this Agreement and, for Products or Services not yet produced or rendered, as the case may be, Supplier shall be entitled to its fees, expenses and costs as set forth in Sections 6.4 and 6.6. Additionally, Customer shall be entitled to request that (i) all Products and/or works in process for which Customer has compensated Supplier and (ii) all Customer Materials be shipped to Customer in accordance with the provisions of Section 7.2(d). If this Agreement is terminated by Customer pursuant to Section 18.1(d) as a result of Supplier's breach, then, Customer shall be able to elect whether Purchase Orders or Scopes of Work not yet completed at the date of termination or expiration should continue in force, subject to the terms and conditions herein; and

e) Supplier shall promptly cooperate with Customer to transfer and transition supply of the Products to a Third Party supplier. Upon Customer's request, Supplier shall cooperate with Customer in the transfer of technology and know-how necessary to Manufacture Products to such Third Party supplier, including providing Customer and the Third Party supplier with reasonable access to the Facilities and consulting services related to Manufacturing of the Product. Supplier shall conduct such activities at Customer's expense paid in advance.

18.3 Return of Samples

On expiration or earlier termination of this Agreement, unless otherwise instructed by Customer, Supplier shall, within [* * *], return to Customer all samples or other supplies of the Product (for which Supplier has been paid) in its possession or control in any form, with the exception of any samples such as retention samples that Supplier may be required to keep according to Applicable Law. The cost of returning any such supplies shall: [* * *]

18.4 Return of Confidential Information

On expiration or earlier termination of this Agreement, unless otherwise agreed between the Parties, each Party shall:

a) promptly cease all use of the Confidential Information of the other Party and ensure that its corporate counsel, employees and contractors cease all use thereof; and

b) upon written request of the other Party,

(i) return to the other Party all original copies of the Confidential Information of the other Party in its control or possession, subject to the retention of one (1) complete copy for archival purposes and to satisfy any applicable legal requirements; and

(ii) except for back-up copies generated by the recipient Party's IT system, destroy any and all copies or other reproductions or extracts of the Confidential Information of the other Party and all other documents, computer files, memoranda, notes or other writings prepared based on such Confidential Information subject to clause (i) above.

18.5 Survival

Except as otherwise provided herein or agreed in writing between the Parties, expiration or early termination of this Agreement shall not relieve either Party of its obligations incurred prior to such expiration or early termination, including the obligation to Manufacture and deliver the Product under Purchase Orders placed by Customer and accepted by Supplier prior to the effective date of expiration or earlier termination, and the obligation to pay Fees in respect thereof. In addition, the following provisions shall survive any expiration or early termination of this Agreement in accordance with the terms of such provision; provided that if there is no express expiration or termination of an obligation or a right under a surviving provision, such provision or right shall continue to survive, subject to Applicable Law[* * *]:

Article 1 (Interpretation); Section 2.2 (Effect of Expiration on Purchase Orders); Section 5.3 (Retention Samples); Article 9 (Fees) (solely with respect to amounts owed or paid following termination); Article 11 (Intellectual Property) (other than Section 11.3 (Grant of License by Customer)); Article 12 (Confidentiality & Publicity); Section 13.3 (No other Warranty); Section 13.4 (No Consequential Damages and Limitation of Liability); Article 14 (Indemnification); Article 15 (Insurance); Section 16.2 (Maintenance of Records); Section 16.4 (Drug Master Files); Section 16.6 (Inspection); Sections 17.2 (Recalls), 17.3 (Supplier's Liability for Recall) and 17.4 (Customer's Liability for Recall); Sections 18.2 (Consequences of Termination), 18.3 (Return of Samples) and 18.4 (Return of Confidential Information); this Section 18.5 (Survival); and Article 19 (Miscellaneous) (except 19.2 and 19.5).

Further, Article 8 (Acceptance of Shipments) shall survive any expiration or termination of this Agreement solely with respect to shipments of Product shipped prior to the effective date of expiration or termination.

Article 19Miscellaneous

19.1 Assignment; Inurement

This Agreement shall be binding upon and shall inure to the benefit of the Parties hereto and their successors and permitted assigns. Supplier shall not assign this Agreement, in whole or in part, to any person without the prior written consent of Customer, except to a Third Party which acquires all, or substantially all, of Supplier's business or assets, whether through merger or otherwise.

Customer shall be entitled to assign this Agreement, in whole or in part, to any person without the consent of Supplier, provided that (i) such person acquires all, or substantially all, of Customer's business

or assets with respect to the Product, whether through merger or otherwise; (ii) such person is an Affiliate of Customer or a Customer Licensee; or (iii) Customer remains liable for any payments Supplier is or will be entitled to under this Agreement. Customer shall not assign this Agreement, in whole or in part, to any other person without the prior written consent of Supplier, not to be unreasonably withheld, conditioned or delayed.

19.2 Change of Control

During the Term, Supplier will promptly notify Customer in writing if at any time a Change of Control shall occur as to Supplier, such notification to be given no later than fifteen (15) days following such Change of Control. [* * *]

19.3 Counterparts

This Agreement may be executed in any number of counterparts each of which shall be deemed to be an original and all of which taken together shall be deemed to constitute one and the same instrument.

19.4 Dispute Resolution

Any controversy or claim arising out of or relating to this Agreement, or the breach thereof, shall be referred first to senior management of the Parties for amicable resolution. In the event that amicable resolution has not been achieved within [* * *], then either Party may seek resolution through confidential arbitration in accordance with the ICC Rules of Arbitration. The arbitration hearing shall be held as soon as practicable following submission to arbitration. The arbitration hearing shall be held in Delaware. The Parties shall request that the arbitration panel render a formal, binding non-appealable resolution and award on each issue as expeditiously as possible. In any arbitration, the prevailing Party shall be entitled to reimbursement of its reasonable attorneys' fees and the Parties shall use all reasonable efforts to keep arbitration costs to a minimum. Judgment upon the award may be entered by any court having jurisdiction thereof or having jurisdiction over the relevant Party or its assets.

19.5 Force Majeure

Any delay or inability to perform any of the duties or obligations of either Party caused by an event outside the affected Party's reasonable control shall not be considered a breach of this Agreement, and unless provided to the contrary herein, the time required for performance shall be extended for a period equal to the period of such delay. Such events shall include, without limitation: acts of God; any governmental act or regulation; insurrections; riots or civil disturbance; acts of war; embargoes; labor disputes at facilities of Material suppliers, including strikes, lockouts, job actions, or boycotts; fires; explosions; terrorist attacks; floods; or other unforeseeable causes beyond the reasonable control and without the fault or negligence of the Party so affected. In order to take the benefit of this section, the Party so affected shall give prompt notice [* * *] to the other Party of such cause, and shall take

whatever reasonable steps are necessary to relieve the effect of such cause as rapidly as reasonably possible. If performance is affected for a cumulative period of more than [* * *], the non-affected Party may terminate this Agreement immediately by notice in writing to the affected Party.

19.6 Performance

Each Party agrees to perform its obligations under this Agreement, including under any Scope of Work, in a timely manner. Supplier shall allocate adequate resources to execute its obligations under this Agreement, including under each Scope of Work. Supplier represents and warrants that all Services shall be performed by qualified personnel in accordance with the highest industry standards.

19.7 Further Assurances

The Parties shall both execute and deliver such further instruments and do such further acts as may be required to implement the intent of this Agreement.

19.8 Independent Contractors

Supplier and Customer shall be independent contractors and shall not be deemed to be partners, joint venturers or each other's agents under this Agreement, and neither Party shall have the right to act on behalf of the other except as is expressly set forth in this Agreement.

19.9 Injunctions

Each Party agrees that the other Party may be irreparably damaged if any provision of this Agreement is not performed in accordance with its terms. Accordingly, notwithstanding Section 19.3, each Party will be entitled to apply for an injunction or injunctions to prevent breaches of any of the provisions of this Agreement by the other Party, without showing or proving any actual or threatened damage, notwithstanding any rule of law or equity to the contrary, and may specifically enforce such provisions by an action instituted in a court having jurisdiction. These specific remedies are in addition to any other remedy to which the Parties may be entitled at law or in equity.

19.10 Notices

Unless otherwise provided herein, any notice required or permitted to be given hereunder or any proposal for any modification of this Agreement (hereinafter collectively referred to as the "Correspondence") shall be faxed, mailed by overnight mail, certified mail postage prepaid, or delivered by hand to the Party to whom such Correspondence is required or permitted to be given hereunder at the addresses set out below. If delivered by hand, any such Correspondence shall be deemed to have been given when received by the Party to whom such Correspondence is given and if faxed, any such Correspondence shall be deemed to have been given on the first Business Day following facsimile transmission, as evidenced by written and dated receipt of the receiving Party.

If to Supplier:

CARBOGEN AMCIS AG

Hauptstrasse 159-173

CH 4416 Bubendorf

Switzerland

Attention: CEO

Telephone:+ 41 61 935 5353

Facsimile:+ 41 61 935 5300

If to Customer:

Paratek Pharmaceuticals, Inc.

75 Park Plaza, 4th Floor

Boston, MA 02116

USA

Attention : General Counsel

Phone: +1 617 807 6600

Facsimile: +1 617 275 0039

Either Party may change the address to which any Correspondence to it is to be addressed by notification to the other Party as provided herein.

19.11 Entire Agreement

This Agreement, the Quality Agreement and all Exhibits attached hereto (as the same may be amended from time to time by the written agreement of the Parties) constitute the entire agreement between the Parties with respect to the subject matter hereof and supersede all other documents, agreements, verbal consents, arrangements and understandings between the Parties with respect to the subject matter hereof. This Agreement shall not be amended orally, but only by an agreement in writing, signed by both Parties that states that it is an amendment to this Agreement.

19.12 Severability

If any term or provision of this Agreement shall for any reason be held invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other term or provision hereof, and this Agreement shall be interpreted and construed as if such term or provision, to the extent the same shall have been held to be invalid, illegal or unenforceable, had never been contained herein.

19.13 Waiver

No waiver or modification of any of the terms of this Agreement shall be valid unless in writing and signed by an authorized representative of the Parties hereto. Failure by either Party to enforce any rights under this Agreement shall not be construed as a waiver of such rights, nor shall a waiver by either Party in one or more instances be construed as constituting a continuing waiver or as a waiver in other instances.

[*Signature page follows.*]

THIS EXHIBIT HAS BEEN REDACTED AND IS THE SUBJECT OF A CONFIDENTIAL TREATMENT REQUEST. REDACTED MATERIAL IS MARKED WITH [* * *] AND HAS BEEN FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION.

IN WITNESS WHEREOF, each of the Parties hereto has caused this Agreement to be executed by its duly authorized officer as of the dates set forth below.

CUSTOMER

by its authorized signatory:

/s/ William M. Haskel

Name: William M. Haskel

Title: Sr. Vice President

Date: January 9, 2017

CARBOGEN AMCIS AG

by its authorized signatory:

/s/ Silke Erbeck

Name: Silke Erbeck

Title: Senior Head of Commercial Products

Date: 10.Jan.2017

/s/ Dr. Stephan Fritschi

Stephan Fritschi

VP Operations

CARBOGEN AMCIS AG

10.Jan.2017

THIS EXHIBIT HAS BEEN REDACTED AND IS THE SUBJECT OF A CONFIDENTIAL TREATMENT REQUEST. REDACTED MATERIAL IS MARKED WITH [* * *] AND HAS BEEN FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION.

Exhibit A – Description of Product

[* * *]

THIS EXHIBIT HAS BEEN REDACTED AND IS THE SUBJECT OF A CONFIDENTIAL TREATMENT REQUEST. REDACTED MATERIAL IS MARKED WITH [* * *] AND HAS BEEN FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION. WHERE TWO PAGES OF MATERIAL HAVE BEEN OMITTED, THE REDACTED MATERIAL IS MARKED WITH [†].

Exhibit B – Chemical Synthesis

[* * *]

THIS EXHIBIT HAS BEEN REDACTED AND IS THE SUBJECT OF A CONFIDENTIAL TREATMENT REQUEST. REDACTED MATERIAL IS MARKED WITH [* * *] AND HAS BEEN FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION. WHERE TWO PAGES OF MATERIAL HAVE BEEN OMITTED, THE REDACTED MATERIAL IS MARKED WITH [†].

Exhibit C – Fee Schedule

[* * *]

THIS EXHIBIT HAS BEEN REDACTED AND IS THE SUBJECT OF A CONFIDENTIAL TREATMENT REQUEST. REDACTED MATERIAL IS MARKED WITH [* * *] AND HAS BEEN FILED SEPARATELY WITH THE SECURITIES AND EXCHANGE COMMISSION. WHERE TWO PAGES OF MATERIAL HAVE BEEN OMITTED, THE REDACTED MATERIAL IS MARKED WITH [†].

Exhibit D – Certificate of Analysis and Certificate of Compliance

[†]

Exhibit 21.1

List of Registrant's Subsidiaries

Paratek Bermuda Ltd., incorporated in Bermuda.

Paratek Pharma LLC, incorporated in Delaware.

Paratek Securities Corporation, incorporated in Massachusetts.

Paratek UK Limited, incorporated in the United Kingdom.

Transcept Pharma, Inc., incorporated in Delaware.

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the following Registration Statements:

(1) Registration Statements (Form S-3 Nos. 333-201458, 333-207441, and 333-215123) of Paratek Pharmaceuticals, Inc.,
(2) Registration Statement (Form S-8 No. 333-135506) pertaining to the Novacea, Inc. 2006 Incentive Award Plan and Amended 2001 Stock Option Plan of Novacea, Inc.,
(3) Registration Statement (Form S-8 No. 333-150869) pertaining to the Novacea, Inc. 2006 Incentive Award Plan,
(4) Registration Statement (Form S-8 Nos. 333-157927, 333-164468, 333-172041, 333-180517, 333-187254, 333-194624, 333-201204) pertaining to the 2006 Incentive Award Plan of Transcept Pharmaceuticals, Inc.,
(5) Registration Statement (Form S-8 No. 333-205482) pertaining to the 2006 Incentive Award Plan, as amended and restated, the 2015 Equity Incentive Plan, and the 2015 Inducement Plan of Paratek Pharmaceuticals, Inc., and
(6) Registration Statement (Form S-8 No. 333-210053) pertaining to the 2015 Equity Incentive Plan of Paratek Pharmaceuticals, Inc.,

of our reports dated March 1, 2017, with respect to the consolidated financial statements of Paratek Pharmaceuticals, Inc. and the effectiveness of internal control over financial reporting of Paratek Pharmaceuticals, Inc. included in this Annual Report (Form 10-K) of Paratek Pharmaceuticals, Inc. for the year ended December 31, 2016.

/s/ Ernst & Young LLP

Boston, Massachusetts
March 1, 2017

Exhibit 23.2

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in Registration Statement Nos. 333-188171, 333-201458, 333-207441 and 333-215123 on Form S-3 and Registration Statement Nos. 333-135506, 333-150869, 333-157927, 333-157929, 333-160222, 333-164468, 333-172041, 333-180517, 333-187254, 333-194624, 333-201204, 333-205482 and 333-210053 on Form S-8 of our report dated March 9, 2016, on our audits of the consolidated financial statements of Paratek Pharmaceuticals, Inc. as of December 31, 2015 and for each of the two years in the period ended December 31, 2015, included in this Annual Report on Form 10-K of Paratek Pharmaceuticals, Inc. for the year ended December 31, 2016.

/s/ CohnReznick LLP
Vienna, Virginia
March 1, 2017

Exhibit 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Michael F. Bigham, certify that:

1. I have reviewed this Annual Report on Form 10-K of Paratek Pharmaceuticals, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision; to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ MICHAEL F. BIGHAM

Michael F. Bigham
Chief Executive Officer
March 1, 2017

Exhibit 31.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Douglas W. Pagán, certify that:

1. I have reviewed this Annual Report on Form 10-K of Paratek Pharmaceuticals, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision; to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ DOUGLAS W. PAGAN

Douglas W. Pagán
Chief Financial Officer
March 1, 2017

Exhibit 32.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

Pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350), Michael F. Bigham, Chief Executive Officer of Paratek Pharmaceuticals, Inc. (the "Company"), hereby certifies that, to the best of his knowledge:

1. The Company's Annual Report on Form 10-K for the year ended December 31, 2016 (the "Annual Report"), to which this Certification is attached as Exhibit 32.1 fully complies with the requirements of Section 13(a) or Section 15(d), of the Exchange Act; and

2. The information contained in the Annual Report fairly presents, in all material respects, the financial condition and results of operations the Company.

In Witness Whereof, the undersigned has set his hand hereto as of the 1st day of March, 2017.

/s/ MICHAEL F. BIGHAM

Michael F. Bigham
Chief Executive Officer

This certification accompanies the Annual Report on Form 10-K to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of Paratek Pharmaceuticals, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of this Annual Report on Form 10-K), irrespective of any general incorporation language contained in such filing.

Exhibit 32.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

Pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350), Douglas W. Pagán, Chief Financial Officer of Paratek Pharmaceuticals, Inc. (the "Company"), hereby certifies that, to the best of his knowledge:

1. The Company's Annual Report on Form 10-K for the year ended December 31, 2016 (the "Annual Report"), to which this Certification is attached as Exhibit 32.2 fully complies with the requirements of Section 13(a) or Section 15(d) of the Exchange Act; and

2. The information contained in the Annual Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

In Witness Whereof, the undersigned has set his hand hereto as of the 1st day of March, 2017.

/s/ DOUGLAS W. PAGAN

Douglas W. Pagán
Chief Financial Officer

This certification accompanies the Annual Report on Form 10-K to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of Paratek Pharmaceuticals, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of this Annual Report on Form 10-K), irrespective of any general incorporation language contained in such filing.