

**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, 2018
OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____
Commission file number 001-38150

KALA PHARMACEUTICALS, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

490 Arsenal Way, Suite 120
Watertown, MA
(Address of principal executive offices)

27-0604595
(I.R.S. Employer
Identification No.)

02472
(Zip Code)

(781) 996-5252

(Registrant's telephone number, including area code)

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

Title of each class	Name of each exchange on which registered
Common Stock, \$0.001 par value per share	Nasdaq Global Select 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 Section 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 every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the Registrant was required to submit such files). YES NO

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405) 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, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company
Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

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

As of June 29, 2018, the last business day of the registrant's most recently completed second fiscal quarter, the aggregate market value of the Common Stock held by non-affiliates of the registrant was approximately \$205.9 million, based on the closing price of the registrant's common stock on June 29, 2018.

There were 33,882,872 shares of Common Stock (\$0.001 par value) outstanding as of March 6, 2019.

DOCUMENTS INCORPORATED BY REFERENCE

Part III of this Annual Report incorporates by reference information from the definitive Proxy Statement for the registrant's 2019 Annual Meeting of Stockholders, which is expected to be filed with the Securities and Exchange Commission not later than 120 days after the registrant's fiscal year ended December 31, 2018.

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References to Kala

Throughout this Annual Report on Form 10-K, the “Company,” “Kala”, “Kala Pharmaceuticals,” “we,” “us,” and “our,” except where the context requires otherwise, refer to Kala Pharmaceuticals, Inc. and its consolidated subsidiary, and “our board of directors” refers to the board of directors of Kala Pharmaceuticals, Inc.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS AND INDUSTRY DATA

This Annual Report on Form 10-K contains forward-looking statements that involve substantial risks and uncertainties. All statements, other than statements of historical fact, contained in this Annual Report on Form 10-K, including statements regarding our strategy, future operations, future financial position, future revenue, projected costs, prospects, plans and objectives of management, are forward-looking statements. The words “anticipate,” “believe,” “estimate,” “expect,” “intend,” “may,” “might,” “plan,” “predict,” “project,” “target,” “potential,” “would,” “could,” “should,” “continue” and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words.

The forward-looking statements in this Annual Report on Form 10-K include, among other things, statements about:

- our commercialization efforts for INVELTYS™ (loteprednol etabonate ophthalmic suspension) 1.0%, our first product, which is still in its initial phases, and our plans to develop and commercialize KPI-121 0.25% and any other product candidates, if they are approved;
- the timing of and our ability to, obtain and maintain regulatory approvals for KPI-121 0.25% or to submit applications for our other product candidates;
- our estimates regarding potential future revenue from sales of INVELTYS;
- our ability to maintain regulatory approvals for INVELTYS;
- our ongoing STRIDE 3 clinical trial of KPI-121 0.25% in patients with dry eye disease, and the expected timing for receipt of topline data;
- our expectations regarding our ability to fund our operating expenses and capital expenditure requirements with our cash on hand;
- the potential advantages of INVELTYS and our product candidates;
- the rate and degree of market acceptance and clinical utility of our products;
- our estimates regarding the potential market opportunity for INVELTYS and our product candidates;
- our commercialization, marketing and manufacturing capabilities and strategy;
- our intellectual property position;
- our ability to identify additional products, product candidates or technologies with significant commercial potential that are consistent with our commercial objectives;
- our estimates regarding expenses, future revenue, timing of any future revenue, capital requirements and needs for additional financing;
- the impact of government laws and regulations;

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- our competitive position;
- developments relating to our competitors and our industry;
- our ability to maintain and establish collaborations or obtain additional funding; and
- our expectations regarding the time during which we will be an emerging growth company under the Jumpstart our Business Startups Act of 2012.

We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. We have included important factors in the cautionary statements included in this Annual Report on Form 10-K, particularly in the “Risk Factors” section, that we believe could cause actual results or events to differ materially from the forward-looking statements that we make. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments we may make.

You should read this Annual Report on Form 10-K and the documents that we reference in this Annual Report on Form 10-K and have filed as exhibits to this Annual Report on Form 10-K completely and with the understanding that our actual future results may be materially different from what we expect. The forward-looking statements contained in this Annual Report on Form 10-K are made as of the date of this Annual Report on Form 10-K, and we do not assume any obligation to update any forward-looking statements except as required by applicable law.

This Annual Report on Form 10-K includes statistical and other industry and market data that we obtained from industry publications and research, surveys and studies conducted by us and third parties as well as our estimates of potential market opportunities. Industry publications, third-party and our own research, surveys and studies generally indicate that their information has been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. Our estimates of the potential market opportunities for INVELTYS and our product candidates include several key assumptions based on our industry knowledge, industry publications, third-party research and other surveys, which may be based on a small sample size and may fail to accurately reflect market opportunities. While we believe that our internal assumptions are reasonable, no independent source has verified such assumptions.

Part I

Item 1. BUSINESS

Overview

We are a biopharmaceutical company focused on the development and commercialization of therapeutics using our proprietary AMPPLIFY™ mucus-penetrating particle, or MPP, drug delivery technology, with an initial focus on the treatment of eye diseases. The innovative MPP technology, which we refer to as our AMPPLIFY technology, uses selectively-sized nanoparticles that each have a proprietary coating. We believe that these two key attributes enable even distribution of drug particles on mucosal surfaces and significantly increase drug delivery to target tissues by enhancing mobility of drug particles through mucus and preventing drug particles from becoming trapped and eliminated by mucus. We have applied the AMPPLIFY technology to loteprednol etabonate, or LE, a corticosteroid designed for ocular applications, resulting in the August 2018 approval of INVELTYS™ (loteprednol etabonate ophthalmic suspension) 1%, our topical twice-a-day ocular steroid for the treatment of inflammation and pain following ocular surgery, by the U.S. Food and Drug Administration, or the FDA, and the development of our lead product candidate, KPI-121 0.25%, for the temporary relief of the signs and symptoms of dry eye disease. We commercially launched INVELTYS in January 2019.

KPI-121 0.25% is our product candidate for patients with dry eye disease utilizing a two-week course of therapy. In January 2018, we announced topline results from two completed Phase 3 clinical trials, which we refer to as STRIDE 1 and STRIDE 2 (STRIDE - Short Term Relief In Dry Eye), evaluating the safety and efficacy of KPI-121 0.25% versus vehicle (placebo) in patients with dry eye disease. In STRIDE 1, statistical significance was achieved for the primary sign endpoint of conjunctival hyperemia and the primary symptom endpoint of ocular discomfort severity change from baseline to day 15 in the intent to treat, or ITT, population; in addition, statistical significance was also achieved in STRIDE 1 for a second pre-specified primary symptom endpoint of ocular discomfort severity change from baseline to day 15 in patients with more severe baseline ocular discomfort. In STRIDE 2, statistical significance was achieved for the primary sign endpoint of conjunctival hyperemia, but statistical significance was not achieved for the primary symptom endpoint of ocular discomfort severity. KPI-121 0.25% was generally well tolerated in both STRIDE 1 and STRIDE 2, with no clinically significant treatment-related adverse events observed during the course of either trial, and with elevations in interocular pressure, or IOP in both trials similar to placebo.

In December 2018, the FDA accepted for filing our new drug application, or NDA, for KPI-121 0.25%. The FDA has set a target action date under the Prescription Drug User Fee Act, or PDUFA, of August 15, 2019. Based upon the recommendation of the FDA, we also initiated an additional Phase 3 clinical trial, STRIDE 3, in the third quarter of 2018 evaluating KPI-121 0.25% for the temporary relief of the signs and symptoms of dry eye disease. We believe we have identified key factors that contributed to the differences observed in the results from STRIDE 2 compared to those of STRIDE 1 and the Phase 2 trial, and that changes made to the inclusion/exclusion criteria of STRIDE 3 based on these analyses will improve the probability of success. If approved, KPI-121 0.25% could be the first FDA-approved product for the temporary relief of the signs and symptoms of dry eye disease.

INVELTYS is the first and only FDA-approved ocular corticosteroid product with a twice-a-day dosing regimen for the treatment of post-operative inflammation and pain. Other approved topical ocular corticosteroid products for this indication are dosed four times a day. In clinical trials, INVELTYS showed statistical significance in the primary efficacy endpoints of complete resolution of inflammation at day eight maintained through day 15 with no need for rescue medication compared to placebo and complete resolution of pain at day eight maintained through day 15 with no need for rescue medications compared to placebo.

We are evaluating opportunities for MPP nanosuspensions of LE with less frequent daily dosing regimens for the temporary relief of signs and symptoms of dry eye disease and for potential chronic treatment of dry eye disease. We also are evaluating compounds in our receptor Tyrosine Kinase Inhibitor program, or rTKI program, that inhibit the vascular endothelial growth factor, or VEGF, pathway, for the potential treatment of a number of retinal diseases.

INVELTYS received FDA approval under Section 505(b)(2) of the U.S. Federal Food, Drug and Cosmetic Act, or the FDCA, which is the pathway we plan to rely on for the approval of KPI-121 0.25% as well. We have retained

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worldwide commercial rights for INVELTYS and our current product candidates. Since FDA approval of INVELTYS, we have built a commercial infrastructure with our own focused, specialty sales force which includes 57 territory sales managers, or TSMs, 7 regional sales leaders, or RSLs, and 3 directors of national accounts, or DNAs. If KPI-121 0.25% is approved for the temporary treatment of dry eye disease, we expect to further expand our sales force by up to an additional 100 personnel. We expect to commercialize in the United States any of our other product candidates that receive marketing approval as well. In anticipation of the potential to commercialize our product candidates in other global markets, we are evaluating a variety of collaboration, distribution and other marketing arrangements with one or more third parties.

We own and/or exclusively license patents relating to INVELTYS, our product candidates and AMPPLIFY technology, including U.S. and foreign issued patents and pending patent applications covering KPI-121, our rTKI program, other products under development and our AMPPLIFY technology, along with pending patent applications relating to ophthalmic applications of our AMPPLIFY technology. The earliest expiration date of an issued U.S. patent covering INVELTYS and our current product candidates is in 2033. The earliest expiration date of an issued U.S. patent relating to our AMPPLIFY technology is in 2027.

The following table describes the stage of each of our current programs:

Program	Pre-clinical	Phase 1	Phase 2	Phase 3	Approved	Expected Milestones and Planned Next Steps
INVELTYS™: First BID corticosteroid indicated for the treatment of post-operative ocular inflammation and pain	[Redacted]					<ul style="list-style-type: none"> Approved by FDA on August 22, 2018 U.S. launch in January 2019
KPI-121 0.25% for temporary relief of the signs and symptoms of dry eye disease	[Redacted]					<ul style="list-style-type: none"> NDA filed with FDA in October 2018; PDUFA date of August 15, 2019 STRIDE 3 Phase 3 trial initiated July 2018; topline results expected in Q4 2019
MPP rTKI for Retinal Diseases	[Redacted]					<ul style="list-style-type: none"> Complete evaluation of our lead compound, KPI-285, for retinal disease

Our Product

INVELTYS for Post-Operative Inflammation and Pain

Ocular inflammation and pain are common complications following ocular surgery. According to Marketscope, a third-party provider of market data, in 2018 there were approximately 8.2 million ocular surgeries in the United States. Tissue damage caused by ocular surgery leads to the production of prostaglandins, lipids that aid in recovery at the site of an injury, and an increase in blood flow to the affected area, which contribute to inflammation. The standard of care for post-operative inflammation and pain includes anti-inflammatory drugs such as corticosteroids, which improve patient comfort and accelerate recovery through disruption of the inflammatory cascade.

INVELTYS received FDA approval in August 2018 for the treatment of post-surgical inflammation and pain following all ocular surgery, and was commercially launched in the United States in January 2019. INVELTYS is the first and only post-operative ocular steroid shown effective and FDA approved for twice-a-day, or BID, dosing, has the highest concentration (1%) of LE on the market in the United States and is formulated with our AMPPLIFY technology, which enables INVELTYS to deliver 3.75x more drug to the ocular tissue compared to an active comparator. Based on a market survey we commissioned of 100 ophthalmologists, we believe INVELTYS offers advantages over other existing post-surgical treatment options due to its twice-daily dosing, two-week course of treatment and safety data, including low incidence of reported IOP spikes, and efficacy data from our clinical trials.

In each of the two Phase 3 clinical trials of INVELTYS in patients who had undergone cataract surgery, administration of INVELTYS two times a day for 14 days achieved statistical significance for both primary efficacy endpoints of complete resolution of inflammation at day eight maintained through day 15 with no need for rescue medication and complete resolution of pain at day eight maintained through day 15 with no need for rescue medication. In each of these trials, INVELTYS was well tolerated with similar increases in IOP, a common side effect of steroids, compared to placebo and with no treatment-related significant adverse events observed during the course of either trial.

Our Product Candidates

KPI-121 0.25% for Dry Eye Disease

Dry eye disease is a chronic, episodic, multifactorial disease affecting the tears and ocular surface that can result in tear film instability, inflammation, discomfort, visual disturbance and ocular surface damage. Dry eye disease can have a significant impact on quality of life and can potentially cause long-term damage to the ocular surface. Due to the impact of dry eye disease on tear film dynamics, the condition can affect performance of common vision-related activities such as reading, using a computer and driving, and can lead to complications associated with visual impairment. In addition, the vast majority of dry eye patients experience acute exacerbations of their symptoms, which are commonly referred to as flares, at various times throughout the year. These flares can be triggered by numerous factors, including exposure to allergens, pollution, wind and low humidity, intense visual concentration such as watching television and working at a computer, hormonal changes, contact lens wear, smoking and sleep deprivation, which cause ocular surface inflammation and impact tear production and/or tear film stability.

We estimate dry eye disease affects approximately 33 million people in the United States based on an estimated dry eye disease prevalence of 14.5% described below and applied to the population of the United States over 20 years old. Based on third-party academic research, we believe dry eye disease results in approximately \$55 billion in direct and indirect costs in the United States each year, of which approximately \$3.8 billion are direct medical costs. The exact prevalence of dry eye disease is unknown due to the difficulty in defining the disease and the lack of a single diagnostic test to confirm its presence. The Beaver Dam Offspring Study, a major epidemiological study published in 2014 in the *American Journal of Ophthalmology*, reported that in a cohort of over 3,000 patients, dry eye disease was self-reported by 14.5% of the patients. The prevalence of dry eye disease increases with age, and we expect that the number of dry eye disease cases will increase as the U.S. population continues to age. Epidemiology and market research commissioned by us indicate that there are an estimated 16 million patients with a diagnosis of dry eye disease in the United States. We commissioned two surveys of 503 and 297 dry eye disease patients, which we refer to as the patient surveys. The patient surveys included a representative set of dry eye patients based on demographics and disease characteristics, such as age, sex and therapeutic history. The patients represented a broad range of dry eye disease severity. Based upon our review of the patient survey, we believe dry eye disease is a burdensome disease that has a significant impact on the quality of life of patients with dry eye disease.

The most commonly used treatments for dry eye disease in the United States are over-the-counter eye drops, often referred to as “artificial tears,” and two prescription pharmaceutical products, Restasis® and Xiidra®. Artificial tears are intended to be palliative in nature to supplement insufficient tear production or improve tear film instability, but do not treat the underlying inflammation in dry eye disease. Restasis increases tear production and Xiidra treats the signs and symptoms of dry eye disease, however, both Restasis and Xiidra are typically used chronically for dry eye patients who have continuous symptoms. Restasis had sales in 2018 of approximately \$1.2 billion in the United States. Xiidra, which was commercially launched in the United States in August 2016, had sales of approximately \$255.1 million for

the nine month period ended September 30, 2018. As each of Restasis and Xiidra have a relatively long onset of action, they are not generally used for the short-term treatment of episodic dry eye flares. We believe there is a larger proportion of dry eye patients whose symptoms are primarily episodic as opposed to chronic, and for whom a chronic therapy is not necessary. For these patients, we believe an FDA-approved, acute, short-term therapy can address a significant unmet need. Our review of the patient surveys indicates that approximately 90% of surveyed patients reported experiencing short-term flares, with flares lasting on average approximately 4 days and occurring approximately 6 times per year. The patients surveyed also indicated that the most common reason for discontinuing the two leading branded dry eye treatments were insufficient efficacy and side effects. In addition, the results of a multi-sponsored Gallup Poll survey were consistent with our patient surveys, indicating on average 5-6 flares per year lasting on average 4 days.

We are developing KPI-121 0.25% for the temporary relief of the signs and symptoms of dry eye disease, utilizing a two-week course of therapy administered four times a day. We believe that KPI-121 0.25%'s broad mechanism of action, rapid onset of relief of both signs and symptoms, favorable tolerability profile and potential to be complementary to existing therapies, will result in a favorable profile for the management of dry eye flares and other dry eye associated conditions that would benefit from temporary relief of dry eye signs and symptoms. We believe these features of KPI-121 0.25% may be attractive to prescribing clinicians and could be a first line prescription medication choice for a substantial number of their dry eye patients. Based upon our review of the patient surveys, we also believe patients with dry eye disease will be attracted to KPI-121 0.25%'s novelty, rapid efficacy in the relief of signs and symptoms and ability to be used on an as-needed basis to treat the short-term flares.

In June 2016, we initiated two Phase 3 clinical trials, STRIDE 1 and STRIDE 2 each with enrollment of over 900 dry eye patients, comparing KPI-121 0.25% to placebo, both administered four times a day for 14 days. We announced topline results from both trials in January 2018. Statistical significance was achieved for the primary sign and both pre-specified primary symptom endpoints in STRIDE 1. Statistical significance was achieved for the primary sign endpoint in STRIDE 2 with a trend towards a treatment effect for the primary symptom endpoint. KPI-121 0.25% was generally well tolerated in both STRIDE 1 and STRIDE 2, with no clinically significant treatment-related adverse events observed during the course of either the trial. In December 2018, the FDA accepted for filing our NDA for KPI-121 0.25%, and the FDA has set a target action date under PDUFA of August 15, 2019. The NDA includes data from three clinical trials studying approximately 2,000 patients, including one Phase 2 trial and two Phase 3 efficacy and safety trials (STRIDE 1 and STRIDE 2). Based upon the recommendation of the FDA, we also initiated an additional Phase 3 clinical trial, STRIDE 3, in the third quarter of 2018 evaluating KPI-121 0.25% for the temporary relief of the signs and symptoms of dry eye disease. We believe we have identified key factors that contributed to the differences observed in the results from STRIDE 2 compared to those of STRIDE 1 and the Phase 2 trial, and that changes made to the inclusion/exclusion criteria of STRIDE 3 based on these analyses will improve the probability of success. We expect to report top-line results for STRIDE 3 in the fourth quarter of 2019. If approved, KPI-121 0.25% could be the first FDA-approved product for the temporary relief of the signs and symptoms of dry eye disease.

rTKI Program for Retinal Diseases

Commonly used therapies for retinal diseases must be injected directly into the patient's eye, often at monthly intervals. We believe that our AMPPLIFY technology has the potential to facilitate the delivery of therapeutics into tissues in the back of the eye, which has the potential to improve dosing regimen and offers a competitive advantage over current therapies.

After synthesizing and testing a number of new chemical entities, or NCEs, from our rTKI program, we are further evaluating compounds in our rTKI program that inhibit the VEGF pathway for the potential treatment of a number of retinal diseases, including wet age-related macular degeneration, or Wet AMD, Diabetic Retinopathy, or DR, Diabetic Macular Edema, or DME, and Retinal Vein Occlusion, or RVO, each of which involves either the leakage of existing blood vessels or the proliferation of poorly formed and leaky blood vessels at the back of the eye. These eye diseases can significantly reduce vision and eventually lead to blindness. VEGF is a protein that plays a critical role in the formation of new blood vessels and increased permeability, two pathological processes that contribute to the vision loss associated with certain retinal diseases. In our rTKI program, we are initially targeting Wet AMD with our lead rTKI compound, KPI-285. KPI-285 inhibits the VEGF pathway. In preclinical rabbit studies, topical administration of KPI-285 achieved concentrations in tissues in the back of the eye well above the concentrations required for *in vitro*

inhibition of 50% of the VEGF receptor kinase activity. Prior to initiating IND-enabling studies, we may consider potential collaborative partnership opportunities to advance product candidates we develop through our rTKI program, including KPI-285.

Other Potential Applications of our AMPPLIFY Technology

While our current focus is on the application of our AMPPLIFY technology in ophthalmology, we have conducted preclinical studies demonstrating the potential of our AMPPLIFY technology in other therapeutic areas. Mucus limits delivery of conventionally formulated drugs to the lung, cervical/vaginal tract, gastrointestinal tract and other mucus-protected tissues. In preclinical studies, we have demonstrated that our AMPPLIFY technology can be used to increase the mucus penetration of over fifteen classes of drugs, including anti-infective and anti-inflammatory drugs.

Strategy

Our goal is to become a leading biopharmaceutical company focused on the development and commercialization of therapeutics using our proprietary AMPPLIFY technology. Key elements of our strategy include:

- ***Maximize the commercial potential of INVELTYS for post-operative inflammation and pain.*** In January 2019, we began to commercialize INVELTYS in the United States with our own focused, specialty sales force of 57 TSMs, 7 RSLs and 3 DNAs, targeting both ophthalmologists and optometrists.
- ***Seek and obtain regulatory approval for, and maximize the commercial potential of, KPI-121 0.25% for the treatment of dry eye disease.*** In December 2018, the FDA accepted for filing our NDA for KPI-121 0.25%, and set a target action date under PDUFA of August 15, 2019. Based upon the recommendation of the FDA, we also initiated an additional Phase 3 clinical trial, STRIDE 3, in the third quarter of 2018 evaluating KPI-121 0.25% for the temporary relief of the signs and symptoms of dry eye disease. We believe we have identified key factors that contributed to the differences observed in the results from STRIDE 2 compared to those of STRIDE 1 and the Phase 2 trial, and that changes made to the inclusion/exclusion criteria of STRIDE 3 based on these analyses will improve the probability of success. If approved, we intend to commercialize KPI-121 0.25% in the United States with our specialty sales force, which we expect to expand by approximately 100 representatives that will target ophthalmologists and optometrists. We also expect to explore commercialization of KPI-121 0.25% for the treatment of dry eye disease in certain markets outside the United States, including the European Union, or EU, utilizing a variety of collaboration, distribution and other marketing arrangements with one or more third parties.
- ***Advance early stage pipeline development programs, and further leverage our proprietary AMPPLIFY technology.*** We are evaluating opportunities for MPP nanosuspensions of LE with less frequent daily dosing regimens for the temporary relief of signs and symptoms of dry eye disease and for potential chronic treatment of dry eye disease. We also are evaluating our current lead rTKI program compound, KPI-285, a small molecule for the potential treatment of a number of retinal diseases. Prior to initiating IND-enabling studies, we may consider potential collaborative partnership opportunities to advance product candidates we develop through our rTKI program, including KPI-285. In addition, we also are evaluating additional product opportunities with significant unmet medical needs that we believe can be addressed by our proprietary AMPPLIFY technology, including diseases of the lung.
- ***Business development through selective acquisitions and licensing.*** We plan to pursue value-driven business development opportunities as they arise in order to enhance our business and product pipeline through strategically acquiring clinical or commercial-ready product candidates or approved revenue-generating products with growth potential, particularly in the ophthalmic area. We will also continue to assess the addition of other specialty therapeutic areas through both product/portfolio acquisitions or other M&A activity with a similar focus on opportunities that we anticipate are or will become revenue generating and accretive.

Our MPP Technology

Opportunities in Drug Delivery across Mucosal Barriers

The body is surrounded by boundary tissues that play the important physiological role of preventing foreign bodies from penetrating into the body. The mucus that coats these tissues, the eyes, lung, cervical/vaginal tract and gastrointestinal tract, for example, serves as a protective barrier to trap and eliminate particulate matter, such as viruses, bacteria and allergens, before these agents can enter the underlying tissues and cause infections or elicit reactions. However, in playing this pivotal role of protection, mucus can also hinder medical treatments by limiting the penetration of medications to mucus-protected tissues, thereby reducing their therapeutic effect.

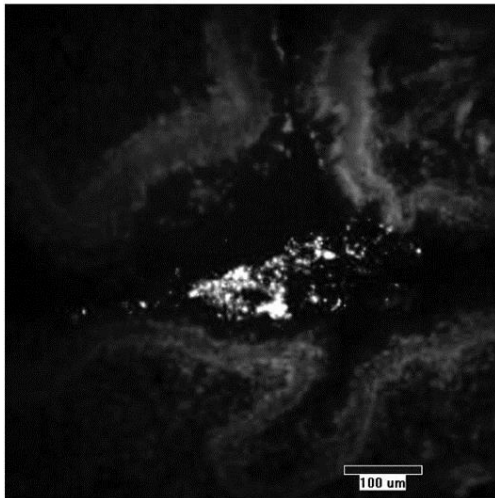
Mucus also makes it difficult to treat many ophthalmic diseases. The body can rapidly eliminate drugs delivered to the eye via the tear film protecting the surface of the eye, which can significantly limit the effectiveness of these drugs. This is the case both for drugs designed to treat conditions in the front of the eye, such as dry eye disease and post-operative inflammation and pain, as well as for drugs designed to treat conditions in the back of the eye, such as retinal diseases. We believe that our proprietary MPP technology, which we refer to as our AMPPLIFY technology, has the potential to address this clear unmet medical need for more efficient delivery of drugs.

MPP Technology

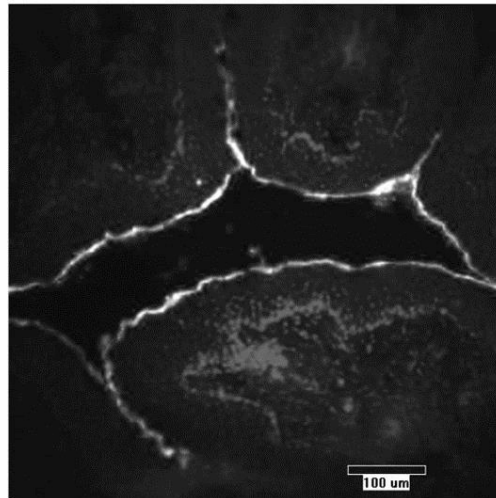
Our MPPs are selectively-sized nanoparticles, with average diameters of approximately 330 nanometers, and have non-covalent proprietary coatings. We believe that these two key attributes enable even distribution of drug particles on mucosal surfaces and significantly increase drug delivery to target tissues by enhancing mobility of drug particles through mucus and preventing drug particles from becoming trapped and eliminated by mucus. We believe this enables enhanced efficacy at equal or lower doses as well as less frequent dosing for improved patient convenience and compliance.

In a preclinical study, MPPs or conventional particles in a hypotonic solution were administered intravaginally to mice. Ten minutes after administration, the vaginal tissues were dissected and stained. The image on the left below shows the distribution of the conventional particles and the image on the right below shows the distribution of the MPPs. The conventional particles aggregated in the luminal mucus and did not reach the target tissues. In contrast, the MPPs coated the entire vaginal epithelium, including all the target surfaces.

Conventional Particles



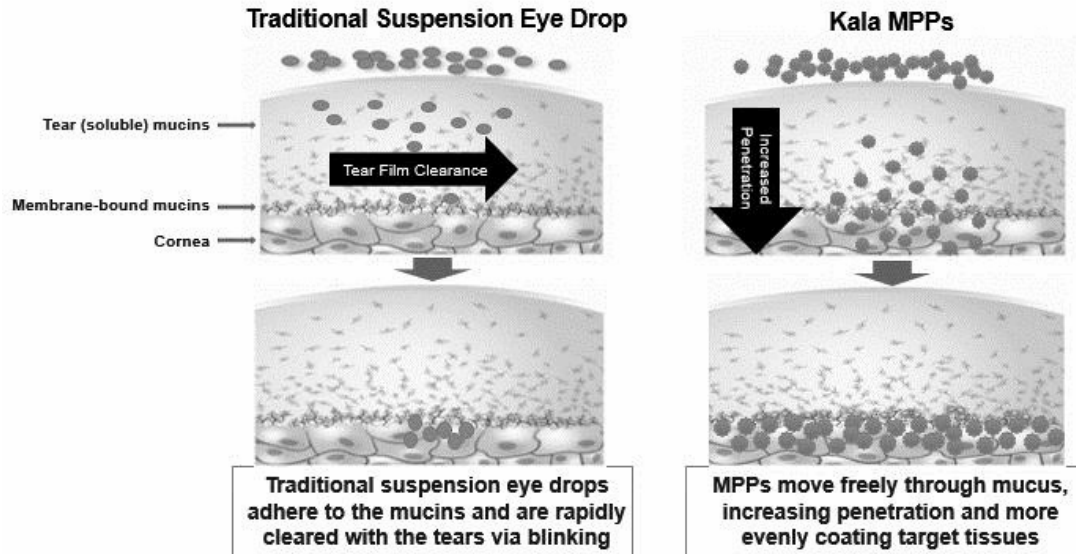
MPPs



Source: Laura M. Ensign et al., Mucus-Penetrating Nanoparticles for Vaginal Drug Delivery Protect Against Herpes Simplex Virus, *Science Translational Medicine*, June 14, 2012.

While a significant portion of conventionally formulated ophthalmic drugs are rapidly eliminated via the tear film, we have shown that our MPPs are capable of achieving higher concentration on the surface of the eye, thereby enabling the active drug substance to reach cells in the underlying ocular tissue at higher levels.

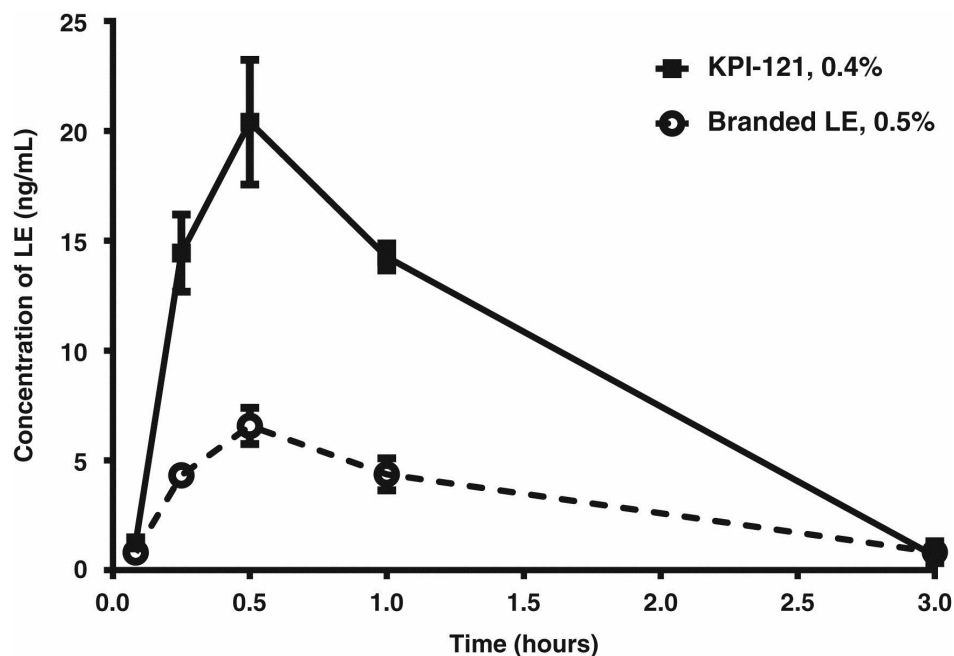
The graphic below illustrates the ability of our MPP drug nanoparticles to penetrate the tear and membrane-bound mucins to reach the ocular surface, as compared to conventional, non-coated particles, which adhere to the mucins in the tear film and are cleared with the tears through blinking.



This graphic is included for illustrative purposes only and is not intended to provide a complete representation of the way in which our MPP drug nanoparticles interact with the ocular surface.

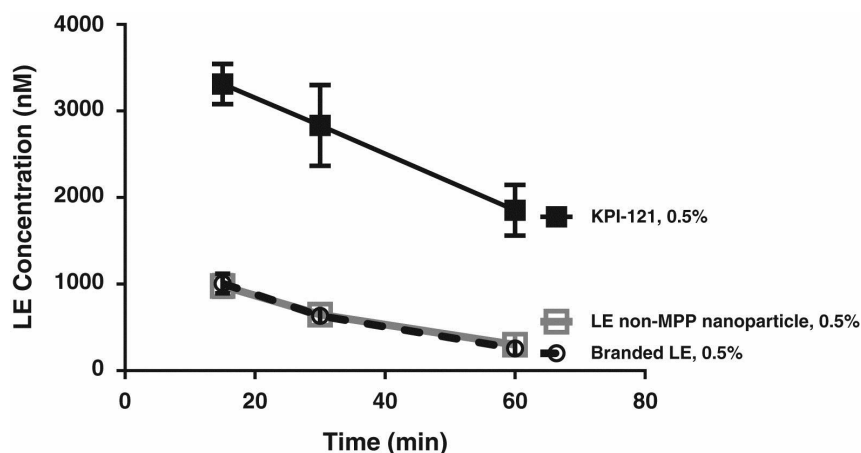
Our initial focus is to leverage our MPP technology, to enhance delivery of drugs into the eye. In preclinical studies, KPI-121 demonstrated favorable pharmacokinetic characteristics and increased drug penetration into ocular tissues as compared to a branded form of LE. In a preclinical study of ocular inflammation in rabbits, KPI-121 0.5% administered four times a day, or QID, showed a larger reduction of inflammation as compared to a branded form of LE 0.5% given QID, as measured by the mean aqueous humor cell counts after intravitreal injection of lipopolysaccharide. We also administered either 0.4% KPI-121 or 0.5% branded LE to the eyes of two groups of rabbits. As illustrated in the line graph below, the concentrations of LE in aqueous humor, a transparent gelatinous fluid that fills the anterior and posterior chambers between the lens and the cornea, of the rabbit eyes treated with KPI-121 were more than three times higher than the rabbit eyes treated with branded LE 30 minutes after dosing, at a 20% lower concentration.

LE in Aqueous Humor



We administered KPI-121 0.5%, branded LE 0.5%, or 0.5% of an LE non-MPP nanoparticle, to the eyes of three groups of rabbits and measured the amount of LE that was delivered to the cornea. The non-MPP nanoparticle was similar in size to our MPP nanoparticles but lacked the proprietary surface coating used in our MPP nanoparticles. As illustrated in the line graph below, concentrations of LE in the cornea of the rabbit eyes treated with KPI-121 were more than three times higher than the concentrations in rabbits treated with branded LE between 20 and 40 minutes after dosing. In addition, the rabbit eyes treated with the non-MPP nanoparticles had concentrations of LE similar to that in the rabbit eyes treated with branded LE and did not display the improved drug bioavailability properties observed with KPI-121. We believe these results highlight the importance of our proprietary MPP technology and show that KPI-121's improved pharmacokinetic profile has the potential to reduce the dosing strength and/or frequency of administration of LE with KPI-121 as compared to branded LE.

LE in Cornea



We also have demonstrated the potential of our MPP nanoparticles to increase the mucus penetration of over fifteen classes of drugs. While our current focus is in ophthalmology, in preclinical studies, our MPP technology has been effective in delivering drugs to the lungs, cervical/vaginal tract, gastrointestinal tract and other mucus-protected tissues. We have the ability to vary the rate of drug release as appropriate for the targeted disease state and tissue. As a result, drugs can be delivered either in rapid release formulations or as sustained release formulations that slowly release drug over a time period that ranges from hours to days.

Eye Disease

The human eye is often segmented into two sections—the front and back of the eye. The front of the eye consists of tissues and structures responsible for the protection and maintenance of the eye (including the cornea, conjunctiva and tear film), for providing nutrition to the various tissues of the eye (aqueous humor) and for facilitating the optimal transfer and focusing of light to the retina (including the cornea, iris and lens). Front-of-the-eye diseases include ocular inflammation, dry eye disease, infection, allergy and refractive disorders. Clinicians typically treat diseases that affect the front of the eye with topically applied eye drops. A major limitation of these treatments is that the eye rapidly eliminates topically applied medications via the tear film, limiting the penetration of drugs into the ocular tissue.

The back of the eye contains the retina, which is the light sensing layer of tissue, the choroid, which is a key vascular layer of the eye, the vitreous humor, which is a transparent gel that fills the vitreous chamber between the lens and the retina, and the optic nerve, which transmits visual information from the retina to the brain. Common retinal diseases include AMD, DR, DME and RVO. These diseases frequently result in damage to the vasculature of the eye, leading to poor function and/or leaking of existing vessels and often leading to proliferation of new, abnormal and leaky blood vessels in the back of the eye. These conditions can lead to retinal damage, scarring and irreversible loss of vision. The most common treatments for these diseases involve administration of biologic agents that block the VEGF pathway and prevent or retard the blood vessel leakage and/or proliferation. Unfortunately, clinicians must inject these biologic agents directly into the vitreous of the eye via frequent intravitreal injections, or IVTs, to maintain vision. An effective therapeutic to treat retinal diseases with improved dosing regimen would bring significant benefits to patients.

Our Product and Product Candidates

KPI-121 Program

Both INVELTYS and our lead product candidate, KPI-121 0.25%, consist of MPP nanosuspensions of LE designed to enhance penetration through the mucus layer of the tear film to enable LE to reach the underlying ocular tissue. We believe that INVELTYS and KPI-121 0.25%, have a favorable profile for the treatment of front-of-the-eye inflammatory conditions due to their broad mechanism of action, rapid onset of relief and favorable tolerability profile. LE is a corticosteroid developed specifically for the treatment of ophthalmic conditions and is designed to limit side effects, such as increases in IOP and cataract formation, that are associated with other ocular steroids. The first LE containing product was approved by the FDA in 1998.

INVELTYS and KPI-121 0.25% are eye drops that are topically administered as an aqueous suspension of LE. In preclinical studies, MPP nanosuspensions of LE demonstrated superior pharmacokinetic characteristics and bioavailability as compared to branded LE, with increased penetration of LE into ocular tissues. Our KPI-121 program includes the following:

- FDA-approved INVELTYS, administered two times a day, for the treatment of post-operative inflammation and pain following ocular surgery; and
- KPI-121 0.25%, administered four times a day, which we are developing for the temporary relief of the signs and symptoms of dry eye disease.

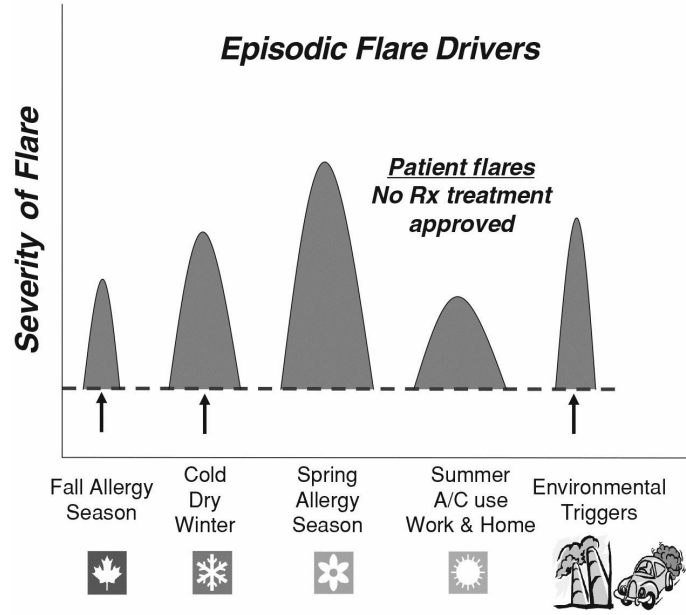
INVELTYS received FDA approval in August 2018 under Section 505(b)(2) of the FDCA. The Section 505(b)(2) pathway provides an alternate and potentially more expeditious pathway to FDA approval for new or improved formulations, or new uses of previously approved products, by enabling an applicant to rely, in part, on the FDA's findings of safety and efficacy for an existing product, or published literature, in support of the NDA. An NDA filed under Section 505(b)(2) allows us to reference the FDA's prior findings of safety and efficacy for LE to supplement the safety and efficacy data generated in our clinical trials. In December 2018, the FDA accepted our NDA for KPI-121 0.25% for filing and granted a PDUFA date of August 15, 2019. We are seeking FDA approval of KPI-121 0.25% through the Section 505(b)(2) regulatory pathway as well.

KPI-121 0.25% for Dry Eye Disease

Dry Eye Disease Overview

Dry eye disease is a chronic, episodic, multifactorial disease affecting the tears and ocular surface that can result in tear film instability, inflammation, discomfort, visual disturbance and ocular surface damage. While the precise cause of dry eye disease is not fully understood, it often involves impairment of the lacrimal unit, which consists of the lacrimal glands, ocular surface and the sensory and motor nerves that connect them, and has a significant inflammatory component. There is significant published research that suggests that inflammation plays a major role in the development of dry eye disease. Dry eye disease can have a significant impact on quality of life and can potentially cause long-term damage to the ocular surface. Due to the impact of dry eye disease on tear film dynamics, the condition can affect performance of common vision-related activities such as reading, using a computer and driving, and can lead to complications associated with visual impairment. Dry eye disease is commonly treated by ophthalmologists and optometrists.

A significant number of dry eye disease patients experience acute, episodic exacerbations of their symptoms, which we refer to as flares, at various times throughout the year that can cause significant discomfort and disability. A dry eye flare is defined as a rapid onset, inflammation-driven response to a variety of triggers that typically cannot be adequately managed with the patient's ongoing therapy. As illustrated in the graphic below, these flares can be triggered by numerous factors, such as environmental stimuli related to exposure to allergens, pollution, wind and low humidity. Intense visual concentration, such as watching television or working at a computer, can also trigger flares. Other potential triggers include contact lens wear, smoking and sleep deprivation, which cause ocular surface inflammation and impact tear production and/or tear film stability.



This graphic is included for illustrative purposes only and is not intended to provide an actual representation of the number or severity of flares, or the drivers thereof, either on an absolute basis or relative to one another.

We estimate dry eye disease affects approximately 33 million people in the United States. Based on third-party academic research, we believe dry eye disease results in approximately \$55 billion in direct and indirect costs in the United States each year, of which approximately \$3.8 billion are direct medical costs. The exact prevalence of dry eye disease is unknown due to the difficulty in defining the disease and the lack of a single diagnostic test to confirm its presence. The Beaver Dam Offspring Study, a major epidemiological study published in 2014 in the *American Journal of Ophthalmology*, reported that in a cohort of over 3,000 patients, dry eye disease was self-reported by 14.5% of the patients. The prevalence of dry eye disease increases with age, and we expect that the number of dry eye disease cases will increase as the U.S. population continues to age. Epidemiology and market research commissioned by us indicate that there are an estimated 16 million patients with a diagnosis of dry eye disease in the United States. The vast majority of dry eye patients experience acute exacerbations of their symptoms, which are commonly referred to as flares, at various times throughout the year.

The most commonly used treatments for dry eye disease in the United States are over-the-counter eye drops, often referred to as "artificial tears," and two prescription pharmaceutical products, Restasis and Xiidra. Artificial tears are palliative in nature and intended to supplement insufficient tear production or improve tear film instability, but do not treat the underlying inflammation in dry eye disease. Restasis increases tear production and Xiidra treats the signs and symptoms of dry eye disease, however, both Restasis and Xiidra are typically used chronically for dry eye patients who have continuous symptoms. As each of Restasis and Xiidra have a relatively long onset of action, they are not generally

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used for the short-term treatment of episodic dry eye flares. We believe there is a larger proportion of dry eye patients whose symptoms are primarily episodic as opposed to chronic, and for whom a chronic therapy is not necessary and an FDA-approved, acute, short-term therapy can address a significant unmet need

Limitations of Existing Treatments for Dry Eye Disease

Initial treatment for dry eye disease in the United States frequently consists of over-the-counter artificial tear/lubricating eye drops. Most over-the-counter artificial tears are palliative and typically provide only short term or temporary relief by lubricating the eyes and helping to maintain moisture on the outer surface of the eye. These products do not treat the underlying inflammatory components of dry eye disease.

In addition to over-the-counter artificial tears, Restasis and Xiidra are sometimes prescribed as a chronic therapy for the treatment of dry eye disease. We believe that less than 15% of patients diagnosed with dry eye disease in the United States use a chronic therapy to treat their disease. Restasis is a topically applied, ophthalmic formulation of the immuno-suppressant cyclosporine. Restasis is not approved for the treatment of the signs and symptoms of dry eye disease, but rather for increasing tear production in patients whose tear production is presumed to be suppressed due to ocular inflammation associated with dry eye disease. In 2018, Restasis had sales of approximately \$1.2 billion in the United States. Restasis frequently causes burning upon instillation, and, according to the package insert, 17% of patients in clinical trials of Restasis reported ocular burning upon instillation. Xiidra is a topically applied ophthalmic formulation of lifitegrast, a small molecule LFA antagonist, which was approved by the FDA in July 2016 for the treatment of the signs and symptoms of dry eye disease and was commercially launched in the United States in August 2016. Xiidra had sales of approximately \$255.1 million for the nine month period ended September 30, 2018. Xiidra, like Restasis, is typically used chronically. Due to each of Restasis and Xiidra having a relatively long onset of action, they are not generally used for the short-term treatment of dry eye flares.

Topically applied steroids have been shown to provide some clinical benefit to patients with dry eye disease. However, no topical steroid products, including INVELTYS, are approved in the United States for the acute or chronic treatment of dry eye disease, and there is no widely established treatment paradigm for the safe use of steroids in treating dry eye disease. As a result, treatment of dry eye disease represents a very small percentage of total ophthalmic steroid use in the United States.

KPI-121 0.25% Opportunity in Dry Eye Disease

We believe that KPI-121 0.25% has a favorable profile for the management of dry eye disease flares, including the following attributes:

- *Broad mechanism of action.* LE is a corticosteroid. Corticosteroids are known for their broad anti-inflammatory properties.
- *Rapid onset of relief.* In our Phase 2 and Phase 3 clinical trials, patients treated with KPI-121 0.25% reported reductions in ocular discomfort within days of initiation of treatment.
- *Favorable safety and tolerability profile.* LE is one of the safest topical ocular steroids available due to its unique pharmacokinetics. LE was designed to be metabolized after exerting its anti-inflammatory action in the eye. The metabolism of LE to inactive metabolites reduces exposure of the trabecular meshwork, an area of tissue located in the anterior chamber that is responsible for draining the aqueous humor from the eye, to active steroid, thus reducing the risk of an increase in IOP relative to other steroids. In both STRIDE 1 and STRIDE 2, KPI-121 0.25% had comparable rates of IOP to placebo. No serious adverse events were associated with KPI-121 0.25% in either trial.
- *Specifically targeting relief of episodic dry eye flares.* The mechanism of action and rapid onset of relief of KPI-121 0.25% in dry eye disease is distinct from that of artificial tears and chronic therapies like Restasis and Xiidra. Therefore, we expect it to be used as a stand-alone short course therapy to provide rapid relief

of dry eye flares by improving ocular discomfort (a dry eye symptom) and reducing ocular redness (a dry eye sign).

- *Potentially complementary to existing therapies.* We believe that patients on chronic therapies also experience dry eye flares and could potentially benefit from using KPI-121 0.25% in addition to their maintenance therapy.

If we receive FDA approval of an NDA for KPI-121 0.25% for the temporary relief of the signs and symptoms of dry eye disease, we believe that we could have the first FDA-approved product for this indication with demonstrated safety and efficacy and a two-week course dosing regimen. We believe that these attributes will make KPI-121 0.25% attractive to prescribing clinicians for treating patients that suffer from dry eye flares.

KPI-121 0.25% Clinical Development Program

In 2014, we conducted a Phase 2 double-masked, randomized, controlled clinical trial of KPI-121 0.25% in 150 patients with dry eye disease at nine clinical sites. Patients were enrolled in the trial based on their magnitude of conjunctival hyperemia and ocular discomfort prior to treatment. Patients had a two week run-in with placebo administered four times a day and were required to maintain a similar magnitude of conjunctival hyperemia and ocular discomfort following this run-in period to be included in the randomization portion of the trial. Upon achieving the trial entry criteria after this run-in period, patients were randomized to receive either KPI-121 0.25% or a placebo four times a day for 28 days. Safety and efficacy assessments were made over the four week dosing period.

For our Phase 2 clinical trial, the primary sign endpoint was conjunctival hyperemia at day 29, as measured via a 0 to 4 scale ranging from no hyperemia (score=0) to severe hyperemia (score=4), and the primary symptom endpoint was ocular discomfort severity at day 29, as reported by the patient on a visual analog scale ranging from 0 to 100 mm (0 mm=very mild; 100 mm=very severe).

KPI-121 0.25% achieved statistical significance for the primary clinical sign endpoint of conjunctival hyperemia at day 29. A positive treatment effect for hyperemia was also achieved for conjunctival hyperemia at day 15 ($p=0.0090$). In addition, a higher proportion of patients treated with KPI-121 0.25% demonstrated a reduction of one unit or greater in conjunctival hyperemia as compared to patients treated with placebo. Patients treated with KPI-121 0.25% also showed reductions in the symptom endpoint of ocular discomfort severity at days 29 and 15 but did not reach statistical significance for this endpoint based on the analysis that was pre-defined in the statistical analysis plan.

Following completion of our Phase 3 trials, we conducted additional analysis on a post-hoc basis of our Phase 2 data using the same statistical analysis plan as used to test the primary symptom endpoints in the Phase 3 trials. Using this analysis we observe a treatment effect for ocular discomfort at day 15 of a similar magnitude as was observed in STRIDE 1 (-5.27 mm difference in Phase 2 compared to -5.44 mm in STRIDE 1) and a p-value of 0.0489. Although post-hoc analyses may be given less weight by regulatory authorities than pre-specified analyses, we believe these analyses may provide important information regarding KPI-121 0.25% and may be helpful in reviewing our NDA submission.

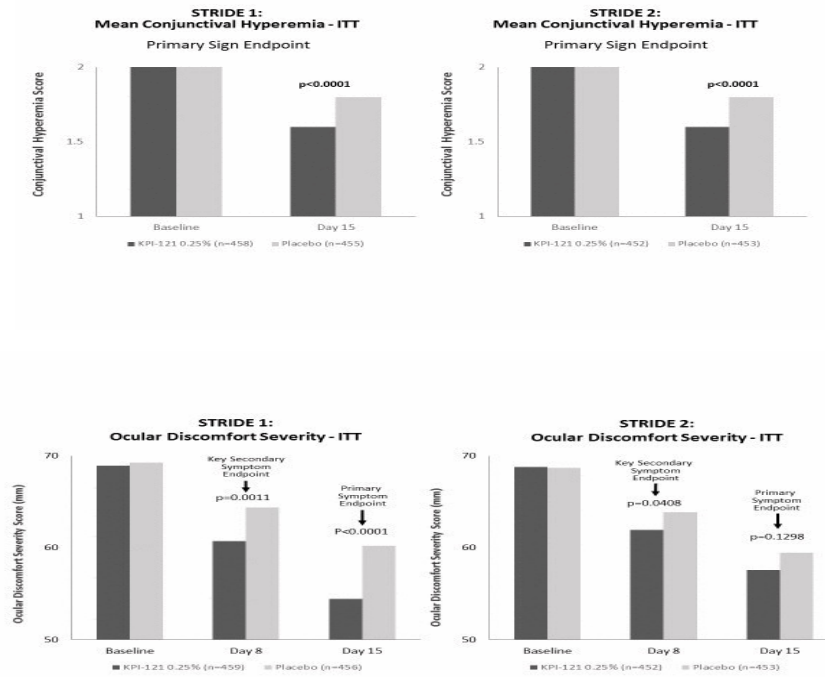
KPI-121 0.25% was generally well tolerated, with no treatment-related significant adverse events observed during the course of the trial. The only treatment-emergent adverse event reported in greater than 3% of patients was instillation site pain, which was reported in 6.9% of patients treated with KPI-121 0.25% compared to 3.8% of patients treated with placebo. Patients in the KPI-121 0.25% and placebo treatment arms had a similar profile with respect to mean IOP, and the number of patients with an IOP increase of greater than 5 mm Hg was similar in the two treatment groups. In June 2016, we initiated two Phase 3 clinical trials, STRIDE 1 and STRIDE 2, comparing KPI-121 0.25% to placebo, both administered four times a day for 14 days. These clinical trials were each multicenter, randomized, double-masked, placebo controlled, parallel-arm studies comparing KPI-121 0.25% to placebo each dosed QID for 14 days. Patients who met initial screening and inclusion/exclusion criteria underwent a two week run-in period with placebo dosed in each eye QID for 14 days. Patients who continued to meet inclusion and exclusion criteria after the run-in were randomized to either KPI-121 0.25% or placebo. A total of 918 patients were randomized in STRIDE 1 and 909 patients were randomized in STRIDE 2. Conjunctival hyperemia was measured using a 0 to 4 scale ranging from no hyperemia

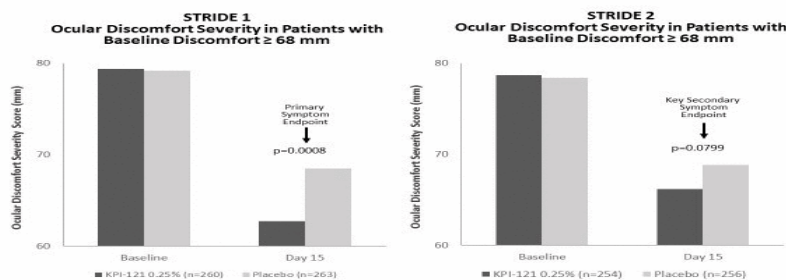
(score=0) to severe hyperemia (score=4). Ocular discomfort severity was graded daily by the patient over the entire course of the trial using a visual analog grading scale ranging from 0 to 100 mm (0 mm=very mild; 100 mm=very severe) recorded in a patient diary.

In STRIDE 1, statistical significance was achieved for the primary sign endpoint of conjunctival hyperemia change from baseline to day 15 in the ITT population ($p < 0.0001$) and the primary symptom endpoint of ocular discomfort severity change from baseline to day 15 in the ITT population ($p < 0.0001$). Statistical significance was also achieved for a second pre-specified primary symptom endpoint of ocular discomfort severity change from baseline to day 15 in patients with more severe baseline ocular discomfort ($p = 0.0008$). Statistical significance was not achieved for a second pre-specified primary sign endpoint, inferior corneal staining change from baseline to day 15 ($p = 0.1128$). A positive treatment effect for ocular discomfort was also observed in the ITT population at day eight ($p = 0.0011$), a key secondary endpoint.

In STRIDE 2, statistical significance was achieved for the primary sign endpoint of conjunctival hyperemia change from baseline to day 15 in the ITT population ($p < 0.0001$). Statistical significance was not achieved for the primary symptom endpoint of ocular discomfort severity change from baseline to day 15 in the ITT population ($p = 0.1298$), although a positive treatment effect was observed at day eight ($p = 0.0408$), a key secondary endpoint. A trend towards a positive treatment effect was observed for ocular discomfort severity change from baseline to day 15 in the patients with more severe baseline ocular discomfort ($p = 0.0799$), which was a key secondary endpoint in this trial.

The results for ocular hyperemia, ocular discomfort in the ITT population and ocular discomfort in patients with more severe baseline discomfort are shown below.





We have conducted additional analyses on a post-hoc basis of STRIDE 1, STRIDE 2 and our Phase 2 data to better understand our clinical results, inform our developmental plans and potentially support an NDA submission. One key analysis was evaluation of the Phase 2 ocular discomfort data using the same statistical analysis plan as used to test the primary symptom endpoints in the Phase 3 trials. Using this analysis we observe a treatment effect for ocular discomfort at day 15 of similar magnitude as was observed in STRIDE 1 (-5.27 mm difference in Phase 2 compared to -5.44 mm in STRIDE 1) and a p-value of 0.0489. In addition, we performed an analysis of the pooled data from the ITT populations from STRIDE 1 and STRIDE 2, which resulted in an observed positive treatment effect for ocular discomfort at day 15 ($p < 0.0001$). The pooled results in 2 exploratory analyses in subgroups defined by geographical regions of east and west achieved p-values of 0.0071 and 0.0021 respectively and north and south achieved p-values of 0.0002 and 0.0176, respectively. Further, when we analyzed the ocular discomfort data at days 9 through 14 in STRIDE 1 and STRIDE 2 using the same statistical method as day 8 and 15, we observed a positive treatment effect with p-values less than 0.002 at all time points between days 8 and 15 in STRIDE 1 and p-values less than 0.05 at 6 of 8 time points in STRIDE 2. Although post-hoc analyses may be given less weight by regulatory authorities than pre-specified analyses, we believe these analyses may provide important information regarding KPI-121 0.25% and may be helpful in reviewing our NDA submission.

KPI-121 0.25% was well tolerated in both trials. The most common adverse event observed in STRIDE 1 was instillation site pain, which was observed in 6.1% of patients in both the KPI-121 0.25% treatment group and the placebo group. The only other adverse event reported by greater than 1% of patients in STRIDE 1 was eye irritation, which was reported in 1.1% of patients on KPI-121 0.25% vs. 1.5% of patients on placebo. Elevations in IOP, a known side effect with topical corticosteroid administration, were similar between the two groups in STRIDE 1 with 0.4% in the KPI-121 0.25% group experiencing an increase in IOP of 5 mm of mercury (mmHg) or greater resulting in an IOP of 21 mmHg or greater compared to 0.4% in the placebo group.

The most common adverse event observed in STRIDE 2 was instillation pain which was reported by 5.7% of patients in the KPI-121 0.25% treatment group vs. 4.4% in the placebo group. The only other adverse event reported by greater than 1% of patients was blurred vision, which was reported in 0.2% of patients on KPI-121 0.25% vs. 1.3% of patients on placebo. Elevations in IOP were similar between the two groups with 1.1% in the KPI-121 group experiencing an increase in IOP of 5 mmHg or greater resulting in an IOP of 21 mmHg or greater compared to none in the placebo group.

We met with the FDA in June 2018 to discuss the results our Phase 3 dry eye clinical trials and potential next steps for our dry eye disease program. Based on our discussions, we filed an NDA in September 2018, which included data from three clinical trials studying approximately 2,000 patients, including one Phase 2 trial and two Phase 3 efficacy and safety trials (STRIDE 1 and STRIDE 2). In December 2018, the FDA accepted for filing our NDA and set a target action date under PDUFA of August 15, 2019.

Based upon our discussions with FDA, we also initiated an additional Phase 3 clinical trial, STRIDE 3, in the third quarter of 2018 evaluating KPI-121 0.25% for the temporary relief of the signs and symptoms of dry eye disease. The STRIDE 3 trial is a multicenter, randomized, double-blind, placebo controlled, parallel-arm study comparing KPI-121 0.25% to placebo, each dosed four times a day, or QID, for 14 days, in approximately 900 patients with dry eye disease. Subjects who meet initial screening and inclusion/exclusion criteria undergo a 2-week run-in period with placebo. Subjects who continue to meet inclusion/exclusion criteria after the run-in are randomized to either KPI-121 0.25% or placebo. The primary endpoint, Day 15 ocular discomfort severity, is based upon a patient diary in which ocular discomfort is recorded daily over the entire course of the trial using a visual analog grading scale.

We believe we have identified key factors that contributed to the differences observed in the results from STRIDE 2 compared to those of STRIDE 1 and the Phase 2 trial, and that changes made to the inclusion/exclusion criteria of STRIDE 3 based on these analyses will improve the probability of success. We expect to report top-line results for STRIDE 3 in the fourth quarter of 2019.

INVELTYS for Post-Operative Inflammation and Pain

Post-Operative Inflammation and Pain Overview

Ocular inflammation and pain are common complications following ocular surgery. According to Marketscope, in 2018 there were approximately 8.2 million ocular surgeries in the United States. Marketscope also projected that there would be approximately 10.0 million ocular surgeries in the United States in 2023. Commonly performed ocular surgeries include cataract, cornea, refractive, oculoplastic and glaucoma procedures. Tissue damage caused by ocular surgery leads to the production of prostaglandins and increases in blood flow to the affected area, which contribute to inflammation. The standard of care for post-operative inflammation and pain includes anti-inflammatory drugs such as corticosteroids, which improve patient comfort and accelerate recovery through disruption of the inflammatory cascade. Commonly used topical ocular corticosteroid products for the treatment of post-operative inflammation and pain are approved for dosing four times a day. This dosing regimen can be burdensome for patients as they are taking multiple eye drops following surgery, and four-times-a-day dosing is believed to reduce patient compliance.

INVELTYS was approved by the FDA on August 22, 2018. INVELTYS is the first and only twice-daily ocular corticosteroid indicated for the treatment of post-operative inflammation and pain following ocular surgery.

Limitations of Treatments for Post-Operative Inflammation and Pain

LE is a unique steroid that was designed to limit side effects, such as increases in IOP and cataract formation, that are associated with other ocular steroids. The first LE containing product, Lotemax[®], was approved by the FDA in 1998. Subsequent gel and ointment formulations of Lotemax were approved by the FDA for the treatment of post-operative inflammation and pain following ocular surgery. Durezol[®] is a topical steroid approved by the FDA for the treatment of inflammation and pain associated with ocular surgery. Durezol eye drops are dosed four times a day for two weeks followed by dose tapering based on patient response.

The most commonly used ocular steroids, including Lotemax products and Durezol, are approved for the treatment of post-operative inflammation and pain with a four-times-a-day dosing regimen. This dosing regimen can be burdensome for patients as they are taking multiple eye drops following surgery, and four-times-a-day dosing may reduce patient compliance with the prescribed medication. Other than INVELTYS, there is currently no marketed ocular steroid product with an approved twice-a-day dosing regimen.

INVELTYS Opportunity in Post-Operative Inflammation and Pain

We believe that INVELTYS has a favorable profile for the treatment of inflammation and pain following ocular surgery, including the following attributes:

- *Twice daily dosing.* INVELTYS is the first and only twice-daily ocular corticosteroid indicated for the treatment of post-operative inflammation and pain following ocular surgery. All other ocular corticosteroid

products for the treatment of post-operative inflammation and pain are approved for dosing four times a day. Given the generally accepted view that less frequent dosing leads to higher patient compliance, we believe the ability to achieve a significant reduction in inflammation and pain following surgery with a twice-a-day product will be a key differentiating attribute of INVELTYS.

- *Favorable safety and tolerability profile.* LE is one of the safest topical ocular steroids available due to its unique pharmacokinetics. LE was designed to be metabolized after exerting its anti-inflammatory action in the eye. The metabolism of LE to inactive metabolites reduces exposure of the trabecular meshwork to the active steroid, thus reducing risk of IOP increase relative to other steroids. In our completed Phase 3 clinical trials, INVELTYS had a tolerability profile comparable to placebo, with no treatment-related serious adverse events observed during the course of either Phase 3 trial.

Our current estimates of potential future revenue from sales of INVELTYS are based, in part, on market research data we have commissioned. For example, based on a market survey we commissioned of 100 ophthalmologists, we believe INVELTYS offers advantages over existing post-surgical treatment options due to its twice-daily dosing, two-week course of treatment and safety data, including low incidence of reported IOP spikes, and efficacy data from our clinical trials. In this market survey, a majority of surveyed ophthalmologists indicated they were likely to prescribe INVELTYS.

Other Preclinical Opportunities for Dry Eye Disease

Building on the results of our clinical trials for our INVELTYS and KPI-121 0.25% product candidates, we are evaluating opportunities for MPP nanosuspensions of LE with less frequent daily dosing regimens for the temporary relief of the signs and symptoms of dry eye disease and for potential chronic treatment of dry eye disease.

rTKI Program

Retinal Disease

There are a range of retinal diseases and conditions that adversely affect vision.

Age-Related Macular Degeneration (AMD)

AMD is a degeneration of the macula of the retina that leads to impairment and loss of central vision. There are two categories of AMD: “Dry” AMD, which involves slow deterioration of the retina with submacular drusen, atrophy, loss of macular function and central vision impairment; and “Wet” AMD, which involves growth of abnormal blood vessels under the retina and macula, resulting in edema, tissue damage and rapid loss of central vision. If untreated, neovascularization in Wet AMD patients typically results in significant vision loss and the formation of a scar under the macular region of the retina. Most cases begin as Dry AMD, which can progress to Wet AMD. Wet AMD is a leading cause of blindness in people over the age of 55 in the United States and the European Union. The incidence of Wet AMD increases substantially with age, and we expect that the number of cases of Wet AMD will increase with growth of the elderly population in the United States.

The current standard of care for Wet AMD is intravitreal injection of drugs that target VEGF, one of the key proteins involved in neovascularization.

Diabetic Retinopathy (DR) and Diabetic Macular Edema (DME)

DR is an ocular complication of diabetes involving changes of retinal blood vessels that lead to significant visual impairment. These changes include dysfunction of retinal vasculature (nonproliferative retinopathy), with vascular occlusion and increased permeability, leading to retinal hypoxia and DME. The disease can further progress to proliferative retinopathy with retinal neovascularization, hemorrhage and retinal detachment.

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Among an estimated 19.8 million adults in the United States aged forty years and older known to have diabetes, the prevalence rate for DME is 3.8%, or approximately 746,000 people. DME is the leading cause of visual impairment and blindness in Americans between 20 and 74 years old.

Retinal Vein Occlusion (RVO)

RVO is a blockage of the small veins that carry blood away from the retina. The disease can cause sudden blurring or vision loss in all or part of one eye. RVO has been estimated to affect 16 million people worldwide.

Limitations of Existing Treatments for Retinal Disease

VEGF is a protein that plays a critical role in the formation of new blood vessels and increased permeability, two pathological processes that contribute to the vision loss associated with certain retinal diseases. Several VEGF tyrosine kinase inhibitors have been investigated in AMD patients in clinical trials. These inhibitors have been administered in a variety of ways, including intravitreal injection, oral administration and topical dosing. To date, no VEGF tyrosine kinase inhibitors have been approved in the United States for the treatment of ocular diseases. We believe that there is a substantial market opportunity for a safe and effective VEGF tyrosine kinase inhibitors to treat various retinal diseases, such as AMD, DR, DME, RVO and related neovascular diseases.

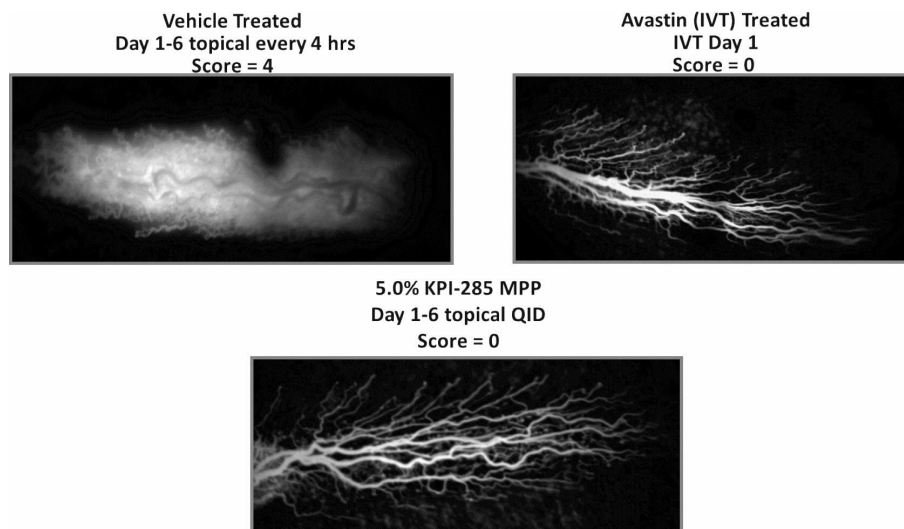
The most common treatments for retinal diseases involve administration of biologic agents that block the VEGF pathway and prevent or retard the blood vessel leakage and/or proliferation. Unfortunately, clinicians must inject these biologic agents directly into the eye via frequent IVTs to maintain vision. Sales of the two leading IVT biologic agents used to treat eye diseases associated with abnormal blood vessel proliferation, Genentech's Lucentis® and Regeneron's Eylea®, were \$1.65 billion and \$4.0 billion, respectively, in the United States in 2016. An effective therapeutic to treat retinal diseases with improved dosing regimen would bring significant benefits to patients.

rTKI Program for the Potential Treatment of Wet AMD, DR, DME and RVO

Through our rTKI program we generate small molecule NCEs that are designed to be potent VEGF receptor kinase inhibitors. KPI-285 is our current rTKI lead compound. In preclinical rabbit studies, KPI-285 demonstrated a potency of less than one nanomolar against the VEGF receptor-2 kinase and good selectivity against particular growth factor receptor kinases, cell cycle kinases and other detrimental receptors.

Also in preclinical rabbit studies, topical administration of KPI-285 achieved concentrations in tissues in the back of the eye well above the concentrations required for *in vitro* inhibition of 50% of the VEGF receptor kinase activity. In addition, in a rabbit model of VEGF induced vascular leakage, topically applied KPI-285 MPP reduced leakage to an extent similar to that achieved with an IVT injection of Genentech's Avastin®, a recombinant human monoclonal antibody that binds to VEGF. In this model, vascular leakage of fluorescein was induced by IVT injections of VEGF. The extent of fluorescein leakage observed in various treatment groups was scored in a blinded fashion on a scale from 0 to 4, with 0 being no leakage and 4 being heavy leakage. As shown in the photographs below, the

magnitude of the effect achieved with topical administration of KPI-285 5.0% was similar to that observed with IVT injection of Avastin.



We believe that an effective therapy with an improved dosing regimen for patients with retinal diseases such as AMD, DR, DME and RVO will be a significant advancement in the treatment of these diseases and could increase patient compliance and reduce treatment burden in patients suffering from these sight threatening diseases. Prior to initiating IND-enabling studies, we may consider potential collaborative partnership opportunities to advance our product candidates we develop through our rTKI program, including KPI-285.

Potential Applications in Other Diseases

Mucus limits delivery of conventionally formulated drugs to mucosal tissues such as the lung, cervical/vaginal and gastrointestinal tract. While our current focus is in ophthalmology, our AMPPLIFY technology has been effective in preclinical studies in enhancing drug delivery to these other tissues. We also have demonstrated in preclinical studies that AMPPLIFY technology can be used to increase mucus penetration of over fifteen classes of drugs.

Competition

The biotechnology and pharmaceutical industries are characterized by rapidly advancing technologies, intense competition and a strong emphasis on proprietary products. While we believe that our technologies, knowledge, experience and scientific resources provide us with competitive advantages, we face competition from many different sources, including major pharmaceutical, specialty pharmaceutical and biotechnology companies, academic institutions and governmental agencies and public and private research institutions. Any product candidates that we successfully develop and commercialize will compete with existing therapies and new therapies that may become available in the future.

Our competitors include large pharmaceutical and biotechnology companies, and specialty pharmaceutical and generic drug companies. Many of our competitors have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals and marketing approved products than we do. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs. Smaller or early stage companies may

also prove to be significant competitors, particularly through collaborative arrangements with large and established companies.

The key competitive factors affecting the success of INVELTYS, our first product, and KPI-121 0.25% and other product candidates, if approved, are likely to be the product or product candidate's efficacy, safety, method of administration, convenience, price, the level of generic competition and the availability of insurance coverage and reimbursement from government and other third-party payors.

Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are more convenient or are less expensive than any products that we may develop. Our competitors also may obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for ours. In addition, our ability to compete may be affected because in many cases insurers or other third-party payors seek to encourage the use of generic products.

Competition in Inflammation and Pain Following Ocular Surgery

Following ocular surgery, topical steroids are commonly prescribed to manage and prevent complications from post-operative inflammation.

Topical steroid drops are the main competition to INVELTYS for the treatment of inflammation and pain following ocular surgery. The current branded market leaders in the United States based on revenue are Lotemax products and Durezol. Generic topical steroid formulations consist mainly of products containing prednisolone, fluorometholone or dexamethasone.

There are also non-topical formulations of ocular steroids that have been recently approved and/or marketed. EyePoint Pharmaceuticals, or EyePoint, has received FDA approval for Dexycu™, an intraocular suspension of dexamethasone for the treatment of post-operative inflammation. EyePoint has stated that it expects to launch Dexycu in the first half of 2019. Ocular Therapeutix, or Ocular, has received FDA approval for Dextenza®, an intracanalicular insert of dexamethasone, for the treatment of ocular pain following ophthalmic surgery. Ocular has indicated that it expects to commercially launch Dextenza in the U.S. in the third quarter of 2019. In addition, there are various formulations of steroids that are produced by compounding pharmacies and that are in drop form or are injected into the eye following ocular surgery.

There also are other product candidates for treatment of pain and inflammation following ocular surgery in the United States that are in earlier stages of development.

Competition in Dry Eye Disease

We are developing KPI-121 0.25% for the temporary relief of the signs and symptoms of dry eye disease, which may include the management of dry eye disease flares. The current disease management approaches for dry eye disease in the United States includes non-pharmaceutical therapies and pharmaceutical therapies. Non-pharmaceutical therapies include over-the-counter artificial tear eye drops, which are palliative and used on an intermittent or chronic basis to provide short-term symptomatic relief of dryness and irritation; hot compresses for the eye and lid hygiene management; devices, such as punctal plugs that are inserted into the tear ducts to inhibit tear drainage, resulting in more moisture on the surface of the eye; and TrueTear® Intranasal Tear Neurostimulator, a neurostimulator that received marketing approval from the FDA in April 2017 which provides electrical pulses within the nasal cavity to stimulate tear production.

Pharmaceutical therapies for dry eye disease include off-label prescription drugs, including topical steroid drops and/or other similar products, which are prescribed on occasion for treatment of dry eye disease; on-label prescription drugs, including Restasis, Xiidra, and Cequa™, which are the only prescription pharmaceutical products that are approved in the United States for use in patients with dry eye disease. Generic versions of Restasis are expected to become available in the U.S. in 2019. Restasis and Cequa are both topical cyclosporine formulations that are approved for increasing tear production in patients whose tear production is presumed to be suppressed due to ocular

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keratoconjunctivitis sicca. Xiidra is a topical anti-inflammatory therapy approved for treatment of the signs and symptoms of dry eye disease.

There are several product candidates in preclinical and clinical development in the United States for the treatment of dry eye disease. These product candidates are being developed by pharmaceutical companies, biotechnology companies, and specialty pharmaceutical and generic drug companies of various sizes, such as Oyster Point Pharma's OC-01 and OC-02, ReGenTree's RGN-259, Aldeyra Therapeutics' reproxalap ophthalmic solution, Aurinia Pharmaceuticals' voclosporin ophthalmic solution and Surface Pharmaceutical's SURF-100 and SURF-200.

Based on publicly available information, we have identified various other product candidates in clinical development for the chronic treatment of dry eye disease in the United States. If any of these product candidates is approved and such product candidate either effectively treats the signs and symptoms of dry eye disease or reduces the frequency of flares in dry eye patients, it could reduce the overall market opportunity for KPI-121 0.25%.

Competition in Retinal Disease

Several therapies have been developed to block the effects of VEGF by binding to and sequestering the protein. These include Regeneron Pharmaceuticals, Inc.'s Eylea, and Genentech, Inc.'s Lucentis and Avastin. Avastin is approved as an anti-cancer agent, but is widely used off-label in ophthalmic diseases. All of these therapies are administered by intravitreal injections and must be regularly dosed for optimal efficacy.

In addition to the anti-VEGF therapies, there also are marketed drug delivery systems, or DDS, that are used to treat retinal diseases, notably: Ozurdex[®], which releases dexamethasone, a corticosteroid, and is marketed by Allergan, and Iluvien[®], which releases fluocinolone acetonide, a corticosteroid, and is marketed by Alimera Sciences.

There are a number of preclinical research and clinical development programs being conducted by third parties to develop treatments for retinal diseases. We expect that product candidates currently in clinical development, or that could enter clinical development in the near future, may represent significant competition if approved. These product candidates may provide efficacy, safety, convenience and other benefits that are not provided by currently marketed therapies.

Sales and Marketing

In January 2019, we began commercializing INVELTYS in the United States with our own focused, specialty sales force of 57 TSMs, 7 RSLs and 3 NADs. We believe, our sales team is one of the most experienced in our specialty with our RSLs having an average of 9.1 years ophthalmic experience and 5.4 years sales leadership experience and our 57 TSMs having an average of 7.7 years ophthalmic experience and 12.7 years pharmaceutical sales experience.

If KPI-121 0.25% is approved for the temporary treatment of dry eye disease, we expect to further expand our sales force by up to an additional 100 personnel. We expect to explore commercialization of KPI-121 0.25% and potentially other product candidates in certain markets outside the United States, including the EU, utilizing a variety of collaboration, distribution and other marketing arrangements with one or more third parties.

Manufacturing

We utilize our substantial in-house expertise and know-how to develop and scale up our manufacturing processes before these processes are transferred to third-party contract manufacturers, and to understand and establish controls of critical process parameters. We also have personnel with deep product development experience who actively manage the third-party contract manufacturers producing KPI-121 and other products that we may develop in the future.

Our KPI-121 drug product, including commercial lots of INVELTYS, is currently manufactured at qualified contract manufacturing facilities in compliance with current good manufacturing practice, or cGMP, regulations. We expect that the same facilities we use to manufacture commercial lots of INVELTYS will be used to manufacture commercial lots of KPI-121 0.25%. Preparation of the concentrated milled suspension is performed by a third party

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using a manufacturing process developed by us. The milled suspension is sterilized by gamma radiation at a separate third-party facility. The sterilized milled suspension is then diluted to the final drug product concentrations and filled into multi-dose ophthalmic dropper bottles at a third-party manufacturer. Our third-party manufacturers are subject to FDA inspections from time to time.

We have supply agreements in place with these contract manufacturers to support KPI-121 commercial, clinical and registration manufacturing, release testing, registration stability, and labeling and packaging. We also have entered into long term commercial supply agreements with these contract manufacturers to supply KPI-121.

Catalent Commercial Supply Agreement. In June 2016, we entered into a Commercial Supply Agreement, or the Catalent Agreement, which we amended in February 2018, with Catalent Pharma Solutions, LLC, or Catalent, pursuant to which Catalent has agreed to manufacture and supply to us, and we have agreed to purchase from Catalent, a minimum amount of INVELTYS and KPI-121 0.25% for commercial use. The Catalent Agreement has an initial term of eight years from August 22, 2018, which is the date INVELTYS was approved for commercial sale in the United States, and which is subject to three-year automatic renewal periods, absent termination by either party in accordance with the terms of the commercial supply agreement. The Catalent Agreement provides for pricing for INVELTYS and KPI-121 0.25% structured on a tiered basis, with the price reduced as the volume of each product ordered increases. We also have annual minimum purchase requirements for each of INVELTYS and KPI-121 0.25%. We may also pay certain fees in connection with validation and stability test services and commercialization ramp-up following regulatory approval. We may cancel any purchase order under the Catalent Agreement, subject to our minimum purchase obligations. Each party has the right to terminate the Catalent Agreement for customary reasons such as material breach and bankruptcy. The Catalent Agreement contains provisions relating to compliance by Catalent with cGMP, indemnification, confidentiality, dispute resolution and other customary matters for an agreement of this kind.

Alliance Commercial Supply Agreement. In October 2017, we entered into an Amended and Restated Master Services Agreement, or the Alliance Agreement, with Alliance Contract Pharma, LLC, or Alliance, pursuant to which Alliance has agreed to provide to us, and we have agreed to purchase from Alliance, bulk KPI-121 concentrates. The Alliance Agreement provides for pricing for KPI-121 concentrates structured on a tiered basis, with the price reduced as the volume of product ordered increases. Under the Alliance Agreement, we will provide a forecast of orders for the quantities of bulk KPI-121 concentrates we believe we will require, and forecasted quantities will become binding at a certain point before the firm delivery date set forth in the forecast. Unless earlier terminated pursuant to its terms, the Alliance Agreement has an initial term of ten years, after which it continues until terminated. Each party has the right to terminate the Alliance Agreement for customary reasons such as material breach and bankruptcy. In addition, we have the right to terminate the Alliance Agreement at any time for any or no reason upon sufficient advance notice, in which case we would owe payment to Alliance for any firm orders and certain raw materials. The Alliance Agreement contains provisions relating to compliance by Alliance with cGMP, indemnification, confidentiality, dispute resolution and other customary matters for an agreement of this kind.

Chemo Iberica Manufacturing and Supply Agreement. In January 2017, we entered into a Manufacturing and Supply Agreement, or the Chemo Agreement, with Chemo Iberica SA, or Chemo, pursuant to which Chemo has agreed to manufacture and supply to us, and we have agreed to purchase from Chemo, bulk supply of loteprednol, with pricing structured on a per-kilogram basis. Under the Chemo Agreement, we will provide a forecast of orders for the quantities of loteprednol we believe we will require, and we commit to purchasing 75% of the forecasted quantities. We can alter portions of a forecast at any time, except that, without Chemo's consent, we cannot alter a portion of the forecast less than ninety days before the period to which such portion pertains. Unless earlier terminated pursuant to its terms, the Chemo Agreement has an initial term of seven years, after which it renews in two year increments unless either party gives notice of non-renewal at least one year in advance. Each party has the right to terminate the Chemo Agreement for customary reasons such as material breach and bankruptcy. The Chemo Agreement contains provisions relating to compliance by Chemo with cGMP, indemnification, confidentiality, dispute resolution and other customary matters for an agreement of this kind.

Intellectual Property

Our success depends significantly on our ability to obtain and maintain proprietary protection for our products, product candidates, technology and know-how, to operate without infringing the proprietary rights of others and to prevent others from infringing our proprietary rights. We seek to protect our proprietary position by, among other methods, filing U.S. and certain foreign patent applications related to our proprietary technology, inventions and improvements that are important to the development of our business, where patent protection is available. We also rely on trade secrets, know-how, continuing technological innovation and in-licensing opportunities to develop and maintain our proprietary position.

As of February 28, 2019, we owned 21 U.S. issued patents and 17 U.S. patent applications, as well as 23 foreign issued patents and 92 foreign patent applications (including Patent Cooperation Treaty, or PCT, applications). We exclusively licensed a total of 19 U.S. issued patents and 20 U.S. patent applications, as well as 27 foreign issued patents and 78 foreign patent applications including original filings, continuations and divisional applications. Our patent portfolio includes the following patents and patent applications that we own or exclusively license:

- six U.S. patents and six U.S. patent application, relating to our MPP technology, which we refer to as our AMPPLIFY technology and INVELTYS and KPI-121 0.25%, in-licensed from The Johns Hopkins University, or JHU, two related foreign patents jointly owned by us and JHU, six related foreign patent applications jointly owned by us and JHU, five related foreign patents owned by us and 23 related foreign patent applications owned by us, which, if granted with respect to the patent applications, and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, are expected to expire in 2033;
- one U.S. patent application relating to our AMPPLIFY technology, and two related foreign patents and six related foreign patent applications, which are owned by us, and which, if granted with respect to the patent applications, and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, are expected to expire in 2033;
- 19 U.S. patents and 13 U.S. patent applications, relating to rTKI compounds, including KPI-285, and their uses, and 11 related foreign patents, and 46 foreign related patent applications, including pending PCT applications, which are owned by us, and which, if granted with respect to the patent applications, and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, which are expected to expire beginning in 2034 through 2038;
- One U.S. patent and one U.S. patent application, relating to antibiotic compounds and their uses, and one related foreign patent and seven related foreign patent applications, which are owned by us, and which, if granted with respect to the patent applications, and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, are expected to expire in 2034;
- six U.S. patents and five U.S. patent applications, relating to methods for treating an eye disease or disorder by injecting or instilling a drug delivery system, and 11 related foreign patents, and 47 related foreign patent applications, which are exclusively sub-licensed from GrayBug Vision, Inc., and which, if granted with respect to the patent applications, and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, are expected to expire beginning in 2031 through 2036; and
- six U.S. patents and nine U.S. patent applications, related to our AMPPLIFY technology, and 16 related foreign patents and 31 related foreign patent applications, which are exclusively in-licensed from JHU, and which, if granted with respect to the patent applications, and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, are expected to expire beginning in 2025 through 2036.

The term of individual patents depends upon the legal term for patents in the countries in which they are granted. In most countries, including the United States, the patent term is generally 20 years from the earliest claimed filing date of a non-provisional patent application in the applicable country. In the United States, a patent's term may, in

certain cases, be lengthened by patent term adjustment, which compensates a patentee for administrative delays by the U.S. Patent and Trademark Office in examining and granting a patent, or may be shortened if a patent is terminally disclaimed over a commonly owned patent or a patent naming a common inventor and having an earlier expiration date. The Drug Price Competition and Patent Term Restoration Act of 1984, or the Hatch-Waxman Act, permits a patent term extension of up to five years beyond the expiration date of a U.S. patent as partial compensation for the length of time the drug is under regulatory review while the patent is in force. A patent term extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval, only one patent applicable to each regulatory review period may be extended and only those claims covering the approved drug, a method for using it or a method for manufacturing it may be extended. We cannot provide any assurance that any patent term extension with respect to any U.S. patent will be obtained and, if obtained, the duration of such extension.

Similar provisions are available in the European Union and certain other foreign jurisdictions to extend the term of a patent that covers an approved drug. In the future, if and when our product candidates receive approval by the FDA or foreign regulatory authorities, we expect to apply for patent term extensions on issued patents covering those products, if permitted under the applicable laws, regulations, and rules and depending upon the length of the clinical trials for each drug and other factors. The expiration dates referred to above are without regard to potential patent term extension or other market exclusivity that may be available to us. However, we cannot provide any assurances that any such patent term extension of any patent will be obtained and, if obtained, the duration of such extension.

Trade Secrets

In addition to patents, we may rely, in some circumstances, on trade secrets to protect our technology. However, trade secrets can be difficult to protect. We seek to protect our proprietary technology and processes, and obtain and maintain ownership of certain technologies, in part, by confidentiality and invention assignment agreements with our employees, consultants, scientific advisors and contractors. We also seek to preserve the integrity and confidentiality of our data and trade secrets by maintaining physical security of our premises and physical and electronic security of our information technology systems.

License Agreements

The Johns Hopkins University

In November 2009, we entered into an exclusive license agreement with JHU, which was amended in November 2012, May 2014, August 2014, and June 2018 and amended in part by the JHU settlement agreement described below. We refer to the amended license agreement with JHU as the JHU license agreement. Pursuant to the JHU license agreement, JHU granted us an exclusive, worldwide, sublicensable license under specified patent rights covering various aspects of MPP technology, to research, develop, make, use and sell products and provide services in any field. JHU also granted us a non-exclusive license to use specified know-how with limits on JHU's right to license the know-how to other commercial entities.

Financial Terms

In connection with the JHU license agreement, we paid JHU an upfront license fee in the low tens of thousands of dollars and issued to JHU a low single digit percentage of our common stock. We also reimbursed JHU for the prosecution and maintenance costs incurred by JHU for the licensed patent rights prior to our entering into the JHU license agreement, and we are responsible for all of the ongoing costs relating to the prosecution and maintenance of the JHU patent rights licensed to us. We paid JHU fees in the low tens of thousands of dollars upon entering into certain of the amendments to the JHU license agreement. As of December 31, 2018, we also have paid JHU an aggregate of approximately \$337,000 in minimum annual royalty fees and development milestones and are obligated to pay fees upon achievement of additional specified development milestones and achievement of specified commercial milestones under the license agreement.

In connection with the JHU license agreement and the JHU settlement agreement described below, we are obligated to make certain future payments to JHU. In the fourth quarter of 2018, we paid JHU a minimum annual royalty

fee of approximately \$38,000, and we are obligated to pay JHU annual minimum royalties that will not exceed approximately \$113,000 per year in the future. In addition, we must pay JHU a tiered royalty rate in the low single-digits on annual sales by us or our affiliates of products or services covered by a valid issued claim, or certain pending claims, of a licensed JHU patent right in the country of sale, from which we may, under specified circumstances, offset portions of amounts we must pay as royalties on other patent rights in order to commercialize a licensed product or licensed service up to a maximum reduction of a mid-double digit percentage. We must also pay a percentage, in the high single digits, of certain consideration we or our affiliates receive from sublicensing rights under the licensed JHU intellectual property, subject to specified offsets and deductions. We may offset against each minimum annual payment the royalties and sublicense income that we pay to JHU in the preceding twelve-month period. We also are obligated to pay to JHU certain milestone payments, which will not exceed approximately \$1.9 million in the aggregate, if certain development and commercial events are achieved. The JHU patent rights sublicensed to us by GrayBug under the JHU settlement agreement described below are considered in the same way as the JHU patent rights directly licensed to us by JHU for purposes of determining these payments.

Diligence Obligations

We are required to use commercially reasonable efforts to develop and introduce the licensed products and licensed services to the market, including developing licensed products suitable for different indications, consistent with sound and reasonable business practice and judgment, and, after introducing a licensed product or licensed service into the market, we must endeavor to keep licensed products and licensed services reasonably available to the public consistent with sound and reasonable business practice and judgment.

Term and Termination

The JHU license agreement will expire on a country-by-country basis upon the expiration of the last to expire licensed patent in such country or, if no licensed patent issues in such country, then in November 2029. Either we or JHU may terminate the JHU license agreement for the other party's breach that is not cured within specified time periods or if the other party is subject to certain bankruptcy protections. In addition, we may terminate the JHU license agreement, for any reason, upon 90 days' prior written notice to JHU.

Assignment and Exclusive License

In April of 2017 we assigned to JHU certain Kala-owned patent applications and our interest in certain patents and patent applications formerly co-owned by JHU and Kala, unifying ownership of the assigned patent rights in JHU's name. As part of the assignment of these patent rights to JHU, Kala was granted an exclusive, non-royalty bearing, sub-licensable license from JHU under all of the patent rights Kala assigned in this transaction, which will expire upon the expiration of the last to expire licensed patent under the new license. No fees were paid to JHU for this exclusive license.

GrayBug Vision, Inc. and The Johns Hopkins University

A dispute arose between us, JHU, and GrayBug Vision, Inc. (formerly known as GrayBug, LLC and GrayBug, Inc.), or GrayBug, over rights licensed to us and GrayBug under certain patent rights owned by JHU. In October 2014, we, GrayBug, and JHU resolved this matter by entering into a Settlement and License Agreement, which was amended in January 2015, which we refer to as the JHU settlement agreement.

Under the JHU settlement agreement, GrayBug granted us, under specified patent rights that are exclusively licensed to GrayBug by JHU in all fields, an exclusive, worldwide royalty-free sublicense in the field of use of a particle with specified characteristics for delivery of a biologically active material through mucus, mucin, or a mucosal barrier where such delivery does not involve administration via injection to the eye, which we refer to as the Kala sublicense field. In December 2017, GrayBug terminated its exclusive license from JHU as to one patent family among these patent rights. Pursuant to the JHU settlement agreement, these patent rights are now automatically directly licensed to us under the terms of the JHU license agreement, and we are now responsible for all future patent prosecution costs for these patent rights. In turn, pursuant to the JHU settlement agreement we granted GrayBug, under specified patent rights that

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are exclusively licensed to us by JHU in all fields, an exclusive, worldwide royalty-free sublicense in the field of use of a particle with specified characteristics for delivery of a biologically active material to the eye via injection, excluding any particle comprising or consisting of loteprednol etabonate, which we refer to as the GrayBug sublicense field. In addition, JHU granted us, under the terms of the JHU license agreement, an exclusive, sublicensable, worldwide license under certain additional specified patent rights relating to further aspects of MPP technology in the Kala sublicense field. JHU also granted to GrayBug a similar license under these same patent rights in the GrayBug sublicense field. In January 2017, GrayBug terminated its license under all but one patent family in these additional specified patent rights, and in July 2017, GrayBug terminated its license under the remaining patent family. As a result, for those patent rights terminated by GrayBug, we are now licensed in both the Kala sublicense field and the GrayBug sublicense field. JHU also granted us certain rights to obtain a non-exclusive license to certain additional patent rights and, if we obtain such a license, we would have the exclusive right to negotiate for a specified time period an exclusive license under such patent rights in the Kala sublicense field. Under the JHU settlement agreement, we agreed not to exercise our rights under the JHU patent rights licensed or sublicensed to us to use a particular active ingredient. Each party to the JHU settlement agreement may sublicense the rights granted to it pursuant to the JHU settlement agreement, subject to notice requirements and the requirement that any such sublicense must involve some aspect of collaboration, joint research, development, manufacture, partnership or the like. In any event, sublicenses beyond a specified number of tiers are not permitted without the original licensing party's written consent.

We, GrayBug and JHU each released the others, and certain persons affiliated with them, from any claims and losses known to the releasing party as of the effective date of the JHU settlement agreement in connection with the dispute that led to the JHU settlement agreement.

Financial Terms

The JHU settlement agreement also amended certain of our financial obligations under the JHU license agreement, which we have reflected in the description above. Neither we nor GrayBug owe the other any royalties, milestone payments or other payments with respect to the sublicenses and other rights granted to each other. In addition, JHU agreed that we are not responsible for paying to JHU any sublicense fees or other payments due under our JHU license agreement that may otherwise have arisen as a result of our granting GrayBug the sublicenses under the JHU settlement agreement.

For the specified patent rights directly licensed to us by JHU in the Kala sublicense field under the JHU settlement agreement, we reimbursed JHU for a portion of the patent prosecution and maintenance costs incurred prior to entering the JHU settlement agreement, and we are responsible for all of the ongoing prosecution and maintenance costs of any of these JHU patent rights for which there is no other direct licensee of JHU, such as the JHU patent rights licensed to us in both the Kala sublicense field and the GrayBug sublicense field.

Term and Termination

The JHU settlement agreement will expire upon the expiration of all the patent rights that are the subject of the JHU settlement agreement. We may terminate one or more of the licenses or sublicenses granted to us in the JHU settlement agreement on a country-by-country basis for convenience upon 30 days' prior written notice to GrayBug. We or GrayBug may terminate one or more the sublicenses granted to the other party under the JHU patent rights if the other party, or its employees, officers, directors, agents or representatives, takes certain steps to oppose, attempt to invalidate or prevent the issuance of any of the patent rights directly licensed to the terminating party by JHU.

Government Regulation and Product Approvals

Government authorities in the United States, at the federal, state and local level, and in other countries and jurisdictions, including the European Union, extensively regulate, among other things, the research, development, testing, manufacture, pricing, quality control, approval, packaging, storage, recordkeeping, labeling, advertising, promotion, distribution, marketing, post-approval monitoring and reporting, and import and export of biopharmaceutical products. The processes for obtaining marketing approvals in the United States and in foreign countries and jurisdictions,

along with compliance with applicable statutes and regulations and other regulatory authorities, require the expenditure of substantial time and financial resources.

Approval and Regulation of Drugs in the United States

In the United States, drug products are regulated under the FDCA and applicable implementing regulations and guidance. The failure of an applicant to comply with the applicable regulatory requirements at any time during the product development process, including non-clinical testing, clinical testing, the approval process or post-approval process, may result in delays to the conduct of a study, regulatory review and approval and/or administrative or judicial sanctions. These sanctions may include, but are not limited to, the FDA's refusal to allow an applicant to proceed with clinical trials, refusal to approve pending applications, license suspension or revocation, withdrawal of an approval, warning letters, adverse publicity, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines and civil or criminal investigations and penalties brought by the FDA or Department of Justice, or DOJ, or other government entities, including state agencies.

An applicant seeking approval to market and distribute a new drug in the United States generally must satisfactorily complete each of the following steps before the product candidate will be approved by the FDA:

- preclinical testing including laboratory tests, animal studies and formulation studies, which must be performed in accordance with the FDA's good laboratory practice, or GLP, regulations and standards;
- submission to the FDA of an IND for human clinical testing, 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, potency and purity of the product candidate for each proposed indication, in accordance with current good clinical practices, or GCP;
- preparation and submission to the FDA of a NDA for a drug product which includes not only the results of the clinical trials, but also, detailed information on the chemistry, manufacture and quality controls for the product candidate and proposed labelling for one or more proposed indication(s);
- review of the product candidate by an FDA advisory committee, where appropriate or if applicable;
- satisfactory completion of an FDA inspection of the manufacturing facility or facilities, including those of third parties, at which the product candidate or components thereof are manufactured to assess compliance with cGMP requirements and to assure that the facilities, methods and controls are adequate to preserve the product's identity, strength, quality and purity;
- satisfactory completion of any FDA audits of the non-clinical and clinical trial sites to assure compliance with GCP and the integrity of clinical data in support of the NDA;
- payment of user fees and securing FDA approval of the NDA to allow marketing of the new drug product; and
- compliance with any post-approval requirements, including the potential requirement to implement a Risk Evaluation and Mitigation Strategy, or REMS, and the potential requirement to conduct any post-approval studies required by the FDA.

Preclinical Studies

Before an applicant begins testing a product candidate with potential therapeutic value in humans, the product candidate enters the preclinical testing stage. Preclinical tests include laboratory evaluations of product chemistry, formulation and stability, as well as other studies to evaluate, among other things, the toxicity of the product candidate. The conduct of the preclinical tests and formulation of the compounds for testing must comply with federal regulations and requirements, including GLP regulations and standards. The results of the preclinical tests, together with manufacturing information and analytical data, are submitted to the FDA as part of an IND. Some long-term preclinical testing, such as animal tests of reproductive adverse events and carcinogenicity, and long-term toxicity studies, may continue after the IND is submitted.

The IND and IRB Processes

An IND is an exemption from the FDCA that allows an unapproved product candidate to be shipped in interstate commerce for use in an investigational clinical trial and a request for FDA authorization to administer such investigational product to humans. Such authorization must be secured prior to interstate shipment and administration of any product candidate that is not the subject of an approved NDA. In support of a request for an IND, applicants must submit a protocol for each clinical trial and any subsequent protocol amendments must be submitted to the FDA as part of the IND. In addition, the results of the preclinical tests, together with manufacturing information, analytical data, any available clinical data or literature and plans for clinical trials, among other things, must be submitted to the FDA as part of an IND. The FDA requires a 30-day waiting period after the filing of each IND before clinical trials may begin. This waiting period is designed to allow the FDA to review the IND to determine whether human research subjects will be exposed to unreasonable health risks. At any time during this 30-day period, or thereafter, the FDA may raise concerns or questions about the conduct of the trials as outlined in the IND and impose a clinical hold or partial clinical hold. In this case, the IND sponsor and the FDA must resolve any outstanding concerns before clinical trials can begin.

Following commencement of a clinical trial under an IND, the FDA may also place a clinical hold or partial clinical hold on that trial. A clinical hold is an order issued by the FDA to the sponsor to delay a proposed clinical investigation or to suspend an ongoing investigation. A partial clinical hold is a delay or suspension of only part of the clinical work requested under the IND. For example, a specific protocol or part of a protocol is not allowed to proceed, while other protocols may do so. No more than 30 days after imposition of a clinical hold or partial clinical hold, the FDA will provide the sponsor a written explanation of the basis for the hold. Following issuance of a clinical hold or partial clinical hold, an investigation may only resume after the FDA has notified the sponsor that the investigation may proceed. The FDA will base that determination on information provided by the sponsor correcting the deficiencies previously cited or otherwise satisfying the FDA that the investigation can proceed.

A sponsor may choose, but is not required, to conduct a foreign clinical study under an IND. When a foreign clinical study is conducted under an IND, all FDA IND requirements must be met unless waived. When a foreign clinical study is not conducted under an IND, the sponsor must ensure that the study complies with certain regulatory requirements of the FDA in order to use the study as support for an IND or application for marketing approval. Specifically, on April 28, 2008, the FDA amended its regulations governing the acceptance of foreign clinical studies not conducted under an investigational new drug application as support for an IND or a new drug application. The final rule provides that such studies must be conducted in accordance with good clinical practice, or GCP, including review and approval by an independent ethics committee, or IEC, and informed consent from subjects. The GCP requirements in the final rule encompass both ethical and data integrity standards for clinical studies. The FDA's regulations are intended to help ensure the protection of human subjects enrolled in non-IND foreign clinical studies, as well as the quality and integrity of the resulting data. They further help ensure that non-IND foreign studies are conducted in a manner comparable to that required for IND studies.

In addition to the foregoing IND requirements, an IRB representing each institution participating in the clinical trial must review and approve the plan for any clinical trial before it commences at that institution, and the IRB must conduct continuing review and reapprove the study at least annually. The IRB must review and approve, among other things, the study protocol and informed consent information to be provided to study subjects. An IRB must operate in compliance with FDA regulations. An IRB can suspend or terminate approval of a clinical trial at its institution, or an

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institution it represents, if the clinical trial is not being conducted in accordance with the IRB's requirements or if the product candidate has been associated with unexpected serious harm to patients.

Additionally, some trials are overseen by an independent group of qualified experts organized by the trial sponsor, known as a data safety monitoring board or committee, or DSMB. This group provides recommendations as to whether or not a trial may move forward at designated check points based on access that only the group maintains to available data from the study. Suspension or termination of development during any phase of clinical trials can occur if it is determined that the participants or patients are being exposed to an unacceptable health risk. Other reasons for suspension or termination may be made by us based on evolving business objectives and/or competitive climate.

Information about clinical trials must be submitted within specific timeframes to the National Institutes of Health, or NIH, for public dissemination on its ClinicalTrials.gov website.

Expanded Access to an Investigational Drug for Treatment Use

Expanded access, sometimes called "compassionate use," is the use of investigational new drug products outside of clinical trials to treat patients with serious or immediately life-threatening diseases or conditions when there are no comparable or satisfactory alternative treatment options. The rules and regulations related to expanded access are intended to improve access to investigational drugs for patients who may benefit from investigational therapies. FDA regulations allow access to investigational drugs under an IND by the company or the treating physician for treatment purposes on a case-by-case basis for: individual patients (single-patient IND applications for treatment in emergency settings and non-emergency settings); intermediate-size patient populations; and larger populations for use of the drug under a treatment protocol or Treatment IND Application.

When considering an IND application for expanded access to an investigational product with the purpose of treating a patient or a group of patients, the sponsor and treating physicians or investigators will determine suitability when all of the following criteria apply: patient(s) have a serious or immediately life-threatening disease or condition, and there is no comparable or satisfactory alternative therapy to diagnose, monitor, or treat the disease or condition; the potential patient benefit justifies the potential risks of the treatment and the potential risks are not unreasonable in the context or condition to be treated; and the expanded use of the investigational drug for the requested treatment will not interfere initiation, conduct, or completion of clinical investigations that could support marketing approval of the product or otherwise compromise the potential development of the product.

On December 13, 2016, the 21st Century Cures Act established (and the 2017 Food and Drug Administration Reauthorization Act later amended) a requirement that sponsors of one or more investigational drugs for the treatment of a serious disease(s) or condition(s) make publicly available their policy for evaluating and responding to requests for expanded access for individual patients. Although these requirements were rolled out over time, they have now come into full effect. This provision requires drug and biologic companies to make publicly available their policies for expanded access for individual patient access to products intended for serious diseases. Sponsors are required to make such policies publicly available upon the earlier of initiation of a Phase 2 or Phase 3 study; or 15 days after the drug or biologic receives designation as a breakthrough therapy, fast track product, or regenerative medicine advanced therapy.

In addition, on May 30, 2018, the Right to Try Act, was signed into law. The law, among other things, provides a federal framework for certain patients to access certain investigational new drug products that have completed a Phase I clinical trial and that are undergoing investigation for FDA approval. Under certain circumstances, eligible patients can seek treatment without enrolling in clinical trials and without obtaining FDA permission under the FDA expanded access program. There is no obligation for a drug manufacturer to make its drug products available to eligible patients as a result of the Right to Try Act, but the manufacturer must develop an internal policy and respond to patient requests according to that policy.

Human Clinical Trials in Support of an NDA

Clinical trials involve the administration of the investigational product candidate to human subjects under the supervision of a qualified investigator in accordance with GCP requirements which include, among other things, the

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requirement that all research subjects provide their informed consent in writing before their participation in any clinical trial. Clinical trials are conducted under written clinical trial protocols detailing, among other things, the objectives of the study, inclusion and exclusion criteria, the parameters to be used in monitoring safety and the effectiveness criteria to be evaluated.

Human clinical trials are typically conducted in three sequential phases, but the phases may overlap or be combined. Additional studies may also be required after approval.

Phase 1 clinical trials are initially conducted in a limited population to test the product candidate for safety, including adverse effects, dose tolerance, absorption, metabolism, distribution, excretion and pharmacodynamics in healthy humans or in patients. During Phase 1 clinical trials, information about the investigational drug product's pharmacokinetics and pharmacological effects may be obtained to permit the design of well-controlled and scientifically valid Phase 2 clinical trials.

Phase 2 clinical trials are generally conducted in a limited patient population to identify possible adverse effects and safety risks, evaluate the efficacy of the product candidate for specific targeted indications and determine dose tolerance and optimal dosage. Multiple Phase 2 clinical trials may be conducted by the sponsor to obtain information prior to beginning larger and more costly Phase 3 clinical trials. Phase 2 clinical trials are well controlled, closely monitored and conducted in a limited patient population.

Phase 3 clinical trials proceed if the Phase 2 clinical trials demonstrate that a dose range of the product candidate is potentially effective and has an acceptable safety profile. Phase 3 clinical trials are undertaken within an expanded patient population to further evaluate dosage, provide substantial evidence of clinical efficacy and further test for safety in an expanded and diverse patient population at multiple, geographically dispersed clinical trial sites. A well-controlled, statistically robust Phase 3 clinical trial may be designed to deliver the data that regulatory authorities will use to decide whether or not to approve, and, if approved, how to appropriately label a drug: such Phase 3 studies are referred to as "pivotal."

In some cases, the FDA may approve an NDA for a product candidate but require the sponsor to conduct additional clinical trials to further assess the product candidate's safety and effectiveness after approval. Such post-approval trials are typically referred to as Phase 4 clinical trials. These studies are used to gain additional experience from the treatment of a larger number of patients in the intended treatment group and to further document a clinical benefit in the case of drugs approved under accelerated approval regulations. Failure to exhibit due diligence with regard to conducting Phase 4 clinical trials could result in withdrawal of approval for products.

Progress reports detailing the status and a brief description of available results of the clinical trials must be submitted at least annually to the FDA and more frequently if serious adverse events occur. In addition, IND safety reports must be submitted to the FDA for any of the following: serious and unexpected suspected adverse reactions; findings from other studies or animal or *in vitro* testing that suggest a significant risk in humans exposed to the product; and any clinically important increase in the case of a serious suspected adverse reaction over that listed in the protocol or investigator brochure. Phase 1, Phase 2 and Phase 3 clinical trials may not be completed successfully within any specified period, or completed at all. Furthermore, the FDA or the sponsor may suspend or terminate a clinical trial at any time on various grounds, including a finding that the research subjects are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution, or an institution it represents, if the clinical trial is not being conducted in accordance with the IRB's requirements or if the product has been associated with unexpected serious harm to patients. The FDA will typically inspect one or more clinical sites to assure compliance with GCP and the integrity of the clinical data submitted.

Concurrent with clinical trials, companies often complete additional animal studies and must also develop additional information about the chemistry and physical characteristics of the drug as well as finalize a process for manufacturing the product in commercial quantities in accordance with cGMP requirements. The manufacturing process must be capable of consistently producing quality batches of the product candidate and, among other things, must develop methods for testing the identity, strength, quality, purity, and potency of the final drug. Additionally, appropriate

packaging must be selected and tested and stability studies must be conducted to demonstrate that the product candidate does not undergo unacceptable deterioration over its shelf life.

Review and Approval of an NDA

In order to obtain approval to market a drug product in the United States, a marketing application must be submitted to the FDA that provides sufficient data establishing the safety, purity and potency of the proposed drug product for its intended indication. The application includes all relevant data available from pertinent preclinical and clinical trials, including negative or ambiguous results as well as positive findings, together with detailed information relating to the product's chemistry, manufacturing, controls and proposed labeling, among other things. Data can come from company-sponsored clinical trials intended to test the safety and effectiveness of a use of a product, or from a number of alternative sources, including studies initiated by investigators. To support marketing approval, the data submitted must be sufficient in quality and quantity to establish the safety, purity and potency of the drug product to the satisfaction of the FDA.

The NDA is a vehicle through which applicants formally propose that the FDA approve a new product for marketing and sale in the United States for one or more indications. Every new drug product candidate must be the subject of an approved NDA before it may be commercialized in the United States. Under federal law, the submission of most NDAs is subject to an application user fee, which for federal fiscal year 2019 is \$2,588,478 for an application requiring clinical data. The sponsor of an approved NDA is also subject to an annual program fee, which for fiscal year 2019 is \$309,915. Certain exceptions and waivers are available for some of these fees, such as an exception from the application fee for products with orphan designation and a waiver for certain small businesses.

Following submission of an NDA, the FDA conducts a preliminary review of the application generally within 60 calendar days of its receipt and strives to inform the sponsor by the 74th day after the FDA's receipt of the submission whether the application is sufficiently complete to permit substantive review. The FDA may request additional information rather than accept the application for filing. In this event, the application must be resubmitted with the additional information. The resubmitted application is also subject to review before the FDA accepts it for filing. Once the submission is accepted for filing, the FDA begins an in-depth substantive 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 the FDA accepts the application 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 products that are not NMEs, the ten-month and six-month review periods run from the date that the FDA receives the application. The review process and the PDUFA goal date 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.

Before approving an application, the FDA typically will inspect the facility or facilities where the product is or will be manufactured. These pre-approval inspections may cover all facilities associated with an NDA submission, including component manufacturing, finished product manufacturing and control testing laboratories. The FDA will not approve an application unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications. Additionally, before approving an NDA, the FDA will typically inspect one or more clinical sites to assure compliance with GCP. Under the FDA Reauthorization Act of 2017, the FDA must implement a protocol to expedite review of responses to inspection reports pertaining to certain applications, including applications for products in shortage or those for which approval is dependent on remediation of conditions identified in the inspection report.

In addition, as a condition of approval, the FDA may require an applicant to develop a REMS. REMS use risk minimization strategies beyond the professional labeling to ensure that the benefits of the product outweigh the potential risks. To determine whether a REMS is needed, the FDA will consider the size of the population likely to use the product, seriousness of the disease, expected benefit of the product, expected duration of treatment, seriousness of known or potential adverse events and whether the product is a new molecular entity.

The FDA may refer an application for a novel product to an advisory committee or explain why such referral was not made. Typically, an advisory committee is a panel of independent experts, including clinicians and other scientific experts, that reviews, evaluates and provides a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions.

Fast Track, Breakthrough Therapy, Priority Review and Regenerative Advanced Therapy Designations

The FDA is authorized to designate certain products for expedited review if they are intended to address an unmet medical need in the treatment of a serious or life-threatening disease or condition. These programs are referred to as fast track designation, breakthrough therapy designation, priority review designation and regenerative advanced therapy designation.

Specifically, the FDA may designate a product for Fast Track review if it is intended, whether alone or in combination with one or more other products, for the treatment of a serious or life-threatening disease or condition, and it demonstrates the potential to address unmet medical needs for such a disease or condition. For Fast Track products, sponsors may have greater interactions with the FDA and the FDA may initiate review of sections of a Fast Track product's application before the application is complete. This rolling review may be available if the FDA determines, after preliminary evaluation of clinical data submitted by the sponsor, that a Fast Track product may be effective. The sponsor must also provide, and the FDA must approve, a schedule for the submission of the remaining information and the sponsor must pay applicable user fees. However, the FDA's time period goal for reviewing a Fast Track application does not begin until the last section of the application is submitted. In addition, the Fast Track designation may be withdrawn by the FDA if the FDA believes that the designation is no longer supported by data emerging in the clinical trial process.

Second, a product may be designated as a Breakthrough Therapy if it is intended, either alone or in combination with one or more other products, to treat a serious or life-threatening disease or condition and preliminary clinical evidence indicates that the product may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. The FDA may take certain actions with respect to Breakthrough Therapies, including holding meetings with the sponsor throughout the development process; providing timely advice to the product sponsor regarding development and approval; involving more senior staff in the review process; assigning a cross-disciplinary project lead for the review team; and taking other steps to design the clinical trials in an efficient manner.

Third, the FDA may designate a product for priority review if it is a product that treats a serious condition and, if approved, would provide a significant improvement in safety or effectiveness. The FDA determines, on a case-by-case basis, whether the proposed product represents a significant improvement when compared with other available therapies. Significant improvement may be illustrated by evidence of increased effectiveness in the treatment of a condition, elimination or substantial reduction of a treatment-limiting product reaction, documented enhancement of patient compliance that may lead to improvement in serious outcomes, and evidence of safety and effectiveness in a new subpopulation. A priority designation is intended to direct overall attention and resources to the evaluation of such applications, and to shorten the FDA's goal for taking action on a marketing application from ten months to six months.

With passage of the 21st Century Cures Act, or the Cures Act, in December 2016, Congress authorized the FDA to accelerate review and approval of products designated as regenerative advanced therapies. A product is eligible for this designation if it is a regenerative medicine therapy that is intended to treat, modify, reverse or cure a serious or life-threatening disease or condition and preliminary clinical evidence indicates that the product has the potential to address unmet medical needs for such disease or condition. The benefits of a regenerative advanced therapy designation include early interactions with FDA to expedite development and review, benefits available to breakthrough therapies, potential eligibility for priority review and accelerated approval based on surrogate or intermediate endpoints.

Accelerated Approval Pathway

The FDA may grant accelerated approval to a product for a serious or life-threatening condition that provides meaningful therapeutic advantage to patients over existing treatments based upon a determination that the product has an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit. The FDA may also grant accelerated approval for such a condition when the product has an effect on an intermediate clinical endpoint that can be measured earlier than an effect on irreversible morbidity or mortality, or IMM, and that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity or prevalence of the condition and the availability or lack of alternative treatments. Products granted accelerated approval must meet the same statutory standards for safety and effectiveness as those granted traditional approval.

For the purposes of accelerated approval, a surrogate endpoint is a marker, such as a laboratory measurement, radiographic image, physical sign or other measure that is thought to predict clinical benefit, but is not itself a measure of clinical benefit. Surrogate endpoints can often be measured more easily or more rapidly than clinical endpoints. An intermediate clinical endpoint is a measurement of a therapeutic effect that is considered reasonably likely to predict the clinical benefit of a drug, such as an effect on IMM. The FDA has limited experience with accelerated approvals based on intermediate clinical endpoints, but has indicated that such endpoints generally may support accelerated approval where the therapeutic effect measured by the endpoint is not itself a clinical benefit and basis for traditional approval, if there is a basis for concluding that the therapeutic effect is reasonably likely to predict the ultimate clinical benefit of a product.

The accelerated approval pathway is most often used in settings in which the course of a disease is long and an extended period of time is required to measure the intended clinical benefit of a product, even if the effect on the surrogate or intermediate clinical endpoint occurs rapidly. Thus, accelerated approval has been used extensively in the development and approval of products for treatment of a variety of cancers in which the goal of therapy is generally to improve survival or decrease morbidity and the duration of the typical disease course requires lengthy and sometimes large trials to demonstrate a clinical or survival benefit. Thus, the benefit of accelerated approval derives from the potential to receive approval based on surrogate endpoints sooner than possible for trials with clinical or survival endpoints, rather than deriving from any explicit shortening of the FDA approval timeline, as is the case with priority review.

The accelerated approval pathway is usually contingent on a sponsor's agreement to conduct, in a diligent manner, additional post-approval confirmatory studies to verify and describe the product's clinical benefit. As a result, a product candidate approved on this basis is subject to rigorous post-marketing compliance requirements, including the completion of Phase 4 or post-approval clinical trials to confirm the effect on the clinical endpoint. Failure to conduct required post-approval studies, or confirm a clinical benefit during post-marketing studies, would allow the FDA to initiate expedited proceedings to withdraw approval of the product. All promotional materials for product candidates approved under accelerated regulations are subject to prior review by the FDA.

The FDA's Decision on an NDA

On the basis of the FDA's evaluation of the application and accompanying information, including the results of the inspection of the manufacturing facilities, 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. A complete response letter generally outlines the deficiencies in the submission and may require substantial additional testing or information in order for the FDA to reconsider the application. If and when those deficiencies have been addressed to the FDA's satisfaction in a resubmission of the NDA, the FDA will issue an approval letter. The FDA has committed to reviewing such resubmissions in two or six months depending on the type of information included. Even with submission of this additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval.

If the FDA approves a new product, it may limit the approved indications for use of the product. The agency may also require testing and surveillance programs to monitor the product after commercialization, or impose other conditions, including distribution restrictions or other risk management mechanisms, including REMS, to help ensure

that the benefits of the product outweigh the potential risks. REMS can include medication guides, communication plans for health care professionals, and elements to assure safe use, or ETASU. ETASU can include, but are not limited to, special training or certification for prescribing or dispensing, dispensing only under certain circumstances, special monitoring and the use of patent registries. The FDA may prevent or limit further marketing of a product based on the results of post-market studies or surveillance programs. After approval, many types of changes to the approved product, such as adding new indications, manufacturing changes and additional labeling claims, are subject to further testing requirements and FDA review and approval.

Post-Approval Regulation

If regulatory approval for marketing of a product or new indication for an existing product is obtained, the sponsor will be required to comply with all regular post-approval regulatory requirements as well as any post-approval requirements that the FDA may have imposed as part of the approval process. The sponsor will be required to report, among other things, certain adverse reactions and manufacturing problems to the FDA, provide updated safety and efficacy information and comply with requirements concerning advertising and promotional labeling requirements. Manufacturers and certain of their subcontractors are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with ongoing regulatory requirements, including cGMP regulations, which impose certain procedural and documentation requirements upon manufacturers. Accordingly, the sponsor and its third-party manufacturers must continue to expend time, money and effort in the areas of production and quality control to maintain compliance with cGMP regulations and other regulatory requirements.

A product may also be subject to official lot release, meaning that the manufacturer is required to perform certain tests on each lot of the product before it is released for distribution. If the product is subject to official release, the manufacturer must submit samples of each lot, together with a release protocol showing a summary of the history of manufacture of the lot and the results of all of the manufacturer's tests performed on the lot, to the FDA. The FDA may in addition perform certain confirmatory tests on lots of some products before releasing the lots for distribution. Finally, the FDA will conduct laboratory research related to the safety, purity, potency and effectiveness of pharmaceutical products.

Once an approval is granted, the FDA may withdraw the approval if compliance with regulatory requirements is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in revisions to the approved labeling to add new safety information; imposition of post-market studies or clinical trials to assess safety risks; or imposition of distribution or other restrictions under a REMS program. Other potential consequences include, among other things:

- restrictions on the marketing or manufacturing of the product, complete withdrawal of the product from the market or product recalls;
- fines, warning letters or holds on post-approval clinical trials;
- refusal of the FDA to approve pending applications or supplements to approved applications, or suspension or revocation of product license approvals;
- product seizure or detention, or refusal to permit the import or export of products; or
- injunctions or the imposition of civil or criminal penalties.

The FDA strictly regulates the marketing, labeling, advertising and promotion of prescription drug products placed on the market. This regulation includes, among other things, standards and regulations for direct-to-consumer advertising, communications regarding unapproved uses, industry-sponsored scientific and educational activities, and promotional activities involving the Internet and social media. Promotional claims about a drug's safety or effectiveness are prohibited before the drug is approved. After approval, a drug product generally may not be promoted for uses that

are not approved by the FDA, as reflected in the product's prescribing information. In the United States, health care professionals are generally permitted to prescribe drugs for such uses not described in the drug's labeling, known as off-label uses, because the FDA does not regulate the practice of medicine. However, FDA regulations impose rigorous restrictions on manufacturers' communications, prohibiting the promotion of off-label uses. It may be permissible, under very specific, narrow conditions, for a manufacturer to engage in nonpromotional, non-misleading communication regarding off-label information, such as distributing scientific or medical journal information.

If a company is found to have promoted off-label uses, it may become subject to adverse public relations and administrative and judicial enforcement by the FDA, the Department of Justice, or the Office of the Inspector General of the Department of Health and Human Services, as well as state authorities. This could subject a company to a range of penalties that could have a significant commercial impact, including civil and criminal fines and agreements that materially restrict the manner in which a company promotes or distributes drug products. The federal government has levied large civil and criminal fines against companies for alleged improper promotion, and has also requested that companies enter into consent decrees or permanent injunctions under which specified promotional conduct is changed or curtailed.

In addition, the distribution of prescription pharmaceutical products is subject to the Prescription Drug Marketing Act, or PDMA, and its implementing regulations, as well as the Drug Supply Chain Security Act, or DSCA, which regulate the distribution and tracing of prescription drug samples at the federal level, and set minimum standards for the regulation of distributors by the states. The PDMA, its implementing regulations and state laws limit the distribution of prescription pharmaceutical product samples, and the DSCA imposes requirements to ensure accountability in distribution and to identify and remove counterfeit and other illegitimate products from the market.

Section 505(b)(2) NDAs

NDAs for most new drug products are based on two full clinical studies which must contain substantial evidence of the safety and efficacy of the proposed new product for the proposed use. These applications are submitted under Section 505(b)(1) of the FDCA. The FDA is, however, authorized to approve an alternative type of NDA under Section 505(b)(2) of the FDCA. This type of application allows the applicant to rely, in part, on the FDA's previous findings of safety and efficacy for a similar product, or published literature. Specifically, Section 505(b)(2) applies to NDAs for a drug for which the investigations made to show whether or not the drug is safe for use and effective in use and relied upon by the applicant for approval of the application "were not conducted by or for the applicant and for which the applicant has not obtained a right of reference or use from the person by or for whom the investigations were conducted."

Thus, Section 505(b)(2) authorizes the FDA to approve an NDA based on safety and effectiveness data that were not developed by the applicant. NDAs filed under Section 505(b)(2) may provide an alternate and potentially more expeditious pathway to FDA approval for new or improved formulations or new uses of previously approved products. If the 505(b)(2) applicant can establish that reliance on the FDA's previous approval is scientifically appropriate, the applicant may eliminate the need to conduct certain preclinical or clinical studies of the new product. The FDA may also require companies to perform additional studies or measurements to support the change from the approved product. The FDA may then approve the new drug candidate for all or some of the label indications for which the referenced product has been approved, as well as for any new indication sought by the Section 505(b)(2) applicant.

Abbreviated New Drug Applications for Generic Drugs

In 1984, with passage of the Hatch-Waxman Amendments to the FDCA, Congress established an abbreviated regulatory scheme authorizing the FDA to approve generic drugs that are shown to contain the same active ingredients as, and to be bioequivalent to, drugs previously approved by the FDA pursuant to NDAs. To obtain approval of a generic drug, an applicant must submit an abbreviated new drug application, or ANDA, to the agency. An ANDA is a comprehensive submission that contains, among other things, data and information pertaining to the active pharmaceutical ingredient, bioequivalence, drug product formulation, specifications and stability of the generic drug, as well as analytical methods, manufacturing process validation data and quality control procedures. ANDAs are "abbreviated" because they generally do not include preclinical and clinical data to demonstrate safety and effectiveness.

Instead, in support of such applications, a generic manufacturer may rely on the preclinical and clinical testing previously conducted for a drug product previously approved under an NDA, known as the reference-listed drug, or RLD.

Specifically, in order for an ANDA to be approved, the FDA must find that the generic version is identical to the RLD with respect to the active ingredients, the route of administration, the dosage form, the strength of the drug and the conditions of use of the drug. At the same time, the FDA must also determine that the generic drug is “bioequivalent” to the innovator drug. Under the statute, a generic drug is bioequivalent to a RLD if “the rate and extent of absorption of the drug do not show a significant difference from the rate and extent of absorption of the listed drug.” Upon approval of an ANDA, the FDA indicates whether the generic product is “therapeutically equivalent” to the RLD in its publication “Approved Drug Products with Therapeutic Equivalence Evaluations,” also referred to as the “Orange Book.” Physicians and pharmacists consider a therapeutic equivalent generic drug to be fully substitutable for the RLD. In addition, by operation of certain state laws and numerous health insurance programs, the FDA’s designation of therapeutic equivalence often results in substitution of the generic drug without the knowledge or consent of either the prescribing physician or patient.

Under the Hatch-Waxman Amendments, the FDA may not approve an ANDA until any applicable period of non-patent exclusivity for the RLD has expired. The FDCA provides a period of five years of non-patent data exclusivity for a new drug containing a new chemical entity. For the purposes of this provision, a NCE, is a drug that contains no active moiety that has previously been approved by the FDA in any other NDA. An active moiety is the molecule or ion responsible for the physiological or pharmacological action of the drug substance. In cases where such NCE exclusivity has been granted, an ANDA may not be filed with the FDA until the expiration of five years unless the submission is accompanied by a Paragraph IV certification, in which case the applicant may submit its application four years following the original product approval.

The FDCA also provides for a period of three years of exclusivity if the NDA includes reports of one or more new clinical investigations, other than bioavailability or bioequivalence studies, that were conducted by or for the applicant and are essential to the approval of the application. This three-year exclusivity period often protects changes to a previously approved drug product, such as a new dosage form, route of administration, combination or indication. Three-year exclusivity would be available for a drug product that contains a previously approved active moiety, provided the statutory requirement for a new clinical investigation is satisfied. Unlike five-year NCE exclusivity, an award of three-year exclusivity does not block the FDA from accepting ANDAs seeking approval for generic versions of the drug as of the date of approval of the original drug product. The FDA typically makes decisions about awards of data exclusivity shortly before a product is approved.

The FDA must establish a priority review track for certain generic drugs, requiring the FDA to review a drug application within eight (8) months for a drug that has three (3) or fewer approved drugs listed in the Orange Book and is no longer protected by any patent or regulatory exclusivities, or is on the FDA’s drug shortage list. The new legislation also authorizes FDA to expedite review of “competitor generic therapies” or drugs with inadequate generic competition, including holding meetings with or providing advice to the drug sponsor prior to submission of the application.

Hatch-Waxman Patent Certification and the 30-Month Stay

Upon approval of an NDA or a supplement thereto, NDA sponsors are required to list with the FDA each patent with claims that cover the applicant’s product or an approved method of using the product. Each of the patents listed by the NDA sponsor is published in the Orange Book. When an ANDA applicant files its application with the FDA, the applicant is required to certify to the FDA concerning any patents listed for the reference product in the Orange Book, except for patents covering methods of use for which the ANDA applicant is not seeking approval. To the extent that the Section 505(b)(2) applicant is relying on studies conducted for an already approved product, the applicant is required to certify to the FDA concerning any patents listed for the approved product in the Orange Book to the same extent that an ANDA applicant would.

Specifically, the applicant must certify with respect to each patent that:

- the required patent information has not been filed;
- the listed patent has expired;
- the listed patent has not expired, but will expire on a particular date and approval is sought after patent expiration; or
- the listed patent is invalid, unenforceable or will not be infringed by the new product.

A certification that the new product will not infringe the already approved product's listed patents or that such patents are invalid or unenforceable is called a Paragraph IV certification. If the applicant does not challenge the listed patents or indicates that it is not seeking approval of a patented method of use, the application will not be approved until all the listed patents claiming the referenced product have expired (other than method of use patents involving indications for which the applicant is not seeking approval).

If the ANDA applicant has provided a Paragraph IV certification to the FDA, the applicant must also send notice of the Paragraph IV certification to the NDA and patent holders once the ANDA has been accepted for filing by the FDA. The NDA and patent holders may then initiate a patent infringement lawsuit in response to the notice of the Paragraph IV certification. The filing of a patent infringement lawsuit within 45 days after the receipt of a Paragraph IV certification automatically prevents the FDA from approving the ANDA until the earlier of 30 months after the receipt of the Paragraph IV notice, expiration of the patent, or a decision in the infringement case that is favorable to the ANDA applicant.

To the extent that the Section 505(b)(2) applicant is relying on studies conducted for an already approved product, the applicant is required to certify to the FDA concerning any patents listed for the approved product in the Orange Book to the same extent that an ANDA applicant would. As a result, approval of a Section 505(b)(2) NDA can be stalled until all the listed patents claiming the referenced product have expired, until any non-patent exclusivity, such as exclusivity for obtaining approval of a new chemical entity, listed in the Orange Book for the referenced product has expired, and, in the case of a Paragraph IV certification and subsequent patent infringement suit, until the earlier of 30 months, settlement of the lawsuit or a decision in the infringement case that is favorable to the Section 505(b)(2) applicant.

Pediatric Studies and Exclusivity

Under the Pediatric Research Equity Act of 2003, an NDA or supplement thereto must contain data that are adequate to 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. Sponsors must also submit pediatric study plans prior to the assessment data. Those plans must contain an outline of the proposed pediatric study or studies the applicant plans to conduct, including study objectives and design, any deferral or waiver requests and other information required by regulation. The applicant, the FDA, and the FDA's internal review committee must then review the information submitted, consult with each other and agree upon a final plan. The FDA or the applicant may request an amendment to the plan at any time.

For drugs intended to treat a serious or life-threatening disease or condition, the FDA must, upon the request of an applicant, meet to discuss preparation of the initial pediatric study plan or to discuss deferral or waiver of pediatric assessments. In addition, FDA will meet early in the development process to discuss pediatric study plans with sponsors and FDA must meet with sponsors by no later than the end-of-phase 1 meeting for serious or life-threatening diseases and by no later than ninety (90) days after FDA's receipt of the study plan.

The FDA may, on its own initiative or at the request of the applicant, grant deferrals for submission of some or all pediatric data until after approval of the product for use in adults, or full or partial waivers from the pediatric data requirements. Additional requirements and procedures relating to deferral requests and requests for extension of

deferrals are contained in FDASIA. Unless otherwise required by regulation, the pediatric data requirements do not apply to products with orphan designation.

The FDA Reauthorization Act of 2017 established new requirements to govern certain molecularly targeted cancer indications. Any company that submits an NDA three years after the date of enactment of that statute must submit pediatric assessments with the NDA if the drug is intended for the treatment of an adult cancer and is directed at a molecular target that FDA determines to be substantially relevant to the growth or progression of a pediatric cancer. The investigation must be designed to yield clinically meaningful pediatric study data regarding the dosing, safety and preliminary efficacy to inform pediatric labeling for the product.

Pediatric exclusivity is another type of non-patent marketing exclusivity in the United States and, if granted, provides for the attachment of an additional six months of marketing protection to the term of any existing regulatory exclusivity, including the non-patent and orphan exclusivity. This six-month exclusivity may be granted if an NDA sponsor submits pediatric data that fairly respond to a written request from the FDA for such data. The data do not need to show the product to be effective in the pediatric population studied; rather, if the clinical trial is deemed to fairly respond to the FDA's request, the additional protection is granted. If reports of requested pediatric studies are submitted to and accepted by the FDA within the statutory time limits, whatever statutory or regulatory periods of exclusivity or patent protection cover the product are extended by six months. This is not a patent term extension, but it effectively extends the regulatory period during which the FDA cannot approve another application.

Orphan Drug Designation and Exclusivity

Under the Orphan Drug Act, the FDA may designate a drug product as an "orphan drug" if it is intended to treat a rare disease or condition, generally meaning that it affects fewer than 200,000 individuals in the United States, or more in cases in which there is no reasonable expectation that the cost of developing and making a product available in the United States for treatment of the disease or condition will be recovered from sales of the product. A company must seek orphan drug designation before submitting an NDA for the candidate product. If the request is granted, the FDA will disclose the identity of the therapeutic agent and its potential use. Orphan drug designation does not shorten the PDUFA goal dates for the regulatory review and approval process, although it does convey certain advantages such as tax benefits and exemption from the PDUFA application fee.

If a product with orphan designation receives the first FDA approval for the disease or condition for which it has such designation or for a select indication or use within the rare disease or condition for which it was designated, the product generally will receive orphan drug exclusivity. Orphan drug exclusivity means that the FDA may not approve another sponsor's marketing application for the same drug for the same condition for seven years, except in certain limited circumstances. Orphan exclusivity does not block the approval of a different product for the same rare disease or condition, nor does it block the approval of the same product for different conditions. If a drug designated as an orphan drug ultimately receives marketing approval for an indication broader than what was designated in its orphan drug application, it may not be entitled to exclusivity.

Orphan drug exclusivity will not bar approval of another product under certain circumstances, including if a subsequent product with the same drug for the same condition is shown to be clinically superior to the approved product on the basis of greater efficacy or safety, or providing a major contribution to patient care, or if the company with orphan drug exclusivity is not able to meet market demand. This is the case despite an earlier court opinion holding that the Orphan Drug Act unambiguously required the FDA to recognize orphan exclusivity regardless of a showing of clinical superiority.

Patent Term Restoration and Extension

A patent claiming a new drug product may be eligible for a limited patent term extension under the Hatch-Waxman Act, which permits a patent restoration of up to five years for patent term lost during product development and the FDA regulatory review. The restoration period granted on a patent covering a product is typically one-half the time between the effective date of a clinical investigation involving human beings is begun and the submission date of an application, plus the time between the submission date of an application and the ultimate approval date. Patent term

restoration cannot be used to extend the remaining term of a patent past a total of 14 years from the product's approval date. Only one patent applicable to an approved product is eligible for the extension, and the application for the extension must be submitted prior to the expiration of the patent in question. A patent that covers multiple products for which approval is sought can only be extended in connection with one of the approvals. The U.S. Patent and Trademark Office reviews and approves the application for any patent term extension or restoration in consultation with the FDA.

FDA approval and regulation of companion diagnostics

If safe and effective use of a therapeutic depends on an in vitro diagnostic, then the FDA generally will require approval or clearance of that diagnostic, known as a companion diagnostic, at the same time that the FDA approves the therapeutic product. In August 2014, the FDA issued final guidance clarifying the requirements that will apply to approval of therapeutic products and in vitro companion diagnostics. According to the guidance, for novel drugs, a companion diagnostic device and its corresponding therapeutic should be approved or cleared contemporaneously by the FDA for the use indicated in the therapeutic product's labeling.

If the FDA determines that a companion diagnostic device is essential to the safe and effective use of a novel therapeutic product or indication, the FDA generally will not approve the therapeutic product or new therapeutic product indication if the companion diagnostic device is not approved or cleared for that indication. Approval or clearance of the companion diagnostic device will ensure that the device has been adequately evaluated and has adequate performance characteristics in the intended population. The review of in vitro companion diagnostics in conjunction with the review of our therapeutic treatments for cancer will, therefore, likely involve coordination of review by the FDA's Center for Drug Evaluation and Research and the FDA's Center for Devices and Radiological Health Office of In Vitro Diagnostics Device Evaluation and Safety.

Under the FDCA, in vitro diagnostics, including companion diagnostics, are regulated as medical devices. In the United States, the FDCA and its implementing regulations, and other federal and state statutes and regulations govern, among other things, medical device design and development, preclinical and clinical testing, premarket clearance or approval, registration and listing, manufacturing, labeling, storage, advertising and promotion, sales and distribution, export and import, and post-market surveillance. Unless an exemption applies, diagnostic tests require marketing clearance or approval from the FDA prior to commercial distribution. The two primary types of FDA marketing authorization applicable to a medical device are premarket notification, also called 510(k) clearance, and premarket approval, or PMA approval.

The PMA process, including the gathering of clinical and preclinical data and the submission to and review by the FDA, can take several years or longer. It involves a rigorous premarket review during which the applicant must prepare and provide the FDA with reasonable assurance of the device's safety and effectiveness and information about the device and its components regarding, among other things, device design, manufacturing and labeling. PMA applications are subject to an application fee, which exceeds \$250,000 for most PMAs. In addition, PMAs for certain devices must generally include the results from extensive preclinical and adequate and well-controlled clinical trials to establish the safety and effectiveness of the device for each indication for which FDA approval is sought. In particular, for a diagnostic, a PMA application typically requires data regarding analytical and clinical validation studies. As part of the PMA review, the FDA will typically inspect the manufacturer's facilities for compliance with the Quality System Regulation, or QSR, which imposes elaborate testing, control, documentation and other quality assurance requirements.

PMA approval is not guaranteed, and the FDA may ultimately respond to a PMA submission with a not approvable determination based on deficiencies in the application and require additional clinical trial or other data that may be expensive and time-consuming to generate and that can substantially delay approval. If the FDA's evaluation of the PMA application is favorable, the FDA typically issues an approvable letter requiring the applicant's agreement to specific conditions, such as changes in labeling, or specific additional information, such as submission of final labeling, in order to secure final approval of the PMA. If the FDA's evaluation of the PMA or manufacturing facilities is not favorable, the FDA will deny approval of the PMA or issue a not approvable letter. A not approvable letter will outline the deficiencies in the application and, where practical, will identify what is necessary to make the PMA approvable. The FDA may also determine that additional clinical trials are necessary, in which case the PMA approval may be delayed for several months or years while the trials are conducted and then the data submitted in an amendment to the PMA. If

the FDA concludes that the applicable criteria have been met, the FDA will issue a PMA for the approved indications, which can be more limited than those originally sought by the applicant. The PMA can include post-approval conditions that the FDA believes necessary to ensure the safety and effectiveness of the device, including, among other things, restrictions on labeling, promotion, sale and distribution. Once granted, PMA approval may be withdrawn by the FDA if compliance with post-approval requirements, conditions of approval or other regulatory standards is not maintained or problems are identified following initial marketing.

After a device is placed on the market, it remains subject to significant regulatory requirements. Medical devices may be marketed only for the uses and indications for which they are cleared or approved. Device manufacturers must also establish registration and device listings with the FDA. A medical device manufacturer's manufacturing processes and those of its suppliers are required to comply with the applicable portions of the QSR, which cover the methods and documentation of the design, testing, production, processes, controls, quality assurance, labeling, packaging and shipping of medical devices. Domestic facility records and manufacturing processes are subject to periodic unscheduled inspections by the FDA. The FDA also may inspect foreign facilities that export products to the United States.

Health care Law and Regulation

Health care providers and third-party payors play a primary role in the recommendation and prescription of drug products that are granted marketing approval. Arrangements with providers, consultants, third-party payors and customers are subject to broadly applicable fraud and abuse, anti-kickback, false claims laws, patient privacy laws and regulations and other health care laws and regulations that may constrain business and/or financial arrangements. Restrictions under applicable federal and state health care laws and regulations, include the following:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons and entities from knowingly and willfully soliciting, offering, paying, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made, in whole or in part, under a federal health care program such as Medicare and Medicaid;
- the federal civil and criminal false claims laws, including the civil False Claims Act, and civil monetary penalties laws, which prohibit individuals or entities from, among other things, knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false, fictitious or fraudulent or knowingly making, using or causing to be made or used a false record or statement to avoid, decrease or conceal an obligation to pay money to the federal government.
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which created additional federal criminal laws that prohibit, among other things, knowingly and willfully executing, or attempting to execute, a scheme to defraud any health care benefit program or making false statements relating to health care matters;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, and their respective implementing regulations, including the Final Omnibus Rule published in January 2013, which impose obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information;
- the federal false statements statute, which prohibits knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false statement in connection with the delivery of or payment for health care benefits, items or services;
- the Foreign Corrupt Practices Act, or FCPA, which prohibits companies and their intermediaries from making, or offering or promising to make improper payments to non-U.S. officials for the purpose of obtaining or retaining business or otherwise seeking favorable treatment;

- the federal transparency requirements known as the federal Physician Payments Sunshine Act, under the Patient Protection and Affordable Care Act, as amended by the Health Care Education Reconciliation Act, or the Affordable Care Act, which requires certain manufacturers of drugs, devices, biologics and medical supplies to report annually to the Centers for Medicare & Medicaid Services, or CMS, within the United States Department of Health and Human Services, information related to payments and other transfers of value made by that entity 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 and regulations, such as state anti-kickback and false claims laws, which may apply to health care items or services that are reimbursed by non-government third-party payors, including private insurers.

Further, some state laws require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government in addition to requiring manufacturers to report information related to payments to physicians and other health care providers or marketing expenditures. Additionally, some state and local laws require the registration of pharmaceutical sales representatives in the jurisdiction. State and foreign laws also govern the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Pharmaceutical Insurance Coverage and Health Care Reform

In the United States and markets in other countries, patients who are prescribed treatments for their conditions and providers performing the prescribed services generally rely on third-party payors to reimburse all or part of the associated health care costs. Significant uncertainty exists as to the coverage and reimbursement status of products approved by the FDA and other government authorities. Thus, even if a product candidate is approved, sales of the product will depend, in part, on the extent to which third-party payors, including government health programs in the United States such as Medicare and Medicaid, commercial health insurers and managed care organizations, provide coverage and establish adequate reimbursement levels for, the product. The process for determining whether a payor will provide coverage for a product may be separate from the process for setting the price or reimbursement rate that the payor will pay for the product once coverage is approved. Third-party payors are increasingly challenging the prices charged, examining the medical necessity and reviewing the cost-effectiveness of medical products and services and imposing controls to manage costs. Third-party payors may limit coverage to specific products on an approved list, also known as a formulary, which might not include all of the approved products for a particular indication.

In order to secure coverage and reimbursement for any product that might be approved for sale, a company may need to conduct expensive pharmacoeconomic studies in order to demonstrate the medical necessity and cost-effectiveness of the product, in addition to the costs required to obtain FDA or other comparable marketing approvals. Nonetheless, product candidates may not be considered medically necessary or cost effective. A decision by a third-party payor not to cover a product could reduce physician utilization once the product is approved and have a material adverse effect on sales, results of operations and financial condition. Additionally, a payor's decision to provide coverage for a product does not imply that an adequate reimbursement rate will be approved. Further, one payor's determination to provide coverage for a product does not assure that other payors will also provide coverage and reimbursement for the product, and the level of coverage and reimbursement can differ significantly from payor to payor.

The containment of health care costs also has become a priority of federal, state and foreign governments and the prices of products have been a focus in this effort. 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 a company's revenue generated from the sale of any approved products. Coverage policies and third-party reimbursement rates may change at any time. Even if favorable coverage and reimbursement status is attained for one or more products for which a company or its collaborators receive marketing approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

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There have been a number of federal and state proposals during the last few years regarding the pricing of pharmaceutical and biopharmaceutical products, limiting coverage and reimbursement for drugs and biologics and other medical products, government control and other changes to the health care system in the United States.

In March 2010, the United States Congress enacted the Affordable Care Act, or ACA, which, among other things, includes changes to the coverage and payment for drug products under government health care programs. Among the provisions of the ACA of importance to our potential product candidates are:

- an annual, nondeductible fee on any entity that manufactures or imports specified branded prescription drugs and biologic agents, apportioned among these entities according to their market share in certain government healthcare programs;
- expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to certain individuals with income at or below 133% of the federal poverty level, thereby potentially increasing a manufacturer's Medicaid rebate liability;
- expanded manufacturers' rebate liability under the Medicaid Drug Rebate Program by increasing the minimum rebate for both branded and generic drugs and revising the definition of "average manufacturer price," or AMP, for calculating and reporting Medicaid drug rebates on outpatient prescription drug prices;
- 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;
- expanded the types of entities eligible for the 340B drug discount program;
- established the Medicare Part D coverage gap discount program by requiring manufacturers to provide a 50% (and 70% starting January 1, 2019) point-of-sale-discount off the negotiated price of applicable brand drugs to eligible beneficiaries during their coverage gap period as a condition for the manufacturers' outpatient drugs to be covered under Medicare Part D; and
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research.

Other legislative changes have been proposed and adopted in the United States since the 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 includes aggregate reductions of Medicare payments to providers up to 2% per fiscal year, which went into effect in April 2013 and, due to subsequent legislative amendments, will remain in effect through 2027 unless additional Congressional action is taken. In January 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, which, among other things, further reduced Medicare payments to several providers, including hospitals, imaging centers and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

Since enactment of the ACA, there have been numerous legal challenges and Congressional actions to repeal and replace provisions of the law. For example, with enactment of the Tax Cuts and Jobs Act of 2017, which was signed by the President on December 22, 2017, Congress repealed the "individual mandate." The repeal of this provision, which requires most Americans to carry a minimal level of health insurance, will become effective in 2019. According to the Congressional Budget Office, the repeal of the individual mandate will cause 13 million fewer Americans to be insured in 2027 and premiums in insurance markets may rise. Additionally, on January 22, 2018, President Trump signed a continuing resolution on appropriations for fiscal year 2018 that delayed the implementation of certain ACA-mandated fees, including the so-called "Cadillac" tax on certain high cost employer-sponsored insurance plans, the

annual fee imposed on certain health insurance providers based on market share, and the medical device excise tax on non-exempt medical devices. Further, the Bipartisan Budget Act of 2018, among other things, amends the ACA, effective January 1, 2019, to increase from 50 percent to 70 percent the point-of-sale discount that is owed by pharmaceutical manufacturers who participate in Medicare Part D and to close the coverage gap in most Medicare drug plans, commonly referred to as the “donut hole”. The Congress will likely consider other legislation to replace elements of the ACA during the next Congressional session.

The Trump Administration has also taken executive actions to undermine or delay implementation of the ACA. Since January 2017, President Trump has signed two Executive Orders designed to delay the implementation of certain provisions of the ACA or otherwise circumvent some of the requirements for health insurance mandated by the ACA. One Executive Order directs federal agencies with authorities and responsibilities under the ACA to waive, defer, grant exemptions from, or delay the implementation of any provision of the ACA that would impose a fiscal or regulatory burden on states, individuals, healthcare providers, health insurers, or manufacturers of pharmaceuticals or medical devices. The second Executive Order terminates the cost-sharing subsidies that reimburse insurers under the ACA. Several state Attorneys General filed suit to stop the administration from terminating the subsidies, but their request for a restraining order was denied by a federal judge in California on October 25, 2017. In addition, CMS has recently proposed regulations that would give states greater flexibility in setting benchmarks for insurers in the individual and small group marketplaces, which may have the effect of relaxing the essential health benefits required under the ACA for plans sold through such marketplaces. Further, on June 14, 2018, U.S. Court of Appeals for the Federal Circuit ruled that the federal government was not required to pay more than \$12 billion in ACA risk corridor payments to third-party payors who argued were owed to them. The effects of this gap in reimbursement on third-party payors, the viability of the ACA marketplace, providers, and potentially our business, are not yet known. Further, there have been several recent U.S. congressional inquiries and proposed federal and proposed and enacted state legislation designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, reduce the costs of drugs under Medicare and reform government program reimbursement methodologies for drug products. At the federal level, Congress and the Trump administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. For example, on May 11, 2018, the Administration issued a plan to lower drug prices. Under this blueprint for action, the Administration indicated that the Department of Health and Human Services will: take steps to end the gaming of regulatory and patent processes by drug makers to unfairly protect monopolies; advance biosimilars and generics to boost price competition; evaluate the inclusion of prices in drug makers’ ads to enhance price competition; speed access to and lower the cost of new drugs by clarifying policies for sharing information between insurers and drug makers; avoid excessive pricing by relying more on value-based pricing by expanding outcome-based payments in Medicare and Medicaid; work to give Part D plan sponsors more negotiation power with drug makers; examine which Medicare Part B drugs could be negotiated for a lower price by Part D plans, and improving the design of the Part B Competitive Acquisition Program; update Medicare’s drug-pricing dashboard to increase transparency; prohibit Part D contracts that include “gag rules” that prevent pharmacists from informing patients when they could pay less out-of-pocket by not using insurance; and require that Part D plan members be provided with an annual statement of plan payments, out-of-pocket spending, and drug price increases.

At the state level, individual states are increasingly aggressive in passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. In addition, regional health care authorities and individual hospitals are increasingly using bidding procedures to determine what pharmaceutical products and which suppliers will be included in their prescription drug and other health care programs. These measures could reduce the ultimate demand for our products, once approved, or put pressure on our product pricing. We expect that additional state and federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in reduced demand for our product candidates or additional pricing pressures.

Review and Approval of Medicinal Products in the European Union

In order to market any product outside of the United States, a company must also comply with numerous and varying regulatory requirements of other countries and jurisdictions regarding quality, safety and efficacy and governing, among other things, clinical trials, marketing authorization, commercial sales and distribution of products. Whether or not it obtains FDA approval for a product, an applicant will need to obtain the necessary approvals by the comparable non-U.S. regulatory authorities before it can commence clinical trials or marketing of the product in those countries or jurisdictions. Specifically, the process governing approval of medicinal products in the European Union (“EU”) generally follows the same lines as in the United States. It entails satisfactory completion of preclinical studies and adequate and well-controlled clinical trials to establish the safety and efficacy of the product for each proposed indication. It also requires the submission to the relevant competent authorities of a marketing authorization application, or MAA, and granting of a marketing authorization by these authorities before the product can be marketed and sold in the EU.

Clinical Trial Approval

The Clinical Trials Directive 2001/20/EC, the Directive 2005/28/EC on Good Clinical Practice, or GCP, and the related national implementing provisions of the individual EU Member States govern the system for the approval of clinical trials in the EU. Under this system, an applicant must obtain prior approval from the competent national authority of the EU Member States in which the clinical trial is to be conducted. Furthermore, the applicant may only start a clinical trial at a specific study site after the competent ethics committee has issued a favorable opinion. The clinical trial application must be accompanied by, among other documents, an investigational medicinal product dossier (the Common Technical Document) with supporting information prescribed by Directive 2001/20/EC, Directive 2005/28/EC, where relevant the implementing national provisions of the individual EU Member States and further detailed in applicable guidance documents.

In April 2014, the new Clinical Trials Regulation, (EU) No 536/2014 (Clinical Trials Regulation) was adopted. The Regulation was published on June 16, 2014 but is not expected to apply until 2019. The Clinical Trials Regulation will be directly applicable in all the EU Member States, repealing the current Clinical Trials Directive 2001/20/EC and replacing any national legislation that was put in place to implement the Directive. Conduct of all clinical trials performed in the EU will continue to be bound by currently applicable provisions until the new Clinical Trials Regulation becomes applicable. The extent to which on-going clinical trials will be governed by the Clinical Trials Regulation will depend on when the Clinical Trials Regulation becomes applicable and on the duration of the individual clinical trial. If a clinical trial continues for more than three years from the day on which the Clinical Trials Regulation becomes applicable the Clinical Trials Regulation will at that time begin to apply to the clinical trial.

The new Clinical Trials Regulation aims to simplify and streamline the approval of clinical trials in the EU. The main characteristics of the regulation include: a streamlined application procedure via a single entry point, the “EU Portal and Database”; a single set of documents to be prepared and submitted for the application as well as simplified reporting procedures for clinical trial sponsors; and a harmonized procedure for the assessment of applications for clinical trials, which is divided in two parts. Part I is assessed by the appointed reporting Member State, whose assessment report is submitted for review by the sponsor and all other competent authorities of all EU Member States in which an application for authorization of a clinical trial has been submitted (Concerned Member States). Part II is assessed separately by each Concerned Member State. Strict deadlines have been established for the assessment of clinical trial applications. The role of the relevant ethics committees in the assessment procedure will continue to be governed by the national law of the Concerned Member State. However, overall related timelines will be defined by the Clinical Trials Regulation.

PRIME Designation in the EU

In March 2016, the European Medicines Agency, or EMA, launched an initiative to facilitate development of product candidates in indications, often rare, for which few or no therapies currently exist. The PRiority MEDicines, or PRIME, scheme is intended to encourage drug development in areas of unmet medical need and provides accelerated assessment of products representing substantial innovation reviewed under the centralized procedure. Products from

small- and medium-sized enterprises, or SMEs, may qualify for earlier entry into the PRIME scheme than larger companies. Many benefits accrue to sponsors of product candidates with PRIME designation, including but not limited to, early and proactive regulatory dialogue with the EMA, frequent discussions on clinical trial designs and other development program elements, and accelerated marketing authorization application assessment once a dossier has been submitted. Importantly, a dedicated Agency contact and rapporteur from the Committee for Human Medicinal Products (CHMP) or Committee for Advanced Therapies (CAT) are appointed early in PRIME scheme facilitating increased understanding of the product at EMA's Committee level. A kick-off meeting initiates these relationships and includes a team of multidisciplinary experts at the EMA to provide guidance on the overall development and regulatory strategies.

Marketing Authorization

To obtain a marketing authorization for a product under EU regulatory systems, an applicant must submit an MAA either under a centralized procedure administered by the EMA, or one of the procedures administered by competent authorities in the EU Member States (decentralized procedure, national procedure or mutual recognition procedure). A marketing authorization may be granted only to an applicant established in the EU. Regulation (EC) No 1901/2006 provides that prior to obtaining a marketing authorization in the EU, applicants have to demonstrate compliance with all measures included in an EMA-approved Pediatric Investigation Plan, or PIP, covering all subsets of the pediatric population, unless the EMA has granted (1) a product-specific waiver, (2) a class waiver or (3) a deferral for one or more of the measures included in the PIP.

The centralized procedure provides for the grant of a single marketing authorization by the European Commission that is valid across the European Economic Area (i.e. the EU as well as Iceland, Liechtenstein and Norway). Pursuant to Regulation (EC) No 726/2004, the centralized procedure is compulsory for specific products, including for medicines produced by certain biotechnological processes, products designated as orphan medicinal products, ATMPs and products with a new active substance indicated for the treatment of certain diseases, including products for the treatment of cancer. For products with a new active substance indicated for the treatment of other diseases and products that are highly innovative or for which a centralized process is in the interest of patients, the centralized procedure may be optional. The centralized procedure may at the request of the applicant also be used in certain other cases. We anticipate that the centralized procedure will be mandatory for the product candidates we are developing.

Under the centralized procedure, the CHMP is also responsible for several post-authorization and maintenance activities, such as the assessment of modifications or extensions to an existing marketing authorization. Under the centralized procedure in the EU, the maximum timeframe for the evaluation of an MAA is 210 days, excluding clock stops, when additional information or written or oral explanation is to be provided by the applicant in response to questions of the CHMP. Accelerated evaluation might be granted by the CHMP in exceptional cases, when a medicinal product is of major interest from the point of view of public health and in particular from the viewpoint of therapeutic innovation. If the CHMP accepts such request, the time limit of 210 days will be reduced to 150 days but it is possible that the CHMP can revert to the standard time limit for the centralized procedure if it considers that it is no longer appropriate to conduct an accelerated assessment. At the end of this period, the CHMP provides a scientific opinion on whether or not a marketing authorization should be granted in relation to a medicinal product. Within 15 calendar days of receipt of a final opinion from the CHMP, the European Commission must prepare a draft decision concerning an application for marketing authorization. This draft decision must take the opinion and any relevant provisions of EU law into account. Before arriving at a final decision on an application for centralized authorization of a medicinal product the European Commission must consult the Standing Committee on Medicinal Products for Human Use. The Standing Committee is composed of representatives of the EU Member States and chaired by a non-voting European Commission representative. The European Parliament also has a related "droit de regard". The European Parliament's role is to ensure that the European Commission has not exceeded its powers in deciding to grant or refuse to grant a marketing authorization.

The European Commission may grant a so-called "marketing authorization under exceptional circumstances". Such authorization is intended for products for which the applicant can demonstrate that it is unable to provide comprehensive data on the efficacy and safety under normal conditions of use, because the indications for which the

product in question is intended are encountered so rarely that the applicant cannot reasonably be expected to provide comprehensive evidence, or in the present state of scientific knowledge, comprehensive information cannot be provided, or it would be contrary to generally accepted principles of medical ethics to collect such information. Consequently, marketing authorization under exceptional circumstances may be granted subject to certain specific obligations, which may include the following:

- the applicant must complete an identified program of studies within a time period specified by the competent authority, the results of which form the basis of a reassessment of the benefit/risk profile;
- the medicinal product in question may be supplied on medical prescription only and may in certain cases be administered only under strict medical supervision, possibly in a hospital and in the case of a radiopharmaceutical, by an authorized person; and
- the package leaflet and any medical information must draw the attention of the medical practitioner to the fact that the particulars available concerning the medicinal product in question are as yet inadequate in certain specified respects.

A marketing authorization under exceptional circumstances is subject to annual review to reassess the risk-benefit balance in an annual reassessment procedure. Continuation of the authorization is linked to the annual reassessment and a negative assessment could potentially result in the marketing authorization being suspended or revoked. The renewal of a marketing authorization of a medicinal product under exceptional circumstances, however, follows the same rules as a “normal” marketing authorization. Thus, a marketing authorization under exceptional circumstances is granted for an initial five years, after which the authorization will become valid indefinitely, unless the EMA decides that safety grounds merit one additional five-year renewal.

The European Commission may also grant a so-called “conditional marketing authorization” prior to obtaining the comprehensive clinical data required for an application for a full marketing authorization. Such conditional marketing authorizations may be granted for product candidates (including medicines designated as orphan medicinal products), if (i) the risk-benefit balance of the product candidate is positive, (ii) it is likely that the applicant will be in a position to provide the required comprehensive clinical trial data, (iii) the product fulfills an unmet medical need and (iv) the benefit to public health of the immediate availability on the market of the medicinal product concerned outweighs the risk inherent in the fact that additional data are still required. A conditional marketing authorization may contain specific obligations to be fulfilled by the marketing authorization holder, including obligations with respect to the completion of ongoing or new studies, and with respect to the collection of pharmacovigilance data. Conditional marketing authorizations are valid for one year, and may be renewed annually, if the risk-benefit balance remains positive, and after an assessment of the need for additional or modified conditions and/or specific obligations. The timelines for the centralized procedure described above also apply with respect to the review by the CHMP of applications for a conditional marketing authorization.

The EU medicines rules expressly permit the EU Member States to adopt national legislation prohibiting or restricting the sale, supply or use of any medicinal product containing, consisting of or derived from a specific type of human or animal cell, such as embryonic stem cells. While the products we have in development do not make use of embryonic stem cells, it is possible that the national laws in certain EU Member States may prohibit or restrict us from commercializing our products, even if they have been granted an EU marketing authorization.

Unlike the centralized authorization procedure, the decentralized marketing authorization procedure requires a separate application to, and leads to separate approval by, the competent authorities of each EU Member State in which the product is to be marketed. This application is identical to the application that would be submitted to the EMA for authorization through the centralized procedure. The reference EU Member State prepares a draft assessment and drafts of the related materials within 120 days after receipt of a valid application. The resulting assessment report is submitted to the concerned EU Member States who, within 90 days of receipt, must decide whether to approve the assessment report and related materials. If a concerned EU Member State cannot approve the assessment report and related materials due to concerns relating to a potential serious risk to public health, disputed elements may be referred to the European Commission, whose decision is binding on all EU Member States.

The mutual recognition procedure similarly is based on the acceptance by the competent authorities of the EU Member States of the marketing authorization of a medicinal product by the competent authorities of other EU Member States. The holder of a national marketing authorization may submit an application to the competent authority of an EU Member State requesting that this authority recognize the marketing authorization delivered by the competent authority of another EU Member State.

Regulatory Data Protection in the EU

In the EU, innovative medicinal products approved on the basis of a complete independent data package qualify for eight years of data exclusivity upon marketing authorization and an additional two years of market exclusivity pursuant to Directive 2001/83/EC. Regulation (EC) No 726/2004 repeats this entitlement for medicinal products authorized in accordance the centralized authorization procedure. Data exclusivity prevents applicants for authorization of generics of these innovative products from referencing the innovator's data to assess a generic (abridged) application for a period of eight years. During an additional two-year period of market exclusivity, a generic marketing authorization application can be submitted and authorized, and the innovator's data may be referenced, but no generic medicinal product can be placed on the EU market until the expiration of the market exclusivity. The overall ten-year period will be extended to a maximum of 11 years if, during the first eight years of those ten years, the marketing authorization holder obtains an authorization for one or more new therapeutic indications which, during the scientific evaluation prior to their authorization, are held to bring a significant clinical benefit in comparison with existing therapies. Even if a compound is considered to be a new chemical entity so that the innovator gains the prescribed period of data exclusivity, another company nevertheless could also market another version of the product if such company obtained marketing authorization based on an MAA with a complete independent data package of pharmaceutical tests, preclinical tests and clinical trials.

Periods of Authorization and Renewals

A marketing authorization has an initial validity for five years in principle. The marketing authorization may be renewed after five years on the basis of a re-evaluation of the risk-benefit balance by the EMA or by the competent authority of the EU Member State. To this end, the marketing authorization holder must provide the EMA or the competent authority with a consolidated version of the file in respect of quality, safety and efficacy, including all variations introduced since the marketing authorization was granted, at least six months before the marketing authorization ceases to be valid. The European Commission or the competent authorities of the EU Member States may decide, on justified grounds relating to pharmacovigilance, to proceed with one further five-year period of marketing authorization. Once subsequently definitively renewed, the marketing authorization shall be valid for an unlimited period. Any authorization which is not followed by the actual placing of the medicinal product on the EU n market (in case of centralized procedure) or on the market of the authorizing EU Member State within three years after authorization ceases to be valid (the so-called sunset clause).

Pediatric Studies and Exclusivity

Prior to obtaining a marketing authorization in the European Union, applicants must demonstrate compliance with all measures included in an EMA-approved PIP covering all subsets of the pediatric population, unless the EMA has granted a product-specific waiver, a class waiver, or a deferral for one or more of the measures included in the PIP. The respective requirements for all marketing authorization procedures are laid down in Regulation (EC) No 1901/2006, the so-called Pediatric Regulation. This requirement also applies when a company wants to add a new indication, pharmaceutical form or route of administration for a medicine that is already authorized. The Pediatric Committee of the EMA, or PDCO, may grant deferrals for some medicines, allowing a company to delay development of the medicine for children until there is enough information to demonstrate its effectiveness and safety in adults. The PDCO may also grant waivers when development of a medicine for children is not needed or is not appropriate, such as for diseases that only affect the elderly population. Before an MAA can be filed, or an existing marketing authorization can be amended, the EMA determines that companies actually comply with the agreed studies and measures listed in each relevant PIP. If an applicant obtains a marketing authorization in all EU Member States, or a marketing authorization granted in the Centralized Procedure by the European Commission, and the study results for the pediatric population are included in

the product information, even when negative, the medicine is then eligible for an additional six month period of qualifying patent protection through extension of the term of the Supplementary Protection Certificate, or SPC.

Orphan Drug Designation and Exclusivity

Regulation (EC) No. 141/2000, as implemented by Regulation (EC) No. 847/2000 provides that a drug can be designated as an orphan drug by the European Commission if its sponsor can establish: that the product is intended for the diagnosis, prevention or treatment of (1) a life-threatening or chronically debilitating condition affecting not more than five in ten thousand persons in the EU when the application is made, or (2) a life-threatening, seriously debilitating or serious and chronic condition in the EU and that without incentives it is unlikely that the marketing of the drug in the EU would generate sufficient return to justify the necessary investment. For either of these conditions, the applicant must demonstrate that there exists no satisfactory method of diagnosis, prevention or treatment of the condition in question that has been authorized in the EU or, if such method exists, the drug will be of significant benefit to those affected by that condition.

Once authorized, orphan medicinal products are entitled to 10 years of market exclusivity in all EU Member States and in addition a range of other benefits during the development and regulatory review process including scientific assistance for study protocols, authorization through the centralized marketing authorization procedure covering all member countries and a reduction or elimination of registration and marketing authorization fees. However, marketing authorization may be granted to a similar medicinal product with the same orphan indication during the 10-year period with the consent of the marketing authorization holder for the original orphan medicinal product or if the manufacturer of the original orphan medicinal product is unable to supply sufficient quantities. Marketing authorization may also be granted to a similar medicinal product with the same orphan indication if this product is safer, more effective or otherwise clinically superior to the original orphan medicinal product. The period of market exclusivity may, in addition, be reduced to six years if it can be demonstrated on the basis of available evidence that the original orphan medicinal product is sufficiently profitable not to justify maintenance of market exclusivity

Regulatory Requirements after a Marketing Authorization has been Obtained

In case an authorization for a medicinal product in the EU is obtained, the holder of the marketing authorization is required to comply with a range of requirements applicable to the manufacturing, marketing, promotion and sale of medicinal products. These include:

- Compliance with the EU's stringent pharmacovigilance or safety reporting rules must be ensured. These rules can impose post-authorization studies and additional monitoring obligations.
- The manufacturing of authorized medicinal products, for which a separate manufacturer's license is mandatory, must also be conducted in strict compliance with the applicable EU laws, regulations and guidance, including Directive 2001/83/EC, Directive 2003/94/EC, Regulation (EC) No 726/2004 and the European Commission Guidelines for Good Manufacturing Practice. These requirements include compliance with EU cGMP standards when manufacturing medicinal products and active pharmaceutical ingredients, including the manufacture of active pharmaceutical ingredients outside of the EU with the intention to import the active pharmaceutical ingredients into the EU.
- The marketing and promotion of authorized drugs, including industry-sponsored continuing medical education and advertising directed toward the prescribers of drugs and/or the general public, are strictly regulated in the EU notably under Directive 2001/83EC, as amended, and EU Member State laws. Direct-to-consumer advertising of prescription medicines is prohibited across the EU.

Brexit and the Regulatory Framework in the United Kingdom

On June 23, 2016, the electorate in the United Kingdom voted in favor of leaving the EU (which is commonly referred to as "Brexit"). Thereafter, on March 29, 2017, the country formally notified the EU of its intention to withdraw pursuant to Article 50 of the Lisbon Treaty. The withdrawal of the United Kingdom from the EU will take effect either

on the effective date of the withdrawal agreement or, in the absence of agreement, two years after the United Kingdom provides a notice of withdrawal pursuant to the EU Treaty. Discussions between the United Kingdom and the EU focused on finalizing withdrawal issues and transition agreements are ongoing. However, limited progress to date in these negotiations and ongoing uncertainty within the UK Government and Parliament sustains the possibility of the United Kingdom leaving the EU on March 29, 2019 without a withdrawal agreement and associated transition period in place, which is likely to cause significant market and economic disruption.

Since the regulatory framework for pharmaceutical products in the United Kingdom covering quality, safety and efficacy of pharmaceutical products, clinical trials, marketing authorization, commercial sales and distribution of pharmaceutical products is derived from EU directives and regulations, Brexit could materially impact the future regulatory regime which applies to products and the approval of product candidates in the United Kingdom. It remains to be seen how, if at all, Brexit will impact regulatory requirements for product candidates and products in the United Kingdom.

Pricing Decisions for Approved Products

In the EU, pricing and reimbursement schemes vary widely from country to country. Some countries provide that products may be marketed only after a reimbursement price has been agreed. Some countries may require the completion of additional studies that compare the cost-effectiveness of a particular product candidate to currently available therapies or so-called health technology assessments, in order to obtain reimbursement or pricing approval. For example, the EU provides options for its Member States to restrict the range of products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. Member States may approve a specific price for a product or it may instead adopt a system of direct or indirect controls on the profitability of the company placing the product on the market. Other Member States allow companies to fix their own prices for products, but monitor and control prescription volumes and issue guidance to physicians to limit prescriptions. Recently, many countries in the EU have increased the amount of discounts required on pharmaceuticals and these efforts could continue as countries attempt to manage health care expenditures, especially in light of the severe fiscal and debt crises experienced by many countries in the EU. The downward pressure on health care costs in general, particularly prescription products, has become intense. As a result, increasingly high barriers are being erected to the entry of new products. Political, economic and regulatory developments may further complicate pricing negotiations, and pricing negotiations may continue after reimbursement has been obtained. Reference pricing used by various Member States, and parallel trade, i.e., arbitrage between low-priced and high-priced Member States, can further reduce prices. 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 products, if approved in those countries.

General Data Protection Regulation

The collection, use, disclosure, transfer, or other processing of personal data regarding individuals in the EU, including personal health data, is subject to the EU General Data Protection Regulation, or GDPR, which became effective on May 25, 2018. The GDPR is wide-ranging in scope and imposes numerous requirements on companies that process personal data, including requirements relating to processing health and other sensitive data, obtaining consent of the individuals to whom the personal data relates, providing information to individuals regarding data processing activities, implementing safeguards to protect the security and confidentiality of personal data, providing notification of data breaches, and taking certain measures when engaging third-party processors. The GDPR also imposes strict rules on the transfer of personal data to countries outside the EU, including the U.S., and permits data protection authorities to impose large penalties for violations of the GDPR, including potential fines of up to €20 million or 4% of annual global revenues, whichever is greater. The GDPR also confers a private right of action on data subjects and consumer associations to lodge complaints with supervisory authorities, seek judicial remedies, and obtain compensation for damages resulting from violations of the GDPR. Compliance with the GDPR will be a rigorous and time-intensive process that may increase the cost of doing business or require companies to change their business practices to ensure full compliance.

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Employees

As of December 31, 2018, we had a total of 130 full-time employees. None of our employees are represented by labor unions or covered by collective bargaining agreements. We consider our relationship with our employees to be good.

Our Corporate Information

We were incorporated under the laws of the State of Delaware in July 2009. Our office is located at 490 Arsenal Way, Suite 120, Watertown, MA 02427, and our telephone number is (781) 996-5252. Our website address is www.kalarx.com.

Available Information

Through our website, we make available free of charge our 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 Sections 13(a) and 15(d) of the Securities Exchange Act of 1934, or the Exchange Act. We make these reports available through our website as soon as reasonably practicable after we electronically file such reports with, or furnish such reports to, the Securities and Exchange Commission, or the SEC. You can review our electronically filed reports and other information that we file with the SEC on the SEC's web site at <http://www.sec.gov>. We also make available, free of charge on our website, the reports filed with the SEC by our executive officers, directors and 10% stockholders pursuant to Section 16 under the Exchange Act as soon as reasonably practicable after copies of those filings are provided to us by those persons. In addition, we regularly use our website to post information regarding our business, product development programs and governance, and we encourage investors to use our website, particularly the information in the section entitled "Investors & Media," as a source of information about us.

The information on our website is not incorporated by reference into this Annual Report on Form 10-K and should not be considered to be a part of this Annual Report on Form 10-K. Our website address is included in this Annual Report on Form 10-K as an inactive technical reference only.

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 together with all of the other information contained in this Annual Report on Form 10-K, including our financial statements and the related notes appearing at the end of this Annual Report on Form 10-K, before deciding to invest in our common stock. If any of the following risks actually occur, our business, prospects, operating results and financial condition could suffer materially. In such event, the trading price of our common stock could decline and you might lose all or part of your investment.

Risks Related to Our Financial Position and Need For Additional Capital

We have incurred significant losses from operations and negative cash flows from operations since our inception. We expect to incur losses over the next several years and may never achieve or maintain profitability.

Since inception, we have incurred significant losses from operations and negative cash flows from operations. Our net losses were \$66.7 million for the year ended December 31, 2018 and \$42.2 million for the year ended December 31, 2017. As of December 31, 2018, we had an accumulated deficit of \$201.1 million. As we only recently launched our first product, INVELTYS™ (loteprednol etabonate ophthalmic suspension) 1% , in January 2019, we have had limited revenues to date from product sales and have financed our operations primarily through our initial public offering, or IPO, private placements of preferred stock, convertible debt financings, borrowings under credit facilities, warrants and public common stock offerings and to a lesser extent, payments received in connection with various feasibility studies. We have devoted substantially all of our financial resources and efforts to research and development, including preclinical studies and clinical trials and engaging in activities to commercially launch our first FDA approved product, INVELTYS for the treatment of post-operative inflammation and pain following ocular surgery. Although we expect to continue to generate revenue from sales of INVELTYS, there can be no assurance that we will generate any such revenue or as to the timing of any such revenue, and we expect to continue to incur significant expenses and operating losses over the next several years. Our net losses may fluctuate significantly from quarter-to-quarter and year-to-year.

We anticipate that our expenses will increase substantially as compared to prior periods as we continue to commercialize INVELTYS in the United States and engage in activities to prepare for commercialization of our lead product candidate, KPI-121 0.25% for the temporary treatment of signs and symptoms of dry eye disease, as a result of increased headcount, including management personnel to support our clinical, manufacturing and commercialization activities, expanded infrastructure, increased legal, compliance, accounting and investor and public relations expenses associated with being a public company and increased insurance premiums, among other factors. Our license agreement with The Johns Hopkins University, or JHU, under which we license certain of our patent rights and a significant portion of the technology for INVELTYS and KPI-121 0.25%, imposes royalty and other financial obligations on us, and we may enter into additional licensing and funding arrangements with third parties that may impose milestone payment, royalty, insurance and other obligations on us.

Our expenses will also increase if and as we:

- continue to commercialize INVELTYS in the United States and seek regulatory approval for INVELTYS outside of the United States;
- continue to grow our sales, marketing and distribution capabilities during the commercialization of INVELTYS and any product candidates for which we may submit for and obtain marketing approval;
- conduct any necessary clinical trials and other development activities and/or seek marketing approvals for KPI-121 0.25% and any other product candidates;
- continue development of KPI-121 0.25%, including conducting our ongoing Phase 3 clinical trial, and/or seek marketing approvals for KPI-121 0.25% and any other product candidates;

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- pursue the clinical development of KPI-121 for the treatment of other additional indications or for use in other patient populations or, if approved, seek to broaden the label of KPI-121;
- pursue the preclinical and clinical development of product candidates, including our receptor Tyrosine Kinase Inhibitor program, or rTKI program, for use in the treatment of retinal diseases;
- expand our sales, marketing and distribution capabilities for our other product candidates, prior to or upon receiving marketing approval;
- continue to scale up our manufacturing processes and capabilities to support commercialization of INVELTYS, and any of our product candidates, including KPI-121 0.25%, for which we seek and/or obtain marketing approval;
- leverage our proprietary AMPPLIFY technology to advance additional potential high-value therapeutics into preclinical and clinical development;
- in-license or acquire the rights to other products, product candidates or technologies;
- maintain, expand and protect our intellectual property portfolio;
- hire additional clinical, quality control, scientific, manufacturing, commercial and management personnel;
- expand our operational, financial and management systems and increase personnel, including personnel to support our clinical development, manufacturing and commercialization efforts and our operations as a public company; and
- increase our product liability insurance coverage as we initiate and expand our commercialization efforts.

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 achieve profitability. Our expenses will increase from what we anticipate if:

- we elect to or are required by the FDA or non-U.S. regulatory agencies to perform clinical trials or studies in addition to those expected;
- there are any delays in enrollment of patients in or completing our clinical trials or the development of our product candidates; or
- there are any third-party challenges to our intellectual property portfolio, or the need arises to defend against intellectual property-related claims or enforce our intellectual property rights.

Our ability to become and remain profitable depends on our ability to generate revenue. While we began to generate revenue from the sales of INVELTYS in January 2019, there can be no assurance as to the amount or timing of any such revenue, and we may not achieve profitability for several years, if at all. Achieving and maintaining profitability will require us to be successful in a range of challenging activities, including:

- successful launching of INVELTYS, including by further developing our sales force, marketing and distribution capabilities;
- achieving an adequate level of market acceptance, and obtaining and maintaining coverage and adequate reimbursement from third-party payors for INVELTYS and any other products we commercialize;
- obtaining marketing approval for KPI-121 0.25% or any other product candidates;

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- manufacturing at commercial scale, marketing, selling and distributing INVELTYS or any product candidates for which we obtain marketing approval, including KPI-121 0.25%;
- maintaining regulatory and marketing approvals for INVELTYS and for any other product candidates for which we obtain approval;
- hiring and building a full commercial organization required for the marketing, selling and distributing for those products which we obtain marketing approval; and
- obtaining, maintaining and protecting our intellectual property rights.

INVELTYS is our only product that has been approved for sale and it has only been approved in the United States for the treatment of inflammation and pain following all ocular surgery. Our ability to generate revenue from operations will depend, in part, on the timing and success of commercial sales of INVELTYS, which we commercially launched in the United States in January 2019. However, the successful commercialization of INVELTYS in the United States is subject to many risks. We are currently undertaking our first commercial launch with INVELTYS, and we may not be able to do so successfully. There are numerous examples of unsuccessful product launches and failures to meet expectations of market potential, including by pharmaceutical companies with more experience and resources than us. We do not anticipate our revenue from sales of INVELTYS alone will be sufficient for us to become profitable for several years, if at all.

We may never succeed in these activities and may never generate revenue that is sufficient to achieve profitability. Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable would decrease the value of our company and could impair our ability to raise capital, expand our business, maintain our research and development efforts, diversify our product offerings or even continue our operations. A decline in the value of our company could also cause you to lose all or part of your investment.

Our limited operating history may make it difficult for you to evaluate the success of our business to date and to assess our future viability.

We are an early-stage company. Our operations to date have been limited to organizing and staffing our company, acquiring rights to intellectual property, business planning, raising capital and developing INVELTYS and our product candidates, including KPI-121 0.25%, and engaging in activities to prepare for the commercial launch of INVELTYS. We only recently launched INVELTYS and are still in the process of executing our commercial launch plan, have no history of commercializing products, and, to date, have not generated significant revenue from the sale of INVELTYS. Consequently, any predictions you make about our future success or viability may not be as accurate as they could be if we had a longer operating history.

In addition, as a new business, we may encounter unforeseen expenses, difficulties, complications, delays and other known and unknown factors. We are in the early stages of the process of transitioning from a company with a research and development focus to a company capable of supporting commercial activities. We may not be successful in such a transition.

We expect our financial condition and operating results to fluctuate significantly from quarter-to-quarter and year-to-year due to a variety of factors, many of which are beyond our control. Accordingly, you should not rely upon the results of any quarterly or annual periods as indications of future operating performance.

We may need substantial additional funding. If we are unable to raise capital when needed, we could be forced to delay, reduce or eliminate our product development programs or commercialization efforts.

We expect to devote substantial financial resources to our ongoing and planned activities, particularly as we commercialize INVELTYS, seek marketing approval for KPI-121 0.25%, and continue the development of and potentially seek marketing approval for other product candidates. We expect our expenses to increase substantially in

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connection with our ongoing activities, particularly as we commercialize INVELTYS and advance our preclinical activities and clinical trials for our product candidates. In addition, our expenses will further increase as we conduct our third Phase 3 trial for KPI-121 0.25% and if we elect to or are required to conduct any further trials. We also expect to devote additional financial resources to conducting research and development, initiating clinical trials of, and potentially seeking regulatory approval for, other potential product candidates, including product candidates that we may develop using our rTKI program.

Our expenses have increased as we have begun commercializing INVELTYS, including costs associated with our newly hired specialty sales force and increased marketing, distribution and manufacturing capabilities. If we obtain marketing approval for KPI-121 0.25% or any other product candidate that we develop, we expect to incur significant additional commercialization expenses for such product candidate. Furthermore, we will incur additional costs associated with operating as a public company, hiring additional personnel and expanding our facilities. Accordingly, we may need to obtain substantial additional funding in connection with our continuing operations. If we are unable to raise capital when needed or on attractive terms, we could be forced to delay, reduce or eliminate our research and development programs or any future commercialization efforts.

Our future capital requirements will depend on many factors, including:

- our ability to successfully commercialize and sell INVELTYS in the United States;
- the cost, and our ability to expand and maintain the commercial infrastructure and manufacturing capabilities required to support the commercialization of INVELTYS, and any other products for which we receive marketing approval including product sales, medical affairs, marketing, manufacturing and distribution;
- the progress, costs and results of our additional Phase 3 trials for KPI-121 0.25%, STRIDE 3 (STRIDE—Short Term Relief In Dry Eye), and whether we determine, or are required, to conduct any additional clinical trials or other activities for KPI-121 0.25%;
- the costs, timing and outcome of regulatory review of KPI-121 0.25%, including whether any additional clinical trials or other activities are required for approval or label expansion;
- the progress, costs and results of any clinical activities for regulatory review of INVELTYS and KPI-121 0.25% outside of the United States;
- the costs and timing of process development and manufacturing scale-up activities associated with INVELTYS and KPI-121 0.25%;
- the costs of commercialization activities for KPI-121 0.25% if we receive marketing approval and pre-commercialization costs for KPI-121 0.25% incurred prior to receiving any such marketing approval, including the costs and timing of expanding our sales force and establishing additional product sales, marketing, distribution and outsourced manufacturing capabilities;
- the amount of revenue received from commercial sales of INVELTYS and, assuming receipt of marketing approval, KPI-121 0.25% or any other product candidates;
- our ability to establish and maintain strategic collaborations, licensing or other agreements and the financial terms of such agreements;
- the scope, progress, results and costs of any product candidates that we may derive from any other product candidates that we may develop;

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- the extent to which we in-license or acquire rights to other products, product candidates or technologies; and
- the costs and timing of preparing, filing and prosecuting patent applications, maintaining and protecting our intellectual property rights and defending against any intellectual property-related claims.

We believe that our existing cash on hand as of December 31, 2018, will enable us to fund our planned operating expenses, debt service obligations and capital expenditure requirements through at least mid-2020 with additional cash runway expected when including INVELTYS revenue. We have based these estimates on assumptions that may prove to be wrong, and our operating plan may change as a result of many factors currently unknown to us. As a result, we could deplete our available capital resources sooner than we currently expect.

Conducting preclinical testing and clinical trials, seeking market approvals and commercializing products are time-consuming, expensive and uncertain processes that take years to complete. Although we commercially launched INVELTYS in early 2019, we do not anticipate that our revenue from product sales of INVELTYS will be sufficient for us to become profitable for several years, if at all. Additionally, in December 2018, the FDA accepted for filing our NDA for KPI-121 0.25% and has granted a target action date under PDUFA of August 15, 2019. We may not receive approval to commercialize KPI-121 0.25%. Based upon the recommendation of the FDA, we also initiated an additional Phase 3 clinical trial, STRIDE 3, in the third quarter of 2018 evaluating KPI-121 0.25% for the temporary relief of the signs and symptoms of dry eye disease. We may determine to conduct additional Phase 3 trials for KPI-121 0.25% or to potentially expand the label of KPI-121 0.25% if we receive marketing approval for a narrower indication than we are targeting. In addition, we may never generate the necessary data or results required to obtain regulatory approval of KPI-121 0.25% or of any other product candidates. We will need to obtain substantial additional financing to achieve our business objectives. In addition, we may seek additional capital due to favorable market conditions or strategic considerations, even if we believe we have sufficient funds for our current or future operating plans. Adequate additional financing may not be available to us on acceptable terms, or at all. If adequate funds are not available to us on a timely basis, we may be required to delay, limit, reduce or terminate preclinical studies, clinical trials or other development activities for one or more of our product candidates or delay, limit, reduce or terminate our establishment of sales and marketing capabilities or other activities that may be necessary to commercialize INVELTYS or any other product candidates for which we obtain approval.

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

Until such time, if ever, as we can generate substantial product revenues, we expect to finance our cash needs through a combination of equity offerings, debt financings, collaborations, strategic alliances, licensing arrangements, royalty agreements, and marketing and distribution arrangements. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect your rights as a common stockholder. The lenders under our credit facility with Athyrium Opportunities III Acquisition LP, or our Athyrium Credit Facility, are currently entitled to exercise warrants for up to 184,660 shares of common stock. If we draw down on the remaining \$35.0 million of potentially available borrowings under our Athyrium Credit Facility, the lenders thereunder will be entitled to exercise warrants for up to an additional 86,175 shares of our common stock. Your ownership interest will be diluted to the extent any such warrants are exercised. Debt financing and preferred equity financing, if available, may involve agreements that include pledging of assets as collateral, covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. Our pledge of our assets as collateral to secure our obligations under our Athyrium Credit Facility may limit our ability to obtain additional debt financing. Under our Athyrium Credit Facility, we are also restricted from paying dividends on our common stock without the lenders' consent.

If we raise additional funds through collaborations, strategic alliances, licensing arrangements, royalty agreements, or marketing and distribution arrangements, 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 current or future commercialization efforts or grant rights to develop and market products or product candidates that we would otherwise prefer to develop and market ourselves.

Our substantial indebtedness may limit cash flow available to invest in the ongoing needs of our business.

We have a significant amount of indebtedness. As of December 31, 2018, we had \$75.0 million of outstanding borrowings under the Athyrium Credit Facility and have the ability to draw an additional \$35.0 million upon either (i) FDA approval of KPI-121 0.25% for a dry eye indication or (ii) reaching net product revenues of INVELTYS of at least \$25.0 million for the two fiscal quarter period then most recently ended, in each case on or prior to June 30, 2020. Amounts outstanding under the Athyrium Credit Facility bear interest at a rate of 9.875% per annum. The Athyrium Credit Facility provides for quarterly interest-only payments for 48 months. Beginning on September 30, 2022, we will be required to make principal and interest payments through October 1, 2024. Our obligations under the Athyrium Credit Facility are secured by substantially all of our assets. We could in the future incur additional indebtedness beyond our borrowings under our Athyrium Credit Facility.

Our debt combined with our other financial obligations and contractual commitments could have significant adverse consequences, including:

- requiring us to dedicate a substantial portion of cash flow from operations or cash on hand to the payment of interest on, and principal of, our debt, which will reduce the amounts available to fund working capital, capital expenditures, product development efforts and other general corporate purposes;
- increasing our vulnerability to adverse changes in general economic, industry and market conditions;
- subjecting us to restrictive covenants that may reduce our ability to take certain corporate actions or obtain further debt or equity financing;
- limiting our flexibility in planning for, or reacting to, changes in our business and our industry; and
- placing us at a competitive disadvantage compared to our competitors that have less debt or better debt servicing options.

We intend to satisfy our current and future debt service obligations with our existing cash and anticipated product revenue from INVELTYS. Nonetheless, we may not have sufficient funds or may be unable to arrange for additional financing to pay the amounts due under our existing debt and funds from external sources may not be available on acceptable terms, if at all. In addition, a failure to comply with the covenants under our Athyrium Credit Facility could result in an event of default and acceleration of amounts due. If an event of default occurs and the lender accelerates the amounts due under our Athyrium Credit Facility, we may not be able to make accelerated payments, and the lender could seek to enforce security interests in the collateral securing such indebtedness.

Risks Related to Product Development

We are dependent on the success of INVELTYS and our lead product candidate, KPI-121 0.25%. If we are unable to successfully commercialize INVELTYS or obtain marketing approval for KPI-121 0.25%, or if we experience significant delays in doing so, or if, after obtaining marketing approval for KPI-121 0.25%, we fail to successfully commercialize KPI-121 0.25%, our business will be materially harmed.

We have devoted a significant portion of our financial resources and business efforts to the development of INVELTYS for the post-operative treatment of inflammation and pain following ocular surgery and KPI-121 0.25% for the temporary relief of the signs and symptoms of dry eye disease. There is a significant risk that we will fail to successfully commercialize INVELTYS and to successfully obtain marketing approval for and commercialize KPI-121 0.25%. In January 2018, we announced that we had completed two Phase 3 clinical trials evaluating KPI-121 0.25%, STRIDE 1 and STRIDE 2, evaluating the safety and efficacy of KPI-121 0.25% versus placebo in patients with dry eye

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disease. In STRIDE 1, statistical significance was achieved for both primary endpoints. However, in STRIDE 2 we did not achieve statistical significance for the primary symptom endpoint of ocular discomfort severity. In December 2018, the FDA accepted for filing our NDA for KPI-121 0.25% and has granted a target action date under PDUFA of August 15, 2019. We may not receive approval to commercialize KPI-121 0.25%. Based upon the recommendation of the FDA, we initiated an additional Phase 3 clinical trial, STRIDE 3, in the third quarter of 2018 evaluating KPI-121 0.25% for the temporary relief of the signs and symptoms of dry eye disease. We may also determine to conduct additional Phase 3 trials for KPI-121 0.25% or to potentially expand the label of KPI-121 0.25% if we receive marketing approval for a narrower indication than we are targeting. We cannot accurately predict when or if KPI-121 0.25% will receive marketing approval. Our ability to generate product revenues will depend on our successful commercialization of INVELTYS and our obtaining marketing approval for, and successfully commercializing, KPI-121 0.25%.

The success of our product INVELTYS, our lead product candidate, KPI-121 0.25%, and any other product candidates will depend on many factors, including the following:

- successful commercialization of INVELTYS in the United States, including establishing sales, marketing and distribution capabilities for INVELTYS;
- acceptance of INVELTYS and, if and when approved, KPI-121 0.25% and our other product candidates by patients, the medical community and third-party payors;
- obtaining and maintaining coverage, adequate pricing, and adequate reimbursement from third-party payors, including government payors, for INVELTYS and our product candidates;
- successfully developing and applying for and receiving marketing approvals from applicable regulatory authorities for KPI-121 0.25% and other product candidates;
- receiving regulatory approval of our manufacturing processes and our third-party manufacturers' facilities from applicable regulatory authorities;
- expanding and maintaining a workforce of experienced scientists and others with experience in AMPLIFY technology to continue to develop our product candidates;
- establishing sales, marketing and distribution capabilities for KPI-121 0.25% and successfully launching commercial sales of any other product candidates for which we obtain marketing approval, whether alone or in collaboration with others;
- effectively competing with other therapies;
- maintaining an acceptable safety profile of our products following approval;
- obtaining and maintaining patent and trade secret protection and regulatory exclusivity for our product candidates;
- protecting our rights in our intellectual property portfolio; and
- not infringing on others' intellectual property rights.

Successful development of KPI-121 for additional indications, if any, or for use in broader patient populations will depend on similar factors.

If we do not achieve one or more of these factors in a timely manner or at all, we could experience significant delays or an inability to successfully commercialize INVELTYS or our product candidates, including KPI-121 0.25%, which would materially harm our business.

If clinical trials of KPI-121 0.25% or any other product candidate that we develop fail to demonstrate safety and efficacy to the satisfaction of the FDA or other regulatory authorities or do not otherwise produce favorable results, we may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of such product candidate.

Before obtaining marketing approval from regulatory authorities for the sale of any product candidate, we must complete preclinical development and then conduct extensive clinical trials to demonstrate the safety and efficacy of our product candidates in humans. Clinical testing is expensive, difficult to design and implement, can take many years to complete and is uncertain as to outcome. A failure of one or more clinical trials can occur at any stage of testing. The outcome of preclinical testing and early clinical trials may not be predictive of the success of later stage clinical trials, and interim results of a clinical trial do not necessarily predict final results. Moreover, preclinical and clinical data are often susceptible to varying interpretations and analyses, and many companies that have believed their product candidates performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain marketing approval of their product candidates. Furthermore, the failure of any product candidates to demonstrate safety and efficacy in any clinical trial could negatively impact the perception of our other product candidates and/or cause the FDA or other regulatory authorities to require additional testing before approving any of our product candidates. For example, we previously conducted a Phase 2 clinical trial of KPI-121 0.25% for the treatment of meibomian gland dysfunction which did not achieve its primary endpoint. The failure of this trial may have an adverse impact on the perceived safety or efficacy of KPI-121 0.25% in treating dry eye disease or other indications or of INVELTYS.

In January 2018, we announced that we had completed two Phase 3 clinical trials evaluating KPI-121 0.25%, STRIDE 1 and STRIDE 2, evaluating the safety and efficacy of KPI-121 0.25% versus placebo in patients with dry eye disease. In STRIDE 1, statistical significance was achieved for both primary endpoints. However, in STRIDE 2 we did not achieve statistical significance for the primary symptom endpoint of ocular discomfort severity. In December 2018, the FDA accepted for filing our NDA for KPI-121 0.25% and has granted a target action date under PDUFA of August 15, 2019. We may not receive approval to commercialize KPI-121 0.25%. Based upon the recommendation of the FDA, we initiated an additional Phase 3 clinical trial, STRIDE 3, in the third quarter of 2018 evaluating KPI-121 0.25% for the temporary relief of the signs and symptoms of dry eye disease. We may also determine to conduct additional Phase 3 trials for KPI-121 0.25% or to potentially expand the label of KPI-121 0.25% if we receive marketing approval for a narrower indication than we are targeting. If the FDA determines that we have not sufficiently demonstrated efficacy for both signs and symptoms of dry eye, we may need to conduct additional clinical trials to support approval of KPI-121 0.25% for temporary relief of signs and symptoms of dry eye disease. If we conduct additional clinical trials of KPI-121 0.25%, our expenses will significantly increase and could delay or halt our ability to obtain marketing approval. Regulatory authorities outside the United States, in particular in the European Union, have not issued formal guidance on the requirements for approval of a dry eye drug. Our Phase 3 clinical trials of KPI-121 0.25% may not be sufficient to support an application for marketing approval outside the United States. Further, if regulatory authorities outside the United States do not accept the data from any trial we conduct in the United States, in particular if the European Union does not allow us to utilize the results from our Phase 3 clinical trials of KPI-121 0.25% pursuant to the Article 10(3) submission pathway or otherwise, we will likely need to conduct additional trials to obtain marketing approval in such jurisdiction, which would be costly and time-consuming and could delay or permanently halt our ability to commercialize the applicable product candidates in the applicable jurisdictions.

We performed additional analyses on a post-hoc basis on the results of our completed Phase 2 clinical trial for KPI-121 0.25% for the purpose of designing our STRIDE 1 and STRIDE 2 clinical trials for KPI-121 0.25%. Following completion of these Phase 3 trials we conducted additional analyses on a post-hoc basis of the data from both these Phase 3 trials and the Phase 2 clinical trial to support our NDA submission and to inform the design of our STRIDE 3 clinical trial and our development plan. We may also conduct additional post-hoc analyses on the results of clinical trials in the future. Post-hoc analyses performed after unmasking trial results can result in the introduction of bias, may not be predictive of success in any future clinical trials and are given less weight by regulatory authorities than pre-specified analyses. If we are required to conduct additional clinical trials or other testing of KPI-121 0.25% or any other product candidate that we develop beyond those that we currently expect, if we are unable to successfully complete clinical trials

of our product candidates or other testing, if the results of these trials or tests are not positive or are only modestly positive or if there are safety concerns, we may:

- be delayed in obtaining marketing approval for our product candidates;
- not obtain marketing approval at all;
- obtain approval for indications or patient populations that are not as broad as intended or desired;
- obtain approval with labeling that includes significant use or distribution restrictions or safety warnings, including boxed warnings;
- be subject to additional post-marketing testing requirements; or
- have the product removed from the market after obtaining marketing approval.

If we experience any of a number of possible unforeseen events in connection with our clinical trials, potential marketing approval or commercialization of our product candidates could be delayed or prevented and our competitors could bring products to market before we do.

We may experience numerous unforeseen events during, or as a result of, clinical trials that could delay or prevent our ability to receive marketing approval or commercialize KPI-121 0.25% or any other product candidates that we may develop, including:

- clinical trials of our product candidates, including STRIDE 3, may produce negative or inconclusive results, and we may decide, or regulators may recommend or require us, to conduct additional clinical trials or abandon product development programs;
- the number of patients required for clinical trials of our product candidates may be larger than we anticipate, enrollment in these clinical trials may be slower than we anticipate or participants may drop out of these clinical trials at a higher rate than we anticipate;
- our third-party contractors may fail to comply with regulatory requirements or meet their obligations to us in a timely manner, or at all;
- regulators or institutional review boards may not authorize us or our investigators to commence a clinical trial or conduct a clinical trial at a prospective trial site;
- we may experience delays in reaching, or fail to reach, agreement on acceptable clinical trial contracts or clinical trial protocols with prospective trial sites;
- we may decide, or regulators or institutional review boards may require us, to suspend or terminate clinical research for various reasons, including noncompliance with regulatory requirements or a finding that the participants are being exposed to unacceptable health risks;
- regulators may recommend or require us to perform additional or unanticipated clinical trials to obtain approval or we may be subject to additional post-marketing testing requirements to maintain regulatory approval;
- regulators may revise the requirements for approving our product candidates, or such requirements may not be as we anticipate;
- the cost of clinical trials of our product candidates may be greater than we anticipate;

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- the supply or quality of our product candidates or other materials necessary to conduct clinical trials of our product candidates may be insufficient or inadequate or may be delayed;
- our product candidates may have undesirable side effects or other unexpected characteristics, causing us or our investigators, regulators or institutional review boards to suspend or terminate trials; and
- regulatory authorities may withdraw their approval of a product or impose restrictions on its distribution, such as in the form of a modified Risk Evaluation and Mitigation Strategy.

Our product development costs will also increase if we experience delays in testing or marketing approvals. We do not know whether any of our preclinical studies or clinical trials will begin as planned, will need to be restructured or will be completed on schedule, or at all. Significant preclinical or clinical trial delays also could shorten any periods during which we may have the exclusive right to commercialize our product candidates or allow our competitors, such as those developing treatments for dry eye disease, to bring products to market before we do and impair our ability to successfully commercialize our product candidates.

If we experience delays or difficulties in the enrollment of patients in clinical trials, our receipt of necessary regulatory approvals could be delayed or prevented.

We may not be able to initiate or continue clinical trials for product candidates we develop if we are unable to locate and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA or similar regulatory authorities outside the United States.

- Patient enrollment is affected by a variety of factors, including:
- the prevalence and severity of the disease or condition under investigation;
- the patient eligibility criteria for the trial in question;
- the perceived risks and benefits of the product candidate under study;
- the existence of existing treatments for the indications for which we are conducting clinical trials;
- the efforts to facilitate timely enrollment in clinical trials;
- the patient referral practices of clinicians;
- the ability to monitor patients adequately during and after treatment;
- the proximity and availability of clinical trial sites for prospective patients;
- the conducting of clinical trials by competitors for product candidates that treat the same indications as our product candidates; and
- the lack of adequate compensation for prospective patients.

Our inability to locate and enroll a sufficient number of patients for our clinical trials would result in significant delays, could require us to abandon one or more clinical trials altogether and could delay or prevent our receipt of necessary regulatory approvals. Enrollment delays in our clinical trials may result in increased development costs for our product candidates, which would cause the value of our company to decline and limit our ability to obtain additional financing.

If serious adverse or unacceptable side effects are identified during the development or commercialization of our product or product candidates, we may need to abandon or limit our development of such product or product candidates.

If INVELTYS or any of our product candidates, including KPI-121 0.25%, are associated with serious adverse events or undesirable side effects in clinical trials or following approval and/or commercialization, or if our product or product candidates have characteristics that are unexpected, we may need to abandon their development or limit development or marketing to narrower uses or subpopulations in which the serious adverse events, undesirable side effects or other characteristics are less prevalent, less severe or more acceptable from a risk-benefit perspective. The most common adverse effects to date in trials evaluating the safety and efficacy of INVELTYS and KPI-121 0.25% have been eye pain, instillation site pain, blurred vision and photophobia, which is discomfort or pain due to exposure to light. There have been no serious adverse events related to the administration of KPI-121 reported in any of our clinical trials to date. Increases in intraocular pressure, or IOP, and cataract formation are additional adverse effects associated with the use of corticosteroids. We have no clinical safety data on or patient exposure to either KPI-121 concentration for longer than 28 days. Our understanding of the relationship between our products and these adverse effects may change as we gather more information, and additional unexpected adverse effects may occur. Compounds that initially show promise in clinical or earlier stage testing for treating ophthalmic disease or other diseases may later be found to cause side effects that prevent further development and commercialization of the compound. In addition, adverse events which had initially been considered unrelated to the study treatment may later, even following approval and/or commercialization, be found to be caused by the study treatment. Moreover, incorrect or improper use of our product or our product candidates (including use of KPI-121 0.25% more frequently than is prescribed) by patients could cause increases in IOP, and may result in additional unexpected side effects or adverse events. There can be no assurance that our product or our product candidates will be used correctly, and if used incorrectly, such misuse could hamper commercial adoption or market acceptance of our product or product candidates, if approved, at the rate we currently expect.

We may not be successful in our efforts to develop product candidates based on our AMPPLIFY technology or expand the use of our AMPPLIFY technology for treating additional diseases and conditions.

We are currently directing all of our development efforts towards applying our AMPPLIFY technology to develop product candidates that are designed to diffuse through the mucus layer and enable the active drug substance to reach cells in the underlying target tissue. We have product candidates at various stages of development for treatment of eye diseases and are exploring the potential use of our AMPPLIFY technology in other diseases, including diseases of the lungs. Our existing product candidates and any other potential product candidates that we identify may not be suitable for continued preclinical or clinical development, including as a result of being shown to have harmful side effects or other characteristics that indicate that they are unlikely to be products that will receive marketing approval and achieve market acceptance. If we do not successfully develop and commercialize our product candidates that we develop based upon our AMPPLIFY technology, we will not be able to obtain substantial product revenues in future periods.

We may expend our limited resources to pursue a particular product candidate or indication and fail to capitalize on product candidates or indications that may be more profitable or for which there is a greater likelihood of success.

Because we have limited financial and managerial resources, we focus on research programs and product candidates that we identify for specific indications. As a result, we may forego or delay pursuit of opportunities with other product candidates or for other indications that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. Our spending on current and future research and development programs and product candidates for specific indications may not yield any commercially viable products. If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through collaboration, licensing or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such product candidate.

We may in the future conduct clinical trials for product candidates at sites outside the United States, and the FDA may not accept data from trials conducted in such locations.

We may in the future choose to conduct one or more of our clinical trials outside the United States. Although the FDA may accept data from clinical trials conducted outside the United States, acceptance of these data is subject to conditions imposed by the FDA. For example, the clinical trial must be well designed and conducted and be performed by qualified investigators in accordance with ethical principles. The trial population must also adequately represent the U.S. population, and the data must be applicable to the U.S. population and U.S. medical practice in ways that the FDA deems clinically meaningful. In addition, while these clinical trials are subject to the applicable local laws, FDA acceptance of the data will depend on its determination that the trials also complied with all applicable U.S. laws and regulations. If the FDA does not accept the data from any trial that we conduct outside the United States, it would likely result in the need for additional trials, which would be costly and time-consuming and could delay or permanently halt our development of the applicable product candidates.

Risks Related to the Commercialization of INVELTYS and our Product Candidates

INVELTYS or any of our product candidates that receives marketing approval, including KPI-121 0.25%, may fail to achieve market acceptance by clinicians and patients, or adequate formulary coverage, pricing or reimbursement by third-party payors and others in the medical community, and the market opportunity for these products may be smaller than we estimate.

INVELTYS or any other product candidate that we develop that receives marketing approval, including KPI-121 0.25%, may fail to gain sufficient market acceptance by clinicians, patients, third-party payors and others in the medical community. Common treatments in the United States for inflammation and pain following ocular surgery include corticosteroids. Our current estimates of potential future revenue from sales of INVELTYS are based, in part, on market research data we have commissioned. For example, based on a market survey we commissioned of 100 ophthalmologists, we believe INVELTYS offers advantages over existing post-surgical treatment options due to its AMPLIFY technology and being the first and only twice-daily dosing, two-week course of treatment and safety data, including low incidence of reported IOP spikes, and efficacy data from our clinical trials. In this market survey, a majority of surveyed ophthalmologists indicated they were likely to prescribe INVELTYS. However, doctors may continue to rely on ocular steroids other than INVELTYS and other treatments rather than INVELTYS. In addition, there are also non-topical formulations of ocular steroids that have been recently approved and/or marketed. It is also possible that other therapeutics will be approved for treatment of inflammation and pain following ocular surgery with twice-a-day or less frequent dosing.

While there are no drugs currently approved in the United States for the temporary relief of the signs and symptoms of dry eye disease, current treatments that are used in the United States for dry eye disease include over-the-counter artificial tears, Restasis[®], Xiidra[®], Cequa[™] and off-label use of corticosteroids. Generic versions of Restasis are also expected to become available in the U.S. in 2019. Our current expectations regarding market potential for KPI-121 0.25% are based, in part, on market research data we have commissioned. For example, based on a two surveys we commissioned of 503 and 297 dry eye disease patients, which we refer to as our patient survey, 90% of surveyed patients reported experiencing short-term flares, with the majority experiencing on average four days of flares six times per year, and the most common reason given by patients for discontinuing the two leading branded dry eye treatments were insufficient efficacy and side effects. However, it is possible that doctors may continue to rely on other existing treatments rather than KPI-121 0.25%, if and when it is approved for marketing by the FDA. In addition, if generic versions of any products that compete with any of our product candidates are approved for marketing by the FDA, they would likely be offered at a substantially lower price than we expect to offer for our product candidates, if approved. As a result, clinicians, patients and third-party payors may choose to rely on such products rather than our product candidates.

Our assessment of the potential market opportunity for INVELTYS and our product candidates, including KPI-121 0.25%, is based on industry and market data that we obtained from industry publications and research, surveys and studies conducted by third parties, some of which we commissioned. Industry publications and third-party research, surveys and studies generally indicate that their information has been obtained from sources believed to be reliable,

although they do not guarantee the accuracy or completeness of such information. While we believe these industry publications and third-party research, surveys and studies are reliable, we have not independently verified such data. The potential market opportunity for the treatment of dry eye disease in particular is difficult to precisely estimate. The results from our patient survey may be less reflective of the dry eye disease population as a whole than a survey conducted with a larger sample size. Our estimates of the potential market opportunities for our product candidates include several key assumptions based on our industry knowledge, industry publications, third-party research and other surveys, which may be based on a small sample size and fail to accurately reflect market opportunities. While we believe that our internal assumptions are reasonable, no independent source has verified such assumptions. If any of our assumptions or estimates, or these publications, research, surveys or studies prove to be inaccurate, then the actual market for INVELTYS or any of our product candidates, including KPI-121 0.25%, may be smaller than we expect, and as a result our product revenue may be limited and it may be more difficult for us to achieve or maintain profitability.

If INVELTYS or any of our product candidates for which we obtain marketing approval, including KPI-121 0.25%, do not achieve adequate levels of acceptance, formulary coverage, pricing or reimbursement, we may not generate significant product revenues and we may not become profitable. The degree of market acceptance of INVELTYS or any product candidates for which we obtain marketing approval, will depend on a number of factors, including:

- the efficacy and potential advantages of our product or our product candidates compared to alternative treatments, including the existing standard of care;
- our ability to offer our products for sale at competitive prices, particularly in light of the lower cost of alternative treatments;
- the clinical indications for which the product is approved;
- the convenience and ease of administration compared to alternative treatments;
- the willingness of the target patient population to try new therapies and of clinicians to prescribe these therapies;
- the strength of our marketing and distribution support;
- the timing of market introduction of competitive products;
- the availability of third-party formulary coverage and adequate reimbursement, particularly by Medicare in light of the prevalence of dry eye disease and cataracts in persons over age 55;
- the prevalence and severity of any side effects; and
- any restrictions on the use of our products together with other medications.

Even if we are able to commercialize INVELTYS or any product candidate that we may develop, including KPI-121 0.25%, the products may become subject to unfavorable pricing regulations, third-party coverage or reimbursement practices or healthcare reform initiatives, which could harm our business.

Our ability to commercialize INVELTYS or any of our product candidates, including KPI-121 0.25%, that we may develop successfully will depend, in part, on the extent to which coverage and adequate reimbursement for these products and related treatments will be available from government healthcare programs, private health insurers, managed care plans and other organizations. Government authorities and third-party payors, such as private health insurers and health maintenance organizations, decide which medications they will pay for and establish reimbursement levels. A primary trend in the U.S. healthcare industry and elsewhere is cost containment. Government authorities and third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications.

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Increasingly, third-party payors are requiring that drug companies provide them with predetermined discounts from list prices and are challenging the prices charged for medical products. Coverage and reimbursement may not be available for INVELTYS or any product candidate that we commercialize and, even if they are available, the level of reimbursement may be limited or not satisfactory.

Inadequate reimbursement may adversely affect the demand for, or the price of, INVELTYS or any product candidate for which we obtain marketing approval. Obtaining and maintaining adequate reimbursement for our products may be difficult. We may be required to conduct expensive pharmacoeconomic studies to justify coverage and reimbursement or the level of reimbursement relative to other therapies. If coverage and adequate reimbursement are not available or reimbursement is available only to limited levels, we may not be able to successfully commercialize INVELTYS or any product candidate for which we obtain marketing approval.

There may be significant delays in obtaining coverage and reimbursement for newly approved drugs, and coverage may be more limited than the indications for which the drug is approved by the FDA or similar regulatory authorities outside the United States. Moreover, eligibility for coverage and reimbursement does not imply that a drug will be paid for in all cases or at a rate that covers our costs, including research, development, manufacture, sale and distribution expenses. Interim reimbursement levels for new drugs, if applicable, may also not be sufficient to cover our costs and may not be made permanent. Reimbursement rates may vary according to the use of the drug and the clinical setting in which it is used, may be based on reimbursement levels already set for lower cost drugs and may be incorporated into existing payments for other services. Net prices for drugs may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future relaxation of laws that presently restrict imports of drugs from countries where they may be sold at lower prices than in the United States. Third-party payors often rely upon Medicare coverage policy and payment limitations in setting their own reimbursement policies. Our inability to promptly obtain coverage and adequate reimbursement rates from both government-funded and private payors for any approved products that we develop would compromise our ability to generate revenues and become profitable.

The regulations that govern marketing approvals, pricing, coverage and reimbursement for new drug products vary widely from country to country. Current and future legislation may significantly change the approval requirements in ways that could involve additional costs and cause delays in obtaining approvals. Some countries require approval of the sale price of a drug before it can be marketed. In many countries, the pricing review period begins after marketing or product licensing approval is granted. In some foreign markets, prescription pharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted. As a result, we might obtain marketing approval for a product in a particular country, but then be subject to price regulations that delay our commercial launch of the product, possibly for lengthy time periods, and negatively impact the revenues we are able to generate from the sale of the product in that country. To obtain reimbursement or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost-effectiveness of our product candidate to other available therapies. Adverse pricing limitations may hinder our ability to recoup our investment in one or more product candidates, even if our product candidates obtain marketing approval.

There can be no assurance that INVELTYS or our product candidates, including KPI-121 0.25%, even if such product candidates are approved for sale in the United States or in other countries, will be considered medically reasonable and necessary for a specific indication or cost-effective by third-party payors, or that coverage and an adequate level of reimbursement will be available or that third-party payors' reimbursement policies will not adversely affect our ability to sell INVELTYS or our product candidates profitably.

If we are unable to establish sales, marketing and distribution capabilities or enter into sales, marketing and distribution agreements with third parties, we may not be successful in commercializing INVELTYS or any of our product candidates that we may develop if and when they are approved.

We have only recently begun to establish a sales or marketing infrastructure for our commercial launch of INVELTYS, our first product, and have no prior experience in the sales, marketing or distribution of therapeutic products. To achieve commercial success for any product for which we obtained marketing approval, we will need to

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establish additional sales, marketing and distribution capabilities, either ourselves or through collaborations or other arrangements with third parties.

We recently completed the buildout of our specialty sales, marketing and distribution infrastructure in the U.S. to commercialize INVELTYS and plan to expand that infrastructure to market any of our product candidates that we develop in the United States, if and when such product candidates are approved. There are risks involved with establishing our own sales, marketing and distribution capabilities. For example, recruiting and training a sales force is expensive and time consuming and could delay any product launch. Further, we may underestimate the size of the sales force required for a successful product launch and may need to expand our sales force earlier and at a higher cost than we anticipated. If the commercial launch of any of our product candidates for which we establish a commercial infrastructure is delayed or does not occur for any reason, including if we do not receive marketing approval for KPI-121 0.25% or our other product candidates on the timeframe we expect, we would have prematurely or unnecessarily incurred these commercialization expenses. This may be costly, and our investment would be lost if we cannot retain or reposition our sales and marketing personnel.

Factors that may inhibit our efforts to commercialize INVELTYS or any product candidates for which we receive marketing approval, including KPI-121 0.25%, on our own include:

- our inability to recruit, train and retain adequate numbers of effective sales and marketing personnel;
- the inability of sales personnel to obtain access to clinicians or persuade adequate numbers of clinicians to prescribe our products;
- the lack of complementary products to be offered by sales personnel, which may put us at a competitive disadvantage relative to companies with more extensive product lines;
- unforeseen costs and expenses associated with creating an independent sales, marketing and distribution organization; and
- our ability to obtain and maintaining coverage, adequate pricing, and adequate reimbursement from third-party payors, including government payors, for INVELTYS and our product candidates.

While we cannot be certain when, if ever, we will seek and/or receive marketing approval to commercialize any of our product candidates outside the United States, we plan to seek marketing approval and explore commercialization of KPI-121 0.25% in certain markets outside the United States, including the European Union, utilizing a variety of collaboration, distribution and other marketing arrangements with one or more third parties. Our product revenues and our profitability, if any, under any such third-party collaboration, distribution or other marketing arrangements are likely to be lower than if we were to market, sell and distribute KPI-121 0.25% ourselves. We may also consider seeking marketing approval outside the United States for other product candidates in the future. If we decide to seek regulatory approval for any of our product candidates outside the United States, we may need to seek additional patent approvals, seek licenses to patents held by third parties and/or face claims of infringing third-party patent rights.

In addition, we may not be successful in entering into arrangements with third parties to sell, market and distribute INVELTYS or any of our product candidates, including KPI-121 0.25%, or we may be unable to do so on terms that are favorable to us. We likely will have little control over such third parties, and any of them may fail to devote the necessary resources and attention to sell and market INVELTYS or any of our product candidates for which we obtain marketing approval, including KPI-121 0.25%, effectively. If we do not establish sales, marketing and distribution capabilities successfully, either on our own or in collaboration with third parties, we will not be successful in commercializing INVELTYS, or any of our product candidates for which we obtain marketing approval, including KPI-121 0.25%.

We face substantial competition, which may result in others discovering, developing or commercializing products before or more successfully than we do. Our competitors include major pharmaceutical companies with significantly greater financial resources. INVELTYS, and our product candidates, including KPI-121 0.25%, if approved, will also compete with existing branded, generic and off-label products.

The development and commercialization of new drug products is highly competitive. We face competition with respect to INVELTYS and our product candidates, including KPI-121 0.25%, and will face competition with respect to any other product candidates that we may seek to develop or commercialize in the future, from major pharmaceutical companies, specialty pharmaceutical companies and biotechnology companies worldwide. Potential competitors also include academic institutions, government agencies and other public and private research organizations that conduct research, seek patent protection and establish collaborative arrangements for research, development, manufacturing and commercialization.

Our product and our product candidates will target markets that are already served by a variety of competing products. Many of these existing products have achieved widespread acceptance among clinicians, patients and payors. In addition, many of these products are available on a generic basis, and our product or our product candidates may not demonstrate sufficient additional clinical benefits to clinicians, patients or payors to justify a higher price compared to generic products. In many cases, insurers or other third-party payors, particularly Medicare, seek to encourage the use of generic products.

Following ocular surgery, topical steroids are commonly used to manage and prevent complications from post-operative inflammation. The current market leaders for topical steroids in the United States, based on revenue, are Lotemax® products and Durezol®. Generic topical steroid formulations consist mainly of products containing prednisolone, fluorometholone or dexamethasone.

There are also non-topical formulations of ocular steroids that have been recently approved and/or marketed. Eyepoint Pharmaceutical, or Eyepoint, has received FDA approval for Dexycu™, an intraocular suspension of dexamethasone for the treatment of post-operative inflammation. Eyepoint has stated that they expect to launch Dexycu in the first half of 2019. Ocular Therapeutix has received FDA approval for Dextenza™, an intracanalicular insert of dexamethasone, for the treatment of ocular pain following ophthalmic surgery. There are also a number of companies in the United States developing products and therapies in preclinical research and clinical development for the treatment of inflammation and pain following ocular surgery. In addition, there are various formulations of steroids that are produced by compounding pharmacies and that are in drop form or are injected into the eye following ocular surgery.

Current disease management approaches for dry eye disease in the United States include the following: over-the-counter artificial tear eye drops, which are palliative and used on an intermittent or chronic basis to provide short term symptomatic relief of dryness and irritation; devices such as the TrueTear Intranasal Tear Neurostimulator, which received marketing authorization from the FDA in April 2017; off-label prescription drugs, including topical steroid drops and/or other similar products, which are prescribed on occasion for treatment of dry eye disease; on-label prescription drugs, including Restasis, Xiidra and Cequa, which are the only prescription pharmaceutical products that are approved in the United States for use in patients with dry eye disease. Restasis, and the recently FDA approved Cequa, are approved for increasing tear production in patients whose tear production is presumed to be suppressed due to ocular inflammation and Xiidra is approved for treatment of the signs and symptoms of dry eye disease. Both are typically used chronically as part of the dry eye management regimen, which also includes artificial tears and other palliative therapies, such as hot compresses for the eye and lid hygiene management; and devices, such as punctal plugs that are inserted into the tear ducts to inhibit tear drainage, resulting in more moisture on the surface of the eye.

We are developing KPI-121 0.25% for the temporary relief of the signs and symptoms of dry eye disease, which may include the management of dry eye disease flares. Any product that is developed for the temporary treatment of the signs and symptoms of dry eye disease could directly compete with KPI-121 0.25%. There are several product candidates in preclinical and clinical development in the United States for the treatment of dry eye disease. If any of these product candidates is approved and such product candidate either treats the signs or symptoms of dry eye disease or reduces the frequency of flares in dry eye patients, it could reduce the overall market opportunity for KPI-121 0.25%. These product candidates are being developed by pharmaceutical companies, biotechnology companies, and specialty

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pharmaceutical and generic drug companies of various sizes, such as Oyster Point Pharma's OC-01 and OC-02, ReGenTree's RGN-259, Aldeyra Therapeutics' reproxalap ophthalmic solution, Aurinia Pharmaceuticals' voclosporin ophthalmic solution and Surface Pharmaceutical's SURF-100 and SURF-200.

Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are more convenient or are less expensive than our products. Our competitors also may obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for ours, which could result in our competitors establishing a strong market position before we are able to enter the market.

In addition, our ability to compete may be affected in many cases by insurers or other third-party payors, particularly Medicare, seeking to encourage the use of generic products. Generic products are currently being used for certain of the indications that we are pursuing, and additional products are expected to become available on a generic basis over the coming years.

Many of the companies against which we are competing or which we may compete against in the future have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals and marketing approved products than we do. Mergers and acquisitions in the pharmaceutical and biotechnology industries may result in even more resources being concentrated among a smaller number of our competitors. Smaller and other early stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These third parties compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs. Given that we are developing products that utilize a known FDA-approved corticosteroid, our product and our product candidates, if approved, may face competition from generic and branded versions of existing drugs based on corticosteroids that are administered in a different manner.

If our contracted manufacturing facilities experience production issues for any reason, we may be unable to manufacture commercial quantities of our product or our product candidates for a substantial amount of time, which could have a material adverse effect on our business.

We rely on third-party contract manufacturers to manufacture commercial supplies of INVELTYS and KPI-121 0.25%. Specifically, we rely on the following: Catalent Pharma Solutions, LLC, or Catalent, to manufacture and supply to us a minimum amount of INVELTYS and KPI-121 0.25% for commercial use; Alliance Contract Pharma, LLC, or Alliance, for manufacturing bulk KPI-121 concentrates; and Chemo Iberica SA, or Chemo Iberica, to manufacture and supply to us a bulk supply of loteprednol etabonate, or LE. We expect to rely on third parties to manufacture clinical supplies of any other product candidates and commercial supplies of any other products, if and when approved for marketing by applicable regulatory authorities, as well as for packaging, serialization, storage, distribution and other production logistics. If these third parties do not successfully carry out their contractual duties, meet expected deadlines or manufacture our product or our product candidates in accordance with regulatory requirements, if there are disagreements between us and such parties, or if such parties are unable to expand capacities to support commercialization of our product or any of our product candidates for which we obtain marketing approval, we may not be able to complete, or may be delayed in producing sufficient product or product candidates to meet our supply requirements. These facilities may also be affected by natural disasters, such as floods or fire, or such facilities could face manufacturing issues, such as contamination or regulatory concerns following a regulatory inspection of such facility. In such instances, we may need to locate an appropriate replacement third-party relationship, which may not be readily available or on acceptable terms, or at all, which would cause additional delay and increased expense, including as a result of additional required FDA approvals, and may have a material adverse effect on our business.

Our third-party manufacturers are subject to inspection and approval by the FDA before we can commence the manufacture and sale of any of our products or product candidates, and thereafter subject to FDA inspection from time to time. Failure by our third-party manufacturers to pass such inspections and otherwise satisfactorily complete the FDA approval regimen with respect to our product or product candidates may result in regulatory actions such as the issuance of FDA Form 483 notices of observations, warning letters or injunctions or the loss of operating licenses. Depending on

the severity of any potential regulatory action, our clinical or commercial supply could be interrupted or limited, which could have a material adverse effect on our business.

We or our third-party manufacturers may also encounter shortages in the raw materials or active pharmaceutical ingredient necessary to produce our product candidates in the quantities needed for our clinical trials or, our product or our product candidates if approved, in sufficient quantities for commercialization or to meet an increase in demand, as a result of capacity constraints or delays or disruptions in the market for the raw materials or active pharmaceutical ingredient, including shortages caused by the purchase of such raw materials or active pharmaceutical ingredient by our competitors or others. The failure of us or our third-party manufacturers to obtain the raw materials or active pharmaceutical ingredient necessary to manufacture sufficient quantities of our product candidates, may have a material adverse effect on our business.

Product liability lawsuits against us could divert our resources and could cause us to incur substantial liabilities and to limit commercialization of INVELTYS and any other products that we may develop.

We face an inherent risk of product liability exposure related to the use of our product candidates that we develop in human clinical trials. We face an even greater risk as we commercialize INVELTYS or any other products that we may develop. If we cannot successfully defend ourselves against claims that our product candidates or products caused injuries, we will incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for INVELTYS and any other products that we may develop;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial participants;
- significant costs to defend the related litigation;
- substantial monetary awards to trial participants or patients;
- loss of revenue;
- reduced time and attention of our management to pursue our business strategy; and
- the inability to successfully commercialize INVELTYS and any other products that we may develop.

We currently hold \$15 million in product liability insurance coverage in the aggregate, with a per incident limit of \$15 million, which may not be adequate to cover all liabilities that we may incur. We may need to increase our insurance coverage if and as we commence commercialization of KPI-121 0.25% or any other product candidates for which we obtain marketing approval. Insurance coverage is increasingly expensive. We may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise.

Risks Related to Our Dependence on Third Parties

We rely, and expect to continue to rely, on third parties to conduct our clinical trials, and those third parties may not perform satisfactorily, including failing to meet deadlines for the completion of such trials.

We rely on third parties, such as clinical research organizations, or CROs, clinical data management organizations, medical institutions and clinical investigators, in conducting our clinical trials, including STRIDE 3, and expect to continue to rely on such parties to conduct clinical trials of any product candidate that we develop. We or these third parties may terminate their engagements with us at any time for a variety of reasons, including a failure to perform

by the third parties. If we need to enter into alternative arrangements, that could delay our product development activities.

Our reliance on these third parties for clinical development activities reduces our control over these activities but does not relieve us of our responsibilities. For example, we remain responsible for ensuring that each of our clinical trials is conducted in accordance with the general investigational plan and protocols for the trial. Moreover, the FDA requires us to comply with standards, commonly referred to as Good Clinical Practices for conducting, recording and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the rights, integrity and confidentiality of trial participants are protected. We also are required to register ongoing clinical trials and post the results of completed clinical trials on a government-sponsored database, ClinicalTrials.gov, within specified timeframes. Failure to do so can result in fines, adverse publicity and civil and criminal sanctions.

If these third parties do not successfully carry out their contractual duties, meet expected deadlines or conduct our clinical trials in accordance with regulatory requirements or our stated protocols, we will not be able to obtain, or may be delayed in obtaining, marketing approvals for our product candidates and will not be able to, or may be delayed in our efforts to, successfully commercialize our product candidates. Furthermore, these third parties may also have relationships with other entities, some of which may be our competitors.

We also rely on other third parties to store and distribute drug supplies for our clinical trials. Any performance failure on the part of our distributors could delay clinical development or marketing approval of our product candidates or commercialization of our products, producing additional losses and depriving us of potential product revenue.

We contract with third parties for the manufacture of INVELTYS and KPI-121 0.25% for commercialization and for clinical trials and commercialization of any of our other existing and any future product candidates. This reliance on third parties increases the risk that we will not have sufficient quantities of our product candidates or products or such quantities at an acceptable cost, which could delay, prevent or impair our development or commercialization efforts.

We do not own or operate manufacturing facilities for the production of commercial quantities of INVELTYS and clinical or commercial quantities of KPI-121 0.25% or any other product candidates. We rely on Catalent to manufacture and supply to us a minimum amount of INVELTYS and KPI-121 0.25% for commercial use; Alliance for manufacturing bulk KPI-121 concentrates, and Chemo Iberica to manufacture and supply to us a bulk supply of LE. We expect to rely on such third-party manufacturers to manufacture commercial supplies of all of our products and clinical supplies of any other product candidates if and when approved for marketing by applicable regulatory authorities. Our current and anticipated future dependence upon others for the manufacture of INVELTYS or any other product and KPI-121 0.25% and any other product candidate that we develop may adversely affect our future profit margins and our ability to commercialize any products that receive marketing approval on a timely and competitive basis. In addition, any performance failure on the part of our existing or future manufacturers could delay clinical development or marketing approval.

To date, we have obtained materials for KPI-121 for our clinical trials and the commercialization of INVELTYS from third-party manufacturers, including Catalent and Alliance. We have supply agreements in place with these contract manufacturers to provide commercial supply. We obtain the active pharmaceutical ingredient for KPI-121 from Chemo Iberica, a third-party active pharmaceutical ingredient, or API, manufacturer. While we have long-term commercial supply agreements with these third-party manufacturers, if these suppliers do not perform as we expect, we may be required to replace one or more suppliers. Although we believe that there are a number of potential long-term replacements to our suppliers, we may incur added costs and delays in identifying and qualifying any such replacements.

The FDA maintains strict requirements governing the manufacturing process. When a manufacturer seeks to modify or make even seemingly minor changes to that process, the FDA may require the applicant to conduct a comparability study that evaluates the potential differences in the product resulting from the change in the manufacturing process. The FDA has issued several rounds of guidance on this point. In connection with any application for approval to market KPI-121 0.25% or other product candidates in the United States, we may be required to conduct a comparability study if the product we intend to market is supplied by a manufacturer different from the one who supplied the product

evaluated in our clinical studies. Delays in designing and completing this study to the satisfaction of the FDA could delay or preclude our development and commercialization plans and thereby limit our revenues and growth.

Reliance on third-party manufacturers entails additional risks, including:

- INVELTYS, KPI-121 0.25% and any other product that we develop may compete with other product candidates and products for access to a limited number of suitable manufacturing facilities that operate under current good manufacturing practices, or cGMP, regulations;
- reliance on the third party for regulatory compliance and quality assurance;
- the possible breach of the manufacturing agreement by the third party;
- the possible misappropriation of our proprietary information, including our trade secrets and know-how; and
- the possible termination or nonrenewal of the agreement by the third party at a time that is costly or inconvenient for us.

Third-party manufacturers may not be able to comply with cGMP regulations or similar regulatory requirements outside the United States. Our failure, or the failure of our third-party manufacturers, to comply with applicable regulations could result in sanctions being imposed on us, including clinical holds, fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of product candidates or products, operating restrictions and criminal prosecutions, any of which could significantly and adversely affect supplies of our products and harm our business and results of operations.

Any products that we may develop may compete with other product candidates and products for access to manufacturing facilities. There are a limited number of manufacturers that operate under cGMP regulations and that might be capable of manufacturing for us. We were previously required to change our third-party manufacturer when the manufacturer was purchased by a third party and exited the contract manufacturing business. The process of changing manufacturers can cause substantial time delays, and if we are required to change our manufacturer again in the future, it may delay our planned clinical trials or development timeline.

Any performance failure on the part of our existing or future manufacturers could delay clinical development or marketing approval. We do not currently have arrangements in place for redundant supply for bulk drug substances. If any one of our current contract manufacturers cannot perform as agreed, we may be required to replace that manufacturer. Although we believe that there are several potential alternative manufacturers who could manufacture our product candidates, we may incur added costs and delays in identifying and qualifying any such replacement.

Our current and anticipated future dependence upon others for the manufacture of INVELTYS or our product candidates may adversely affect our future profit margins and our ability to commercialize any medicines that receive marketing approval on a timely and competitive basis.

We may enter into collaborations with third parties for the development or commercialization of our product candidates. If our collaborations are not successful, we may not be able to capitalize on the market potential of these product candidates.

We expect to utilize a variety of types of collaboration, distribution and other marketing arrangements with third parties to develop and commercialize INVELTYS or any of our product candidates, including KPI-121 0.25%, for which we obtain marketing approval in markets outside the United States. For example, we may utilize a variety of collaboration, distribution and other marketing arrangements with one or more third parties to facilitate commercialization of KPI-121 0.25% outside the United States. We also may enter into arrangements with third parties to perform these services in the United States to enhance our own sales, marketing and distribution capabilities in the

United States or if we determine that such third-party arrangements are otherwise beneficial. We also may seek third-party collaborators for development and commercialization of our product candidates. We may also consider potential collaborative partnership opportunities prior to initiating IND-enabling studies on KPI-285 or any other product candidates we develop through our rTKI program. Our likely collaborators for any sales, marketing, distribution, development, licensing or broader collaboration arrangements include large and mid-size pharmaceutical companies, regional and national pharmaceutical companies and biotechnology companies. We are not currently party to any such arrangement. However, if we do enter into any such arrangements with any third parties in the future, we will likely have limited control over the amount and timing of resources that our collaborators dedicate to the development or commercialization of our product candidates. Our ability to generate revenues from these arrangements will depend on our collaborators' abilities and efforts to successfully perform the functions assigned to them in these arrangements.

Collaborations that we enter into may pose a number of risks, including the following:

- collaborators have significant discretion in determining the amount and timing of efforts and resources that they will apply to these collaborations;
- collaborators may not perform their obligations as expected;
- collaborators may not pursue development of our product candidates or may elect not to continue or renew development programs based on results of clinical trials or other studies, changes in the collaborators' strategic focus or available funding, or external factors, such as an acquisition, that divert resources or create competing priorities;
- collaborators may not pursue commercialization of our product candidates that receive marketing approval or may elect not to continue or renew commercialization programs based on changes in the collaborators' strategic focus or available funding, or external factors, such as an acquisition, that divert resources or create competing priorities;
- collaborators may delay clinical trials, provide insufficient funding for a clinical trial program, stop a clinical trial or abandon a product candidate, repeat or conduct new clinical trials or require a new formulation of a product candidate for clinical testing;
- collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with our products or product candidates if the collaborators believe that competitive products are more likely to be successfully developed or can be commercialized under terms that are more economically attractive than ours;
- product candidates discovered in collaboration with us may be viewed by our collaborators as competitive with their own products or product candidates, which may cause collaborators to cease to devote resources to the commercialization of our product candidates;
- a collaborator with marketing and distribution rights to one or more of our products or product candidates that achieve regulatory approval may not commit sufficient resources to the marketing and distribution of such product or products;
- 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 divert management attention and resources, be time-consuming and expensive;

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- collaborators may not properly maintain or defend our intellectual property rights or may use our proprietary information in such a way as to invite litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to potential litigation;
- collaborators may infringe the intellectual property rights of third parties, which may expose us to litigation and potential liability; and
- collaborations may be terminated for the convenience of the collaborator and, if terminated, we could be required to raise additional capital to pursue further development or commercialization of the applicable product candidates.

Collaboration agreements may not lead to development or commercialization of product candidates in the most efficient manner, or at all. If any collaborations that we enter into do not result in the successful development and commercialization of products or if one of our collaborators terminates its agreement with us, we may not receive any future research funding or milestone or royalty payments under the collaboration. If we do not receive the funding we expect under these agreements, our development of our product candidates could be delayed and we may need additional resources to develop our product candidates. All of the risks relating to product development, regulatory approval and commercialization described herein also apply to the activities of our collaborators.

Additionally, subject to its contractual obligations to us, if a collaborator of ours were to be involved in a business combination, it might de-emphasize or terminate the development or commercialization of any product candidate licensed to it by us. If one of our collaborators terminates its agreement with us, we may find it more difficult to attract new collaborators and our perception in the business and financial communities could be harmed.

If we are not able to establish collaborations, we may have to alter our development and commercialization plans and our business could be adversely affected.

For some of our product candidates, we may decide to collaborate with pharmaceutical or biotechnology companies for the development of our product candidates and the commercialization of our products or the potential commercialization of our product candidates. We face significant competition in seeking appropriate collaborators. Whether 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 subject product candidate, the costs and complexities of manufacturing and delivering such product candidate to patients, the potential of competing products, the existence of uncertainty with respect to our ownership of technology, which can exist if there is a challenge to such ownership without regard to the merits of the challenge, and industry and market conditions generally. The collaborator may also consider alternative product candidates or technologies for similar indications that may be available to collaborate on and whether such a collaboration could be more attractive than the one with us for our product or product candidate. 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.

If we are unable to reach agreements with suitable collaborators on a timely basis, on acceptable terms, or at all, we may have to curtail the development of a product candidate, reduce or delay its development program or one or more of our other development programs, delay the commercialization of a product or a product candidate or reduce the scope of any sales or marketing activities, or increase our expenditures and undertake development or commercialization activities at our own expense. If we elect to fund and undertake development or commercialization activities on our own, we may need to obtain additional expertise and additional capital, which may not be available to us on acceptable terms or at all. If we fail to enter into collaborations and do not have sufficient funds or expertise to undertake the necessary development and commercialization activities, we may not be able to further develop our product candidates or bring them to market or continue to develop our product platform.

Risks Related to Our Intellectual Property

We may be unable to obtain and maintain patent protection for our technology, products and product candidates, or the scope of the patent protection obtained may not be sufficiently broad or enforceable, such that our competitors could develop and commercialize technology, products and product candidates similar or identical to ours, and our ability to successfully commercialize our technology, products and product candidates may be impaired.

Our success depends in large part on our ability to obtain and maintain patent protection in the United States and other countries with respect to our proprietary technology, products and product candidates. We have sought to protect our proprietary position by filing in the United States and in certain foreign jurisdictions patent applications related to our novel technologies, products and product candidates.

The patent prosecution process is expensive and time-consuming, and we may not have filed, maintained, or prosecuted and may not be able to file, maintain and prosecute all necessary or desirable patents or patent applications at a reasonable cost or in a timely manner. We may also fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection.

The patent position of pharmaceutical, biotechnology, and medical device companies generally is highly uncertain, involves complex legal and factual questions and has in recent years been the subject of much litigation. As a result, the issuance, scope, validity, enforceability and commercial value of our patent rights are highly uncertain. Our pending and future patent applications may fail to result in issued patents in the United States or in other foreign countries which protect our technology, products or product candidates, or which effectively prevent others from commercializing competitive technologies and products. In addition, the laws of foreign countries may not protect our rights to the same extent as the laws of the United States, and the standards applied by the U.S. Patent and Trademark Office and foreign patent offices in granting patents are not always applied uniformly or predictably. For example, unlike patent law in the United States, European patent law precludes the patentability of methods of treatment of the human body and imposes substantial restrictions on the scope of claims it will grant if broader than specifically disclosed embodiments. Publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, or in some cases not at all. Therefore, we cannot be certain whether we or our licensors were the first to make the inventions claimed in our owned or licensed patents or pending patent applications, or that we or our licensors were the first to file for patent protection of such inventions. Databases for patents and publications, and methods for searching them, are inherently limited so we may not know the full scope of all issued and pending patent applications. As a result, the issuance, scope, validity, enforceability, and commercial value of our patent rights are uncertain. Our pending and future patent applications may not result in patents being issued which protect our technology, products or product candidates, in whole or in part, or which effectively prevent others from commercializing competitive technologies, products and product candidates. In particular, during prosecution of any patent application, the issuance of any patents based on the application may depend upon our ability to generate additional preclinical or clinical data that support the patentability of our proposed claims. We may not be able to generate sufficient additional data on a timely basis, or at all. Moreover, changes in either the patent laws or interpretation of the patent laws in the United States and other countries may diminish the value of our patents or narrow the scope of our patent protection.

Even if our owned and licensed patent applications issue as patents, they may not issue in a form that will provide us with any meaningful protection for our proprietary technology, products and product candidates, prevent competitors from competing with us, or otherwise provide us with any competitive advantage. Our competitors may be able to circumvent our owned or licensed patents by developing similar or alternative technologies, products or product candidates in a non-infringing manner. In particular, a competitor may develop an approach to deliver drugs through the mucus layer to the underlying target tissue that uses a different approach than our AMPPLIFY technology, and therefore may not infringe on our patent rights.

The issuance of a patent is not conclusive as to its inventorship, ownership, scope, validity, or enforceability, and our owned and licensed patents may be challenged in the courts or patent offices in the United States and abroad. Such challenges may result in loss of exclusivity or in patent claims being narrowed, invalidated or held unenforceable, in whole or in part, which could limit our ability to stop others from using or commercializing similar or identical

technology, products or product candidates, or limit the duration of the patent protection of our technology, products and product candidates. Given the amount of time required for the development, testing, and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. As a result, our patent portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours.

Recent patent reform legislation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents.

On September 16, 2011, Leahy-Smith America Invents Act, or the Leahy-Smith Act, was signed into law. The Leahy-Smith Act includes a number of significant changes to United States patent law. These include provisions that affect the way patent applications are prosecuted and may also affect patent litigation. The United States Patent Office recently developed new regulations and procedures to govern administration of the Leahy-Smith Act, and many of the substantive changes to patent law associated with the Leahy-Smith Act, and in particular, the first to file provisions, only became effective on March 16, 2013. The first to file provisions limit the rights of an inventor to patent an invention if not the first to file an application for patenting that invention, even if such invention was the first invention. Accordingly, it is not clear what, if any, impact the Leahy-Smith Act will have on the operation of our business. However, the Leahy-Smith Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, which could have a material adverse effect on our business, financial condition, results of operations and prospects. For example, the Leahy-Smith Act provides a new administrative tribunal known as the Patent Trial and Appeals Board, or PTAB, that provides a venue for companies to challenge the validity of competitor patents at a cost that is much lower than district court litigation and on timelines that are much faster. Although it is not clear what, if any, long term impact the PTAB proceedings will have on the operation of our business, the initial results of patent challenge proceedings before the PTAB since its inception in 2013 have resulted in the invalidation of many U.S. patent claims. The availability of the PTAB as a lower-cost, faster and potentially more potent tribunal for challenging patents could therefore increase the likelihood that our own patents will be challenged, thereby increasing the uncertainties and costs of maintaining, defending and enforcing them.

If we are not able to obtain patent term extension in the United States under the Hatch-Waxman Act and in foreign countries under similar legislation, thereby potentially extending the term of our marketing exclusivity for our products or product candidates, our business may be materially harmed.

Depending upon the timing, duration, and specifics of FDA marketing approval of our product candidates, one of the U.S. patents covering each of such product candidates or the use thereof may be eligible for up to five years of patent term extension under the Hatch-Waxman Act. The Hatch-Waxman Act allows a maximum of one patent to be extended per FDA approved product as compensation for the patent term lost during the FDA regulatory review process. A patent term extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval and only those claims covering such approved drug product, a method for using it or a method for manufacturing it may be extended. We do not expect the U.S. patents covering INVELTYS to be eligible for patent term extension due to this limitation. Patent term extension also may be available in certain foreign countries upon regulatory approval of our product candidates. Nevertheless, we may not be able to seek or be granted patent term extension either in the United States or in any foreign country because of, for example, failing to exercise due diligence during the testing phase or regulatory review process, failing to apply within applicable deadlines, failing to apply prior to expiration of relevant patents, or otherwise failing to satisfy applicable requirements. Moreover, the term of extension, as well as the scope of patent protection during any such extension, afforded by the governmental authority could be less than we request.

If we are unable to obtain patent term extension or restoration, or the term of any such extension is less than we request, the period during which we will have the right to exclusively market our product may be shortened and our competitors may obtain approval of competing products following our patent expiration sooner, and our revenue could be reduced, possibly materially.

It is possible that we will not obtain patent term extension under the Hatch-Waxman Act for a U.S. patent covering products or one of our product candidates even where that patent is eligible for patent term extension, or if we obtain such an extension, it may be for a shorter period than we had sought. Further, for our licensed patents, we may not have the right to control prosecution, including filing with the U.S. Patent and Trademark Office, a petition for patent term extension under the Hatch-Waxman Act. Thus, if one of our licensed patents is eligible for patent term extension under the Hatch-Waxman Act, we may not be able to control whether a petition to obtain a patent term extension is filed, or obtained, from the U.S. Patent and Trademark Office.

Also, there are detailed rules and requirements regarding the patents that may be submitted to the FDA for listing in the Approved Drug Products with Therapeutic Equivalence Evaluations, or the Orange Book. We may be unable to obtain patents covering our product candidates that contain one or more claims that satisfy the requirements for listing in the Orange Book. Even if we submit a patent for listing in the Orange Book, the FDA may decline to list the patent, or a manufacturer of generic drugs may challenge the listing. If one of our product candidates is approved and a patent covering that product candidate is not listed in the Orange Book, a manufacturer of generic drugs would not have to provide advance notice to us of any Abbreviated New Drug Application filed with the FDA to obtain permission to sell a generic version of such product candidate.

We may become involved in lawsuits to protect or enforce our patents or other intellectual property, which could be expensive, time-consuming and unsuccessful.

Competitors and other third parties may infringe, misappropriate or otherwise violate our owned and licensed patents, trade secrets, or other intellectual property. As a result, to counter infringement, misappropriation or unauthorized use, we may be required to file infringement or misappropriation claims or other intellectual property related proceedings, which can be expensive and time-consuming. Any claims we assert against perceived infringers could provoke these parties to assert counterclaims against us alleging that we infringe their patents or that our asserted patents are invalid. In addition, in a patent infringement or other intellectual property related proceeding, a court may decide that a patent of ours is invalid or unenforceable, in whole or in part, construe the patent's claims narrowly or refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question. An adverse result in any litigation proceeding could put one or more of our patents at risk of being invalidated, held unenforceable or interpreted narrowly, and could put any of our patent applications at risk of not yielding an issued patent. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information or trade secrets could be compromised by disclosure during this type of litigation.

We may be subject to a third-party preissuance submission of prior art to the U.S. Patent and Trademark Office, or become involved in other contested proceedings such as opposition, derivation, reexamination, *inter partes* review, post-grant review, or interference proceedings in the United States or elsewhere, challenging our patent rights or the patent rights of others. An adverse determination in any such submission, proceeding or litigation could reduce the scope of, or invalidate, our patent rights, allow third parties to commercialize our technology or product candidates and compete directly with us, without payment to us, or result in our inability to manufacture or commercialize products without infringing third-party patent rights. In addition, if the breadth or strength of protection provided by our patents and patent applications is threatened, it could dissuade companies from collaborating with us to license, develop or commercialize current or future product candidates.

In the United States, the FDA does not prohibit clinicians from prescribing an approved product for uses that are not described in the product's labeling. Although use of a product directed by off-label prescriptions may infringe our method-of-treatment patents, the practice is common across medical specialties, particularly in the United States, and such infringement is difficult to detect, prevent, or prosecute.

Third parties may initiate legal proceedings alleging that we are infringing, misappropriating or otherwise violating their intellectual property rights, the outcome of which would be uncertain and could have a material adverse effect on the success of our business.

Our commercial success depends upon our ability to develop, manufacture, market, and sell INVELTYS and our product candidates, including KPI-121 0.25%, and use our proprietary technologies without infringing, misappropriating or otherwise violating the intellectual property and other proprietary rights of third parties. There is a considerable amount of intellectual property litigation in the biotechnology and pharmaceutical industries. We may become party to, or threatened with, infringement litigation claims regarding our products, product candidates and technology, including claims from competitors or from non-practicing entities that have no relevant product revenue and against whom our own patent portfolio may have no deterrent effect. Moreover, we may become party to future adversarial proceedings or litigation regarding our patent portfolio or the patents of third parties. Such proceedings could also include contested post-grant proceedings such as oppositions, *inter partes* review, reexamination, interference, or derivation proceedings before the U.S. Patent and Trademark Office or foreign patent offices.

The legal threshold for initiating litigation or contested proceedings is low, so that even lawsuits or proceedings with a low probability of success might be initiated and require significant resources to defend. Litigation and contested proceedings can also be expensive and time-consuming, and our adversaries in these proceedings may have the ability to dedicate substantially greater resources to prosecuting these legal actions than we can. The risks of being involved in such litigation and proceedings may increase as our product candidates near commercialization and as we gain the greater visibility associated with being a public company. Third parties may assert infringement claims against us based on existing patents or patents that may be granted in the future. We may not be aware of all such intellectual property rights potentially relating to our products or product candidates and their uses. Thus, we do not know with certainty that INVELTYS or any of our product candidates, including KPI-121 0.25%, or our development and commercialization thereof, do not and will not infringe or otherwise violate any third party's intellectual property.

If we are found to infringe, misappropriate or otherwise violate a third party's intellectual property rights, we could be required to obtain a license from such third party to continue developing, manufacturing, marketing and selling our products, product candidates and technology. However, we may not be able to obtain any required license on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be non-exclusive, thereby giving our competitors access to the same technologies licensed to us and could require us to make substantial licensing and royalty payments. We could be forced, including by court order, to cease commercializing the infringing technology, products or product candidates. In addition, we could be found liable for monetary damages, including treble damages and attorneys' fees if we are found to have willfully infringed a patent and could be forced to indemnify our customers or collaborators. A finding of infringement could also result in an injunction that prevents us from commercializing our products or product candidates or forces us to cease some of our business operations, which could materially harm our business. In addition, we may be forced to redesign our product candidates, seek new regulatory approvals and indemnify third parties pursuant to contractual agreements. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar negative impact on our business.

Obtaining and maintaining patent protection depends on compliance with various procedural, document submission, 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, renewal and annuity fees on any issued patent must be paid to the U.S. Patent and Trademark Office and foreign patent agencies in several stages or annually over the lifetime of our owned and licensed patents and patent applications. The U.S. Patent and Trademark Office and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. In certain circumstances, we rely on our licensing partners to pay these fees to, or comply with the procedural and documentary rules of, the relevant patent agency. While an inadvertent lapse can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, 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. Non-compliance events that could result in abandonment or lapse of a patent or patent application include failure to respond to official actions within prescribed time limits, non-payment of

fees and failure to properly legalize and submit formal documents. If we or our licensors fail to maintain the patents and patent applications covering our product candidates, it would have a material adverse effect on our business.

INVELTYS, KPI-121 0.25% and certain aspects of our AMPPLIFY technology are protected by patents exclusively licensed from other companies or institutions. If these third parties terminate their agreements with us or fail to maintain or enforce the underlying patents, or we otherwise lose our rights to these patents, our competitive position and our market share in the markets for any of our approved products will be harmed.

A substantial portion of our patent portfolio is in-licensed. As such, we are a party to license agreements and certain aspects of our business depend on patents and/or patent applications owned by other companies or institutions. In particular, we hold exclusive licenses for patent families relating to INVELTYS and our product candidates, including KPI-121 0.25%, and some aspects of our AMPPLIFY technology. While we control patent prosecution of the licensed patent families relating to INVELTYS and KPI-121 0.25%, for the remainder of the patent families subject to our exclusive license agreement with JHU that relate to our AMPPLIFY technology, JHU retains control of patent prosecution. Our rights with respect to in-licensed patents and patent applications may be lost if the applicable license agreement expires or is terminated. We are likely to enter into additional license agreements to in-license patents and patent applications as part of the development of our business in the future, under which we may not retain control of the preparation, filing, prosecution, maintenance, enforcement and defense of such patents. If we are unable to maintain these patent rights for any reason, our ability to develop and commercialize our products or product candidates could be materially harmed.

Our licensors may not successfully prosecute certain patent applications, the prosecution of which they control, under which we are licensed and on which our business depends. Even if patents issue from these applications, our licensors may fail to maintain these patents, may decide not to pursue litigation against third-party infringers, may fail to prove infringement, or may fail to defend against counterclaims of patent invalidity or unenforceability.

Risks with respect to parties from whom we have obtained intellectual property rights may also arise out of circumstances beyond our control. In spite of our best efforts, our licensors might conclude that we have materially breached our intellectual property agreements and might therefore terminate the intellectual property agreements, thereby removing our ability to market products covered by these intellectual property agreements. If our intellectual property agreements are terminated, or if the underlying patents fail to provide the intended market exclusivity, competitors would have the freedom to seek regulatory approval of, and to market, products similar or identical to ours. Moreover, if our intellectual property agreements are terminated, our former licensors and/or assignors may be able to prevent us from utilizing the technology covered by the licensed or assigned patents and patent applications. This could have a material adverse effect on our competitive business position and our financial condition, results of operations and our business prospects.

Some intellectual property which we own or have licensed may have been discovered through government funded programs and thus may be subject to federal regulations such as “march-in” rights, certain reporting requirements, and a preference for United States industry. Compliance with such regulations may limit our exclusive rights, subject us to expenditure of resources with respect to reporting requirements, and limit our ability to contract with non-U.S. manufacturers.

Some of the intellectual property rights we own or have licensed have been generated through the use of United States government funding and may therefore be subject to certain federal regulations. For example, certain aspects of our AMPPLIFY technology as well as certain aspects of our patents that use LE as an active ingredient were developed using United States government funds. As a result, the United States government may have certain rights to intellectual property embodied in our current or future products and product candidates based on our AMPPLIFY technology or that use LE as an active ingredient pursuant to the Bayh-Dole Act of 1980. These United States government rights in certain inventions developed under a government-funded program include a non-exclusive, non-transferable, irrevocable worldwide license to use inventions for any governmental purpose. In addition, the United States government has the right to require us to grant exclusive, partially exclusive, or non-exclusive licenses to any of these inventions to a third party if it determines that: (i) adequate steps have not been taken to commercialize the invention; (ii) government action is necessary to meet public health or safety needs; or (iii) government action is necessary to meet requirements for public

use under federal regulations (also referred to as “march-in rights”). The United States government also has the right to take title to these inventions if we fail to disclose the invention to the government and fail to file an application to register the intellectual property within specified time limits. In addition, the United States government may acquire title to these inventions in any country in which a patent application is not filed within specified time limits. Intellectual property generated under a government funded program is also subject to certain reporting requirements, compliance with which may require us to expend substantial resources. In addition, the United States government requires that any products embodying the subject invention or produced through the use of the subject invention be manufactured substantially in the United States. The manufacturing preference requirement can be waived if the owner of the intellectual property can show that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the United States or that under the circumstances domestic manufacture is not commercially feasible. This preference for United States manufacturers may limit our ability to contract with non-U.S. product manufacturers for products covered by such intellectual property. Any exercise by the government of any of the foregoing rights could harm our competitive position, business, financial condition, results of operations and prospects.

If we fail to comply with our obligations in our intellectual property licenses and funding arrangements with third parties, we could lose rights that are important to our business.

Our license agreement with JHU, under which we license certain of our patent rights and a significant portion of the technology for INVELTYS and our product candidates, including KPI-121 0.25%, imposes royalty and other financial obligations on us and other substantial performance obligations. We also may enter into additional licensing and funding arrangements with third parties that may impose diligence, development and commercialization timelines and milestone payment, royalty, insurance and other obligations on us. If we fail to comply with our obligations under current or future license and collaboration agreements, our counterparties may have the right to terminate these agreements, in which event we might not be able to develop, manufacture or market any product or product candidate that is covered by these agreements or may face other penalties under the agreements. Such an occurrence could diminish the value of our products or product candidates. Termination of these agreements or reduction or elimination of our rights under these agreements may result in our having to negotiate new or reinstated agreements with less favorable terms, or cause us to lose our rights under these agreements, including our rights to important intellectual property or technology.

In addition, it is possible that JHU may conclude that we have materially breached the JHU licensing agreement and might therefore terminate the agreement, thereby removing our ability to market products covered by our license agreement with JHU. If the JHU licensing agreement is terminated, or if the underlying patents fail to provide the intended market exclusivity, competitors would have the freedom to seek regulatory approval of, and to market, products similar or identical to ours. Moreover, if our license agreement with JHU is terminated, JHU and/or its assignors may be able to prevent us from utilizing the technology covered by the licensed or assigned patents and patent applications. If we breach the agreement (including by failing to meet our payment obligations) and do not adequately cure such breach, the rights in the technology licensed to us under the JHU license agreement will revert to JHU at no cost to JHU. This could have a material adverse effect on our competitive business position, our financial condition, our results of operations and our business prospects.

In addition, the agreements under which we currently license intellectual property or technology from third parties are complex, and certain provisions in such agreements may be susceptible to multiple interpretations. The resolution of any contract interpretation disagreement that may arise could narrow what we believe to be the scope of our rights to the relevant intellectual property or technology, or increase what we believe to be our financial or other obligations under the relevant agreement, either of which could have a material adverse effect on our business, financial condition, results of operations, and prospects. Moreover, if disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on commercially acceptable terms, we may be unable to successfully develop and commercialize the affected products or product candidates, which could have a material adverse effect on our business, financial conditions, results of operations, and prospects.

We may not be able to protect our intellectual property and proprietary rights throughout the world.

Filing, prosecuting, and defending patents on product candidates in all countries throughout the world would be prohibitively expensive, and the laws of foreign countries may not protect our rights to the same extent as the laws of the United States. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and, further, may export otherwise infringing products to territories where we have patent protection or licenses but enforcement is not as strong as that in the United States. These products may compete with our products, and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets, and other intellectual property protection, particularly those relating to biotechnology products, which could make it difficult for us to stop the infringement of our patents or marketing of competing products in violation of our intellectual property and proprietary rights generally. Proceedings to enforce our intellectual property and proprietary rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly, could put our patent applications at risk of not issuing, and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate, and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property and proprietary rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

Many countries have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In addition, many countries limit the enforceability of patents against government agencies or government contractors. In these countries, the patent owner may have limited remedies, which could materially diminish the value of such patent. If we or any of our licensors is forced to grant a license to third parties with respect to any patents relevant to our business, our competitive position may be impaired, and our business, financial condition, results of operations, and prospects may be adversely affected.

We may be subject to claims by third parties asserting that our employees or we have misappropriated their intellectual property, or claiming ownership of what we regard as our own intellectual property.

Many of our and our licensors' employees and contractors were previously employed at other biotechnology, medical device or pharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees and contractors do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that these individuals have used or disclosed intellectual property, including trade secrets or other proprietary information, of any such employee's former employer. Litigation may be necessary to defend against these claims.

In addition, while it is our policy to require our employees and contractors who may be involved in the development of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who in fact develops intellectual property that we regard as our own. Furthermore, we are unable to control whether our licensors have obtained similar assignment agreements from their own employees and contractors. Our and their assignment agreements may not be self-executing or may be breached, and we or our licensors may be forced to bring claims against third parties, or defend claims they may bring against us, to determine the ownership of what we regard as our intellectual property.

If we or our licensors fail in prosecuting or defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel which could have a material adverse effect on our competitive business position and prospects. Such intellectual property rights could be awarded to a third party, and we could be required to obtain a license from such third party to commercialize our technology or products, which may not

be available on commercially reasonable terms or at all. Even if we are successful in prosecuting or defending against such claims, litigation could result in substantial costs and be a distraction to management.

Intellectual property litigation or other legal proceedings relating to intellectual property could cause us to spend substantial resources and distract our personnel from their normal responsibilities.

Even if resolved in our favor, litigation or other legal proceedings relating to intellectual property claims may cause us to incur significant expenses, and could distract our technical and management personnel from their normal responsibilities. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing or distribution activities. We may not have sufficient financial or other resources to conduct such litigation or proceedings adequately. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources and may also have an advantage in such proceedings due to their more mature and developed intellectual property portfolios. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could have an adverse effect on our ability to compete in the marketplace.

If we are unable to protect the confidentiality of our trade secrets, our business and competitive position would be harmed.

In addition to seeking patents for our technology, our products and product candidates, we also rely on trade secrets, including unpatented know-how, technology and other proprietary information, to maintain our competitive position. We seek to protect these trade secrets, in part, by entering into non-disclosure and confidentiality agreements with parties who have access to them, such as our employees, corporate collaborators, outside scientific collaborators, contract manufacturers, consultants, advisors and other third parties. We also enter into confidentiality and invention or patent assignment agreements with our employees and consultants. Despite these efforts, any of these parties may breach the agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Detecting the disclosure or misappropriation of a trade secret and enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive and time-consuming, and the outcome is unpredictable. In addition, some courts inside and outside the United States are less willing or unwilling to protect trade secrets. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent them, or those to whom they communicate it, from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to or independently developed by a competitor, our competitive position would be harmed.

Risks Related to Regulatory Approval of Our Product Candidates and Other Legal Compliance Matters

If we are not able to obtain required regulatory approvals, we will not be able to commercialize our product candidates, and our ability to generate significant revenue will be materially impaired. The marketing approval process is expensive, time-consuming and uncertain. As a result, we cannot predict when or if we, or any collaborators we may have in the future, will obtain marketing approval to commercialize our product candidates.

Our product candidates, including KPI-121 0.25%, and the activities associated with their development and commercialization, including their design, testing, manufacture, safety, efficacy, recordkeeping, labeling, storage, approval, advertising, promotion, sale and distribution, are subject to comprehensive regulation by the FDA and other regulatory agencies in the United States and by comparable authorities in other countries. Failure to obtain marketing approval for a product candidate will prevent us from commercializing the product candidate.

On August 22, 2018, we received approval from the FDA to market INVELTYS in the United States, which is our first and only product candidate to receive marketing approval. We have not received approval to market KPI-121 0.25% or any other product candidate from regulatory authorities in any jurisdiction. In December 2018, the FDA accepted for filing our NDA for KPI-121 0.25% and has granted a target action date under PDUFA of August 15, 2019. We may not receive approval to commercialize KPI-121 0.25%. Based upon the recommendation of the FDA, we also

initiated an additional Phase 3 clinical trial, STRIDE 3, in the third quarter of 2018 evaluating KPI-121 0.25% for the temporary relief of the signs and symptoms of dry eye disease. We may determine to conduct additional Phase 3 trials for KPI-121 0.25% or to potentially expand the label of KPI-121 0.25% if we receive marketing approval for a narrower indication than we are targeting. In addition, we may never generate the necessary data or results required to obtain regulatory approval of KPI-121 0.25% or any other products with the market potential sufficient to enable us to achieve profitability. We have only limited experience in submitting and supporting the applications necessary to gain marketing approvals and have relied on, and expect to continue to rely on, third-party consultants and vendors to assist us in this process. Securing marketing approval requires the submission of extensive preclinical and clinical data and supporting information to regulatory authorities for each therapeutic indication to establish the product candidate's safety and efficacy. Securing marketing approval also requires the submission of information about the product manufacturing process to, and inspection of manufacturing facilities by, the regulatory authorities. The FDA or other regulatory authorities may determine that any product candidate that we develop is not effective, is only moderately effective or has undesirable or unintended side effects, toxicities or other characteristics that preclude our obtaining marketing approval or prevent or limit commercial use.

The process of obtaining marketing approvals, both in the United States and abroad, is expensive, may take many years, if approval is obtained at all, and can vary substantially based upon a variety of factors, including the type, complexity and novelty of the product candidates involved. Changes in marketing approval policies during the development period, changes in or the enactment of additional statutes or regulations, or changes in regulatory review for each submitted product application, may cause delays in the approval or rejection of an application. Regulatory authorities have substantial discretion in the approval process and may refuse to accept any application or may decide that our data are insufficient for approval and require additional preclinical, clinical or other studies. In addition, varying interpretations of the data obtained from preclinical and clinical testing could delay, limit or prevent marketing approval of a product candidate. Any marketing approval we ultimately obtain may be limited or subject to restrictions or post-approval commitments that render the approved product not commercially viable.

If we experience delays in obtaining approval or if we fail to obtain approval of KPI-121 0.25% or any other product candidate that we develop, the commercial prospects for such product candidate may be harmed and our ability to generate revenues will be materially impaired.

If the FDA does not conclude that KPI-121 0.25% satisfies the approval requirements under Section 505(b)(2) of the Federal Food Drug and Cosmetic Act, or if the requirements KPI-121 0.25% under Section 505(b)(2) are not as we expect, the approval for KPI-121 0.25% may take longer, cost more and entail greater complications and risks than anticipated, and may not be achieved.

The Drug Price Competition and Patent Term Restoration Act of 1984, also known as the Hatch-Waxman Act, added Section 505(b)(2) to the Federal Food, Drug and Cosmetic Act, or FDCA. Section 505(b)(2) permits the filing of an NDA where at least some of the information required for approval comes from studies that were not conducted by or for the applicant, and for which the applicant has not received a right of reference, which could expedite the development program for KPI-121 0.25% by potentially decreasing the amount of preclinical and clinical data that we would need to generate in order to obtain FDA approval.

We are seeking FDA approval of KPI-121 0.25% through the Section 505(b)(2) regulatory pathway. The FDA previously approved INVELTYS through the Section 505(b)(2) regulatory pathway. If the FDA does not allow us to pursue the Section 505(b)(2) regulatory pathway as anticipated, we may need to conduct additional non-clinical and clinical trials, provide additional data and information and meet additional standards for regulatory approval. If this were to occur, the time and financial resources required to obtain FDA approval for KPI-121 0.25%, and complications and risks associated with approval of KPI-121 0.25%, would likely substantially increase. Even if we are allowed to pursue the Section 505(b)(2) pathway to FDA approval, we cannot assure you that KPI-121 0.25% will receive the requisite approvals for commercialization.

In addition, notwithstanding the approval of a number of products by the FDA under Section 505(b)(2) over the last few years, certain competitors and others have objected to the FDA's interpretation of Section 505(b)(2). If the FDA's interpretation of Section 505(b)(2) is successfully challenged, the FDA may be required to change its 505(b)(2)

policies and practices, which could delay or even prevent the FDA from approving any NDA that we submit under Section 505(b)(2), including our NDA for KPI-121 0.25%. In addition, the pharmaceutical industry is highly competitive, and Section 505(b)(2) NDAs are subject to special requirements designed to protect the patent rights of sponsors of previously approved drugs that are referenced in a Section 505(b)(2) NDA. These requirements may give rise to patent litigation and to mandatory delays in approval of our NDAs for up to 30 months, depending on the outcome of any litigation. It is not uncommon for a manufacturer of an approved product to file a citizen petition with the FDA seeking to delay approval of, or impose additional approval requirements for, pending competing products. If successful, such petitions can significantly delay, or even prevent, the approval of the new product. However, even if the FDA ultimately denies such a petition, the FDA may substantially delay approval while it considers and responds to the petition. Thus, even if we are able to utilize the Section 505(b)(2) regulatory pathway, there is no guarantee this would ultimately lead to faster product development or earlier approval of KPI-121 0.25%.

Even if KPI-121 0.25% is approved under Section 505(b)(2), its approval may be subject to limitations on the indicated uses for which the products may be marketed or to other conditions of approval, or may contain requirements for costly post-marketing testing and surveillance to monitor the safety or efficacy of the products.

Failure to obtain marketing approval in foreign jurisdictions would prevent our product candidates from being marketed abroad.

In order to market and sell INVELTYS or our product candidates, including KPI-121 0.25%, in the European Union and many other jurisdictions, we or our potential third-party collaborators, must obtain separate marketing approvals and comply with numerous and varying regulatory requirements. The approval procedure varies among countries and can involve additional testing. Regulatory authorities outside the United States, in particular in the European Union, have not issued official guidance on the requirements for approval of a dry eye prescription medication. Our Phase 3 clinical trials of KPI-121 0.25% or any other product candidate may not be sufficient to support an application for marketing approval outside the United States.

The time required to obtain approval may differ substantially from that required to obtain FDA approval. The regulatory approval process outside the United States generally includes all of the risks associated with obtaining FDA approval. In addition, in many countries outside the United States, it is required that the product be approved for reimbursement before the product can be sold in that country. We or our potential collaborators may not obtain approvals from regulatory authorities outside the United States on a timely basis, if at all. Approval by the FDA does not ensure approval by regulatory authorities in other countries or jurisdictions, and approval by one regulatory authority outside the United States does not ensure approval by regulatory authorities in other countries or jurisdictions or by the FDA. However, a failure or delay in obtaining regulatory approval in one country may have a negative effect on the regulatory process in other countries. We may not be able to file for marketing approvals and may not receive necessary approvals to commercialize our products in any market, which could significantly and materially harm our business.

Additionally, on June 23, 2016, the electorate in the United Kingdom voted in favor of leaving the European Union, commonly referred to as Brexit. On March 29, 2017, the United Kingdom formally notified the European Union of its intention to withdraw pursuant to Article 50 of the Lisbon Treaty. Since a significant proportion of the regulatory framework in the United Kingdom is derived from European Union directives and regulations, the withdrawal could materially impact the regulatory regime with respect to the approval of our product candidates in the United Kingdom or the European Union. Any delay in obtaining, or an inability to obtain, any marketing approvals, as a result of Brexit or otherwise, would prevent us from commercializing our product candidates in the United Kingdom and/or the European Union and restrict our ability to generate revenue and achieve and sustain profitability. If any of these outcomes occur, we may be forced to restrict or delay efforts to seek regulatory approval in the United Kingdom and/or European Union for INVELTYS or our product candidates, which could significantly and materially harm our business. The United Kingdom has a period of a maximum of two years from the date of its formal notification to negotiate the terms of its withdrawal from, and future relationship with, the European Union. If no formal withdrawal agreement is reached between the United Kingdom and the European Union, then it is expected the United Kingdom's membership of the European Union will automatically terminate two years after the submission of the notification of the United Kingdom's intention to withdraw from the European Union. Discussions between the United Kingdom and the European Union focused on finalizing withdrawal issues and transition agreements are ongoing. However, limited progress to date in

these negotiations and ongoing uncertainty within the UK Government and Parliament sustains the possibility of the United Kingdom leaving the European Union on March 29, 2019 without a withdrawal agreement and associated transition period in place, which is likely to cause significant market and economic disruption.

The terms of approvals, ongoing regulations and post-marketing restrictions for our products may limit how we manufacture and market our products, which could materially impair our ability to generate revenue.

Once marketing approval has been granted, an approved product and its manufacturer and marketer are subject to ongoing review and extensive regulation. We, and any potential collaborators we may have in the future, must therefore comply with requirements concerning advertising and promotion for INVELTYS or for any of our products for which we or our collaborators obtain marketing approval. Promotional communications with respect to drug products and medical devices are subject to a variety of legal and regulatory restrictions and must be consistent with the information in the product's approved labeling. Thus, we are limited to promoting INVELTYS in accordance with its approved label and the accompanying label may limit the approved use of any other product for which we obtain marketing approval, which could limit sales of such product.

The FDA may also impose requirements for costly post-marketing testing and surveillance to monitor the safety or efficacy of the product, including the adoption and implementation of risk evaluation and mitigation strategies. The FDA closely regulates the post-approval marketing and promotion of drugs to ensure drugs are marketed only for the approved indications and in accordance with the provisions of the approved labeling and regulatory requirements. The FDA imposes stringent restrictions on manufacturers' communications regarding off-label use and if we do not restrict the marketing of our products only to their approved indications, we may be subject to enforcement action for off-label marketing. Violations of the FDCA relating to the promotion of prescription drugs or the promotion or manufacturing of drug products or medical devices may lead to investigations by the FDA, Department of Justice and state Attorneys General alleging violations of federal and state healthcare fraud and abuse laws, as well as state consumer protection laws.

In addition, later discovery of previously unknown adverse events or other problems with our products, manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may have various consequences, including:

- restrictions on such products, manufacturers or manufacturing processes;
- restrictions and warnings in the labeling and marketing of a product;
- restrictions on product distribution or use;
- requirements to conduct post-marketing clinical trials;
- warning or untitled letters;
- withdrawal of the products from the market;
- refusal to approve pending applications or supplements to approved applications that we submit;
- recall of products;
- fines, restitution or disgorgement of profits or revenue;
- suspension or withdrawal of marketing approvals;
- refusal to permit the import or export of our products;

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- product seizure; or
- injunctions or the imposition of civil or criminal penalties.

Non-compliance with European Union requirements or laws of other countries regarding safety monitoring or pharmacovigilance can also result in significant financial penalties. Similarly, failure to comply with the European Union's or other countries' requirements regarding the protection of personal information can lead to significant penalties and sanctions.

In addition, manufacturers of approved products and those manufacturers' facilities are required to comply with extensive FDA requirements, including ensuring that quality control and manufacturing procedures conform to cGMPs applicable to drug manufacturers or quality assurance standards applicable to medical device manufacturers, which include requirements relating to quality control and quality assurance as well as the corresponding maintenance of records and documentation and reporting requirements. We, our contract manufacturers, any contract manufacturers we may engage in the future, our future collaborators and their contract manufacturers will also be subject to other regulatory requirements, including submissions of safety and other post-marketing information and reports, registration and listing requirements, requirements regarding the distribution of samples to clinicians, recordkeeping, and costly post-marketing studies or clinical trials and surveillance to monitor the safety or efficacy of the product such as the requirement to implement a risk evaluation and mitigation strategy.

We may be subject to substantial penalties if we fail to comply with regulatory requirements or if we experience unanticipated problems with our products.

Under the CURES Act and the Trump Administration's regulatory reform initiatives, the FDA's policies, regulations and guidance may be revised or revoked and that could prevent, limit or delay regulatory approval of our product candidates, which would impact our ability to generate revenue.

In December 2016, the 21st Century Cures Act, or Cures Act, was signed into law. The Cures Act, among other things, is intended to modernize the regulation of drugs and spur innovation, but its ultimate implementation is unclear. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability, which would adversely affect our business, prospects, financial condition and results of operations.

We also cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative or executive action, either in the United States or abroad. For example, certain policies of the Trump administration may impact our business and industry. Namely, the Trump administration has taken several executive actions, including the issuance of a number of Executive Orders, that could impose significant burdens on, or otherwise materially delay, the FDA's ability to engage in routine regulatory and oversight activities such as implementing statutes through rulemaking, issuance of guidance, and review and approval of marketing applications. An under-staffed FDA could result in delays in the FDA's responsiveness or in its ability to review submissions or applications, issue regulations or guidance, or implement or enforce regulatory requirements in a timely fashion or at all. Moreover, on January 30, 2017, President Trump issued an Executive Order, applicable to all executive agencies, including the FDA, which requires that for each notice of proposed rulemaking or final regulation to be issued in fiscal year 2017, the agency shall identify at least two existing regulations to be repealed, unless prohibited by law. These requirements are referred to as the "two-for-one" provisions. This Executive Order includes a budget neutrality provision that requires the total incremental cost of all new regulations in the 2017 fiscal year, including repealed regulations, to be no greater than zero, except in limited circumstances. For fiscal years 2018 and beyond, the Executive Order requires agencies to identify regulations to offset any incremental cost of a new regulation and approximate the total costs or savings associated with each new regulation or repealed regulation. In interim guidance issued by the Office of Information and Regulatory Affairs within the Office of Management and Budget on February 2, 2017, the administration indicates that the "two-for-one" provisions may apply not only to agency regulations, but also to significant agency guidance documents. In addition, on February 24, 2017, President Trump issued an executive order directing each affected agency to designate an agency official as a "Regulatory Reform Officer" and establish a

“Regulatory Reform Task Force” to implement the two-for-one provisions and other previously issued executive orders relating to the review of federal regulations, however it is difficult to predict how these requirements will be implemented, and the extent to which they will impact the FDA’s ability to exercise its regulatory authority. If these executive actions impose constraints on the FDA’s ability to engage in oversight and implementation activities in the normal course, our business may be negatively impacted.

Inadequate funding for the FDA, the Securities and Exchange Commission and other government agencies could hinder their ability to hire and retain key leadership and other personnel, prevent new products and services from being developed or commercialized in a timely manner or otherwise prevent those agencies from performing normal business functions on which the operation of our business may rely, which could negatively impact our business.

The ability of the FDA to review and approve new products can be affected by a variety of factors, including government budget and funding levels, ability to hire and retain key personnel and accept the payment of user fees, and statutory, regulatory, and policy changes. Average review times at the agency have fluctuated in recent years as a result. In addition, government funding of the Securities and Exchange Commission, or the SEC, and other government agencies on which our operations may rely, including those that fund research and development activities is subject to the political process, which is inherently fluid and unpredictable.

Disruptions at the FDA and other agencies may also slow the time necessary for new drugs to be reviewed and/or approved by necessary government agencies, which would adversely affect our business. For example, over the last several years, the U.S. government has shut down several times and certain regulatory agencies, such as the FDA and the SEC, have had to furlough critical FDA, SEC and other government employees and stop critical activities. If a prolonged government shutdown occurs, it could significantly impact the ability of the FDA to timely review and process our regulatory submissions, which could have a material adverse effect on our business. Further, in our operations as a public company, future government shutdowns could impact our ability to access the public markets and obtain necessary capital in order to properly capitalize and continue our operations.

Our relationships with customers and third-party payors may be subject, directly or indirectly, to applicable anti-kickback, fraud and abuse, false claims, transparency, health information privacy and security, and other healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, contractual damages, reputational harm, administrative burdens and diminished profits and future earnings.

Healthcare providers, clinicians and third-party payors in the United States and elsewhere will play a primary role in the recommendation and prescription and use of INVELTYS and any product candidates for which we obtain marketing approval. Our future arrangements with third-party payors and customers may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we market, sell and distribute INVELTYS and any products for which we obtain marketing approval. In addition, we may be subject to transparency laws and patient privacy regulation by U.S. federal and state governments and by governments in foreign jurisdictions in which we conduct our business. The applicable federal, state and foreign healthcare laws and regulations that may affect our ability to operate include:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made under a federal healthcare program such as Medicare and Medicaid;
- federal civil and criminal false claims laws and civil monetary penalty laws, including the federal False Claims Act, which impose criminal and civil penalties, including civil whistleblower or *qui tam* actions, against individuals or entities for knowingly presenting, or causing to be presented, to the federal government, including the Medicare and Medicaid programs, claims for payment that are false or fraudulent or making a false statement to avoid, decrease or conceal an obligation to pay money to the federal government;

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- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which imposes criminal and civil liability for executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, and their respective implementing regulations, which imposes obligations, including mandatory contractual terms, on covered healthcare providers, health plans and healthcare clearinghouses, as well as their business associates, with respect to safeguarding the privacy, security and transmission of individually identifiable health information; and
- analogous state and foreign laws and regulations, 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 and foreign 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 clinicians 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.

If our operations are found to be in violation of any of the laws described above or any governmental regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines, individual imprisonment, integrity obligations, and the curtailment or restructuring of our operations. Any penalties, damages, fines, individual imprisonment, integrity obligations, exclusion from funded healthcare programs, or curtailment or restructuring of our operations could adversely affect our financial results. We are developing and implementing a corporate compliance program designed to ensure that we will market and sell any future products that we successfully develop from our product candidates in compliance with all applicable laws and regulations, but we cannot guarantee that this program will protect us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. If any such actions are instituted against us 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 fines or other sanctions.

Efforts to ensure that our 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 business practices may not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, including, without limitation, damages, fines, imprisonment, exclusion from participation in government funded healthcare programs, such as Medicare and Medicaid, and the curtailment or restructuring of our operations. If any of the clinicians or other healthcare providers or entities with whom we do or expect to do business is found to be not in compliance with applicable laws, it may be subject to criminal, civil or administrative sanctions, including exclusions from participation in government funded healthcare programs.

Recently enacted and future legislation may affect our ability to commercialize and the prices we obtain for any products that are approved in the United States or foreign jurisdictions.

In the United States and some foreign jurisdictions, there have been a number of legislative and regulatory changes and proposed changes regarding the healthcare system that could affect our ability to profitably sell or commercialize INVELTYS or any product candidate, including KPI-121 0.25%, for which we obtain marketing approval. The pharmaceutical industry has been a particular focus of these efforts and have been significantly affected by legislative initiatives. Current laws, as well as other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and in additional downward pressure on the price that we receive for any FDA approved product.

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In the United States, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, or the Medicare Modernization Act, changed the way Medicare covers and pays for pharmaceutical products. The legislation expanded Medicare coverage for drug purchases by the elderly and introduced a new reimbursement methodology based on average sales prices for clinician administered drugs. In addition, this legislation provided authority for limiting the number of drugs that will be covered in any therapeutic class. Cost reduction initiatives and other provisions of this legislation could decrease the coverage and price that we receive for any approved products. While the Medicare Modernization Act applies only to drug benefits for Medicare beneficiaries, private payors often follow Medicare coverage policy and payment limitations in setting their own reimbursement rates. Therefore, any reduction in reimbursement that results from the Medicare Modernization Act may result in a similar reduction in payments from private payors.

In March 2010, President Obama signed into law the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, or collectively the ACA. Among the provisions of the ACA of importance to our business, including, without limitation, our ability to commercialize and the prices we may obtain for any of our product candidates and that are approved for sale, are the following:

- an annual, nondeductible fee on any entity that manufactures or imports specified branded prescription drugs and biologic agents;
- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program;
- a new Medicare Part D coverage gap discount program, in which participating manufacturers must agree to offer 50% point-of-sale discounts off negotiated drug prices during the coverage gap period as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D;
- expansion of healthcare fraud and abuse laws, including the federal False Claims Act and the federal Anti-Kickback Statute, and the addition of new government investigative powers, and enhanced penalties for noncompliance;
- extension of manufacturers' Medicaid rebate liability;
- expansion of eligibility criteria for Medicaid programs; and
- expansion of the entities eligible for discounts under the Public Health Service pharmaceutical pricing program.

In addition, other legislative changes have been proposed and adopted since the ACA was enacted. These changes include the Budget Control Act of 2011, which, among other things, led to aggregate reductions to Medicare payments to providers of up to 2% per fiscal year that started in 2013 and, due to subsequent legislative amendments to the statute, will stay in effect through 2025 unless additional congressional action is taken, and the American Taxpayer Relief Act of 2012, which, among other things, reduced Medicare payments to several types of providers and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. These new laws may result in additional reductions in Medicare and other healthcare funding and otherwise affect the prices we may obtain for INVELTYS and for any of our product candidates for which we may obtain regulatory approval or the frequency with which INVELTYS or any product candidate is prescribed or used. Further, there have been several recent U.S. congressional inquiries and proposed state and federal legislation designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, reduce the costs of drugs under Medicare and reform government program reimbursement methodologies for drug products.

We expect that these healthcare reforms, as well as other healthcare reform measures that may be adopted in the future, may result in additional reductions in Medicare and other healthcare funding, more rigorous coverage criteria, new payment methodologies and additional downward pressure on the price that we receive for INVELTYS or any other

approved product and/or the level of reimbursement physicians receive for administering any approved product we might bring to market. Reductions in reimbursement levels may negatively impact the prices we receive or the frequency with which our products are prescribed or administered. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors.

Since enactment of the ACA, there have been numerous legal challenges and Congressional actions to repeal and replace provisions of the law. For example, with enactment of the Tax Cuts and Jobs Act of 2017, which was signed by the President on December 22, 2017, Congress repealed the “individual mandate.” The repeal of this provision, which requires most Americans to carry a minimal level of health insurance, will become effective in 2019. According to the Congressional Budget Office, the repeal of the individual mandate will cause 13 million fewer Americans to be insured in 2027 and premiums in insurance markets may rise. Further, each chamber of the Congress has put forth multiple bills designed to repeal or replace portions of the ACA. Although none of these measures has been enacted by Congress to date, Congress may consider other legislation to repeal and replace elements of the ACA. The Congress will likely consider other legislation to replace elements of the ACA, during the next Congressional session. It is possible that repeal and replacement initiatives, if enacted into law, could ultimately result in fewer individuals having health insurance coverage or in individuals having insurance coverage with less generous benefits. While the timing and scope of any potential future legislation to repeal and replace ACA provisions is highly uncertain in many respects, it is also possible that some of the ACA provisions that generally are not favorable for the research-based pharmaceutical industry could also be repealed along with ACA coverage expansion provision. We will continue to evaluate the effect that the ACA and its possible repeal and replacement could have on our business.

The Trump Administration has also taken executive actions to undermine or delay implementation of the ACA. Since January 2017, President Trump has signed two Executive Orders designed to delay the implementation of certain provisions of the ACA or otherwise circumvent some of the requirements for health insurance mandated by the ACA. One Executive Order directs federal agencies with authorities and responsibilities under the ACA to waive, defer, grant exemptions from, or delay the implementation of any provision of the ACA that would impose a fiscal or regulatory burden on states, individuals, healthcare providers, health insurers, or manufacturers of pharmaceuticals or medical devices. The second Executive Order terminates the cost-sharing subsidies that reimburse insurers under the ACA. Several state Attorneys General filed suit to stop the administration from terminating the subsidies, but their request for a restraining order was denied by a federal judge in California on October 25, 2017. In addition, CMS has recently proposed regulations that would give states greater flexibility in setting benchmarks for insurers in the individual and small group marketplaces, which may have the effect of relaxing the essential health benefits required under the ACA for plans sold through such marketplaces. Further, on June 14, 2018, U.S. Court of Appeals for the Federal Circuit ruled that the federal government was not required to pay more than \$12 billion in ACA risk corridor payments to third-party payors who argued were owed to them. The effects of this gap in reimbursement on third-party payors, the viability of the ACA marketplace, providers, and potentially our business, are not yet known.

We will continue to evaluate the effect that the ACA and its possible repeal and replacement could have on our business. It is possible that repeal and replacement initiatives, if enacted into law, could ultimately result in fewer individuals having health insurance coverage or in individuals having insurance coverage with less generous benefits. While the timing and scope of any potential future legislation to repeal and replace ACA provisions is highly uncertain in many respects, it is also possible that some of the ACA provisions that generally are not favorable for the research-based pharmaceutical industry could also be repealed along with ACA coverage expansion provisions. Accordingly, such reforms, if enacted, could have an adverse effect on anticipated revenue from INVELTYS or from product candidates that we may successfully develop and for which we may obtain marketing approval and may affect our overall financial condition and ability to develop or commercialize product candidates.

The costs of prescription pharmaceuticals in the United States has also been the subject of considerable discussion in the United States, and members of Congress and the Trump Administration have stated that they will address such costs through new legislative and administrative measures. The pricing of prescription pharmaceuticals is also subject to governmental control outside the United States. In these countries, pricing negotiations with governmental authorities can take considerable time after the receipt of marketing approval for a product. To obtain reimbursement or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost-effectiveness of our product candidates to other available therapies. If reimbursement of our products is unavailable

or limited in scope or amount, or if pricing is set at unsatisfactory levels, our ability to generate revenues and become profitable could be impaired. Finally, legislative and regulatory proposals have also been made to expand post-approval requirements and restrict sales and promotional activities for pharmaceutical products. We cannot be sure whether additional legislative changes will be enacted, or whether the FDA regulations, guidance or interpretations will be changed, or what the impact of such changes on the marketing approvals of our products and product candidates, if any, may be. In addition, increased scrutiny by the U.S. Congress of the FDA's approval process may significantly delay or prevent marketing approval, as well as subject us and any future collaborators to more stringent product labeling and post-marketing testing and other requirements with respect to INVELTYS or any other product candidate for which we obtain approval.

Specifically, there have been several recent U.S. congressional inquiries and proposed federal and proposed and enacted state legislation designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, reduce the costs of drugs under Medicare and reform government program reimbursement methodologies for drug products. At the federal level, Congress and the Trump administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. For example, on May 11, 2018, the Administration issued a plan to lower drug prices. Under this blueprint for action, the Administration indicated that the Department of Health and Human Services (HHS) will: take steps to end the gaming of regulatory and patent processes by drug makers to unfairly protect monopolies; advance biosimilars and generics to boost price competition; evaluate the inclusion of prices in drug makers' ads to enhance price competition; speed access to and lower the cost of new drugs by clarifying policies for sharing information between insurers and drug makers; avoid excessive pricing by relying more on value-based pricing by expanding outcome-based payments in Medicare and Medicaid; work to give Part D plan sponsors more negotiation power with drug makers; examine which Medicare Part B drugs could be negotiated for a lower price by Part D plans, and improving the design of the Part B Competitive Acquisition Program; update Medicare's drug-pricing dashboard to increase transparency; prohibit Part D contracts that include "gag rules" that prevent pharmacists from informing patients when they could pay less out-of-pocket by not using insurance; and require that Part D plan members be provided with an annual statement of plan payments, out-of-pocket spending, and drug price increases.

At the state level, individual states are increasingly aggressive in passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. In addition, regional health care authorities and individual hospitals are increasingly using bidding procedures to determine what pharmaceutical products and which suppliers will be included in their prescription drug and other health care programs. These measures could reduce the ultimate demand for our products, once approved, or put pressure on our product pricing. We expect that additional state and federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in reduced demand for our product candidates or additional pricing pressures.

If we or any third-party manufacturers we engage fail to comply with environmental, health and safety laws and regulations, we could become subject to fines or penalties or incur significant costs.

We and any third-party manufacturers we may engage are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. From time to time and in the future, our operations may involve the use of hazardous materials, including chemicals and biological materials, and produce hazardous waste products. We generally contract with third parties for the disposal of these materials and wastes. We cannot eliminate the risk of contamination or injury from these materials. In the event of contamination or injury resulting from our use of hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties for failure to comply with such laws and regulations.

Although we maintain general liability insurance as well as workers' compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of hazardous materials, this

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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 in connection with our storage or disposal of biological, hazardous or radioactive materials.

In addition, we may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations. These current or future laws and regulations may impair our research, development or production efforts. Our failure to comply with these laws and regulations also may result in substantial fines, penalties or other sanctions.

Further, with respect to the operations of any future third-party contract manufacturers, it is possible that if they fail to operate in compliance with applicable environmental, health and safety laws and regulations or properly dispose of wastes associated with our products, we could be held liable for any resulting damages, suffer reputational harm or experience a disruption in the manufacture and supply of our product candidates or products.

We are subject to anti-corruption laws, as well as export control laws, customs laws, sanctions laws and other laws governing our operations. If we fail to comply with these laws, we could be subject to civil or criminal penalties, other remedial measures and legal expenses, be precluded from developing manufacturing and selling certain products outside the United States or be required to develop and implement costly compliance programs, which could adversely affect our business, results of operations and financial condition.

Our operations are subject to anti-corruption laws, including the U.K. Bribery Act 2010, or Bribery Act, the U.S. Foreign Corrupt Practices Act, or FCPA, and other anti-corruption laws that apply in countries where we do business and may do business in the future. The Bribery Act, FCPA and these other laws generally prohibit us, our officers, and our employees and intermediaries from bribing, being bribed or making other prohibited payments to government officials or other persons to obtain or retain business or gain some other business advantage. Compliance with the FCPA, in particular, is expensive and difficult, particularly in countries in which corruption is a recognized problem. In addition, the FCPA presents particular challenges in the pharmaceutical industry, because, in many countries, hospitals are operated by the government, and doctors and other hospital employees are considered foreign officials. Certain payments to hospitals in connection with clinical trials and other work have been deemed to be improper payments to government officials and have led to FCPA enforcement actions.

We may in the future operate in jurisdictions that pose a high risk of potential Bribery Act or FCPA violations, and we may participate in collaborations and relationships with third parties whose actions could potentially subject us to liability under the Bribery Act, FCPA or local anti-corruption laws. In addition, we cannot predict the nature, scope or effect of future regulatory requirements to which our international operations might be subject or the manner in which existing laws might be administered or interpreted. If we expand our operations outside of the United States, we will need to dedicate additional resources to comply with numerous laws and regulations in each jurisdiction in which we plan to operate.

We are also subject to other laws and regulations governing our international operations, including regulations administered by the governments of the United Kingdom and the United States, and authorities in the European Union, including applicable export control regulations, economic sanctions on countries and persons, customs requirements and currency exchange regulations, collectively referred to as the Trade Control laws. In addition, various laws, regulations and executive orders also restrict the use and dissemination outside of the United States, or the sharing with certain non-U.S. nationals, of information classified for national security purposes, as well as certain products and technical data relating to those products. If we expand our presence outside of the United States, it will require us to dedicate additional resources to comply with these laws, and these laws may preclude us from developing, manufacturing, or selling certain products and product candidates outside of the United States, which could limit our growth potential and increase our development costs.

There is no assurance that we will be completely effective in ensuring our compliance with all applicable anti-corruption laws, including the Bribery Act, the FCPA or other legal requirements, including Trade Control laws. If we are not in compliance with the Bribery Act, the FCPA and other anti-corruption laws or Trade Control laws, we may be subject to criminal and civil penalties, disgorgement and other sanctions and remedial measures, and legal expenses,

which could have an adverse impact on our business, financial condition, results of operations and liquidity. The Securities and Exchange Commission also may suspend or bar issuers from trading securities on U.S. exchanges for violations of the FCPA's accounting provisions. Any investigation of any potential violations of the Bribery Act, the FCPA, other anti-corruption laws or Trade Control laws by U.K., U.S. or other authorities could also have an adverse impact on our reputation, our business, results of operations and financial condition.

The recently passed comprehensive tax reform bill could adversely affect our business and financial condition.

On December 22, 2017, President Trump signed into law new legislation that significantly revises the Internal Revenue Code of 1986, as amended. The newly enacted federal income tax law, among other things, contains significant changes to corporate taxation, including reduction of the corporate tax rate from a top marginal rate of 35% to a flat rate of 21%, limitation of the tax deduction for net interest expense to 30% of adjusted earnings (except for certain small businesses), limitation of the deduction for net operating losses to 80% of current year taxable income and elimination of net operating loss carrybacks, in each case, for losses arising in taxable years beginning after December 31, 2017 (though any such net operating losses may be carried forward indefinitely), one time taxation of offshore earnings at reduced rates regardless of whether they are repatriated, elimination of U.S. tax on foreign earnings (subject to certain important exceptions) received as dividends by certain U.S. corporations, immediate deductions for certain new investments instead of deductions for depreciation expense over time, and modifying or repealing many business deductions and credits. Notwithstanding the reduction in the corporate income tax rate, the overall impact of the new federal tax law is uncertain and our business and financial condition could be adversely affected. In addition, it is uncertain how various states will respond to the newly enacted federal tax law. The impact of this tax reform on holders of our common stock is also uncertain and could be adverse. We urge our stockholders to consult with their legal and tax advisors with respect to this legislation and the potential tax consequences of investing in or holding our common stock.

We might not be able to utilize a significant portion of our net operating loss carryforwards and research and development tax credit carryforwards.

As of December 31, 2018, we had federal net operating loss carryforwards of \$165.0 million, which expire at various dates beginning in 2030 through 2038 and state net operating loss carryforwards of \$156.4 million, which expire at various dates beginning in 2030 through 2038. These net operating loss carryforwards could expire unused and be unavailable to offset our future income tax liabilities. Under the newly enacted federal income tax law, federal net operating losses incurred in 2018 and in future years may be carried forward indefinitely, but the deductibility of such federal net operating losses is limited. It is uncertain how various states will respond to the newly enacted federal tax law. In addition, under Section 382 of the U.S. Internal Revenue Code of 1986, as amended, the amount of benefits from our NOL carryforwards may be impaired or limited if we incur a cumulative ownership change of more than 50%, as interpreted by the U.S. Internal Revenue Service, over a three-year period. We may have experienced ownership changes in the past and may experience changes in the future as a result of subsequent shifts in our stock ownership, some of which are outside our control. As a result, our use of federal NOL carryforward could be limited. State NOL carryforwards may be similarly limited. Any such disallowances may result in greater tax liabilities than we would incur in the absence of such a limitation and increased liabilities could adversely affect our business, results of operations, financial position and cash flows. If our ability to use our historical net operating loss carryforwards is materially limited, it would harm our future operating results by effectively increasing our future tax obligations.

Risks Related to Employee Matters and Managing Growth

Our future success depends on our ability to retain key executives and to attract, retain and motivate qualified personnel.

We are highly dependent on the research and development, clinical and business development expertise of Mark Iwicki, our President and Chief Executive Officer, Todd Bazemore, our Chief Operating Officer, Mary Reumuth, our Chief Financial Officer, Kim Brazzell, Ph.D., our Chief Medical Officer, and Hongming Chen, Sc.D., our Chief Scientific Officer, as well as the other principal members of our management, scientific and clinical team. Although we have entered into employment agreements with our executive officers, each of them may terminate their employment with us at any time. We do not maintain "key person" insurance for any of our executives or other employees.

Recruiting and retaining qualified scientific, clinical, manufacturing, legal and sales and marketing personnel will also be critical to our success. The loss of the services of our executive officers or other key employees could impede the achievement of our research, development and commercialization objectives and seriously harm our ability to successfully implement our business strategy. Furthermore, replacing executive officers and key employees may be difficult and may take an extended period of time because of the limited number of individuals in our industry with the breadth of skills and experience required to successfully develop, gain regulatory approval of and commercialize products. Competition to hire from this limited pool is intense, and we may be unable to hire, train, retain or motivate these key personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. We also experience competition for the hiring of scientific and clinical personnel from universities and research institutions. In addition, we rely on consultants and advisors, including scientific and clinical advisors, to assist us in formulating our research and development and commercialization strategy. Our consultants and advisors may be employed by employers other than us and may have commitments under consulting or advisory contracts with other entities that may limit their availability to us. If we are unable to continue to attract and retain high quality personnel, our ability to pursue our growth strategy will be limited.

We have expanded and expect to continue to expand our development, regulatory, commercial and manufacturing capabilities and are continuing to implement sales, marketing and distribution capabilities, and as a result, we may encounter difficulties in managing our growth, which could disrupt our operations.

We have experienced and expect to continue experiencing significant growth in the number of our employees and the scope of our operations, particularly in the areas of drug development, clinical, regulatory affairs, manufacturing, sales, marketing and distribution. To manage our current and anticipated future growth, we must continue to implement and improve our managerial, operational and financial systems, expand our facilities and continue to recruit and train additional qualified personnel. Due to our limited financial resources and our limited experience in managing such growth, we may not be able to effectively manage the expansion of our operations or recruit and train additional qualified personnel. The expansion of our operations may lead to significant costs and may divert our management and business development resources. Any inability to manage growth could delay the execution of our business plans or disrupt our operations.

Our internal computer systems, or those of our contractors or consultants, may fail or suffer security breaches, which could result in a material disruption of our product development programs.

Our internal computer systems and those of our current and any future contractors or consultants, including any collaborator, are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. While we have not experienced any such material system failure, accident or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our development programs and our business operations, whether due to a loss of our trade secrets or other proprietary information or other similar disruptions. For example, the loss of clinical trial data from completed or future 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 were to result in a loss of, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability, our competitive position could be harmed and the further development and commercialization of our product candidates could be delayed.

Risks Related to Our Common Stock

Our executive officers, directors and principal stockholders, if they choose to act together, will continue to have the ability to control all matters submitted to stockholders for approval.

As of December 31, 2018, our executive officers and directors and principal stockholders in the aggregate, own shares representing approximately 46.1% of our capital stock. As a result, if these stockholders were to choose to act together, they would be able to control all matters submitted to our stockholders for approval, as well as our management and affairs. For example, these persons, if they choose to act together, would control the election of directors and approval of any merger, consolidation or sale of all or substantially all of our assets.

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This concentration of voting power may:

- delay, defer or prevent a change in control;
- entrench our management and our board of directors; or
- delay or prevent a merger, consolidation, takeover or other business combination involving us on terms that other stockholders may desire.

Provisions in our corporate charter documents and under Delaware law could make an acquisition of our company, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management.

Provisions in our certificate of incorporation and our bylaws may discourage, delay or prevent a merger, acquisition or other change in control of our company that stockholders may consider favorable, including transactions in which you might otherwise receive a premium for your shares. These provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock, thereby depressing the market price of our common stock. In addition, because our board of directors are responsible for appointing the members of our management team, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors. Among other things, these provisions:

- provide for a classified board of directors such that only one of three classes of directors are elected each year;
- allow the authorized number of our directors to be changed only by resolution of our board of directors;
- limit the manner in which stockholders can remove directors from our board of directors;
- provide for advance notice requirements for stockholder proposals that can be acted on at stockholder meetings and nominations to our board of directors;
- require that stockholder actions must be effected at a duly called stockholder meeting and prohibit actions by our stockholders by written consent;
- limit who may call stockholder meetings;
- authorize our board of directors to issue preferred stock without stockholder approval, which could be used to institute a “poison pill” that would work to dilute the stock ownership of a potential hostile acquirer, effectively preventing acquisitions that have not been approved by our board of directors; and
- require the approval of the holders of at least 75% of the votes that all our stockholders would be entitled to cast to amend or repeal specified provisions of our certificate of incorporation or bylaws.

Moreover, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which prohibits a person who owns in excess of 15% of our outstanding voting stock from merging or combining with us for a period of three-years after the date of the transaction in which the person acquired in excess of 15% of our outstanding voting stock, unless the merger or combination is approved in a prescribed manner.

An active trading market for our common stock may not be sustained.

Our shares of common stock began trading on The Nasdaq Global Select Market on July 20, 2017. Given the limited trading history of our common stock, there is a risk that an active trading market for our shares will not be sustained, which could put downward pressure on the market price for our common stock and thereby affect your ability to sell your shares. An inactive trading market may also impair our ability to raise capital to continue to fund operations by selling shares and may impair our ability to acquire other companies or technologies by using our shares as consideration.

The price of our common stock may be volatile and fluctuate substantially, which could result in substantial losses for purchasers of our common stock.

Our stock price is likely to be volatile. The stock market in general and the market for smaller biopharmaceutical companies in particular have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. As a result of this volatility, you may not be able to sell your common stock at or above the public offering price. The market price for our common stock may be influenced by many factors, including:

- our success in launching and commercializing INVELTYS;
- results of clinical trials of any of our product candidates, including KPI-121 0.25%;
- results of clinical trials of product candidates of our competitors;
- our success in commercializing KPI-121 0.25% and other product candidates, if and when approved;
- the success of competitive products or technologies;
- regulatory or legal developments in the United States and other countries;
- developments or disputes concerning patent applications, issued patents or other proprietary rights;
- the recruitment or departure of key scientific or management personnel;
- the level of expenses related to the commercial launch of INVELTYS and clinical development programs for any of our product candidates, including KPI-121 0.25%;
- the results of our efforts to discover, develop, acquire or in-license additional products, product candidates or technologies for the treatment of diseases or conditions, the costs of commercializing any such products and the costs of development of any such product candidates or technologies;
- actual or anticipated changes in estimates as to financial results, development timelines or recommendations by securities analysts;
- variations in our financial results or those of companies that are perceived to be similar to us;
- changes in the structure of healthcare payment systems;
- market conditions in the pharmaceutical and biotechnology sectors;
- general economic, industry and market conditions; and

- the other factors described in this “Risk Factors” section.

In the past, following periods of volatility in the market price of a company’s securities, securities class-action litigation has often been instituted against that company. We also may face securities class-action litigation if we fail to successfully launch and commercialize INVELTYS, or if we cannot obtain regulatory approvals for or otherwise fail to successfully launch and commercialize KPI-121 0.25% or our other product candidates. Such litigation, if instituted against us, could cause us to incur substantial costs to defend such claims and divert management’s attention and resources.

Sale of a substantial number of shares of our common stock into the market could cause the market price of our common stock to drop significantly, even if our business is doing well.

Sales of a substantial number of shares of our common stock in the public market, or the perception in the market that the holders of a large number of shares intend to sell shares, could reduce the market price of our common stock. As of March 6, 2019, we had outstanding 33,882,872 shares of common stock. Shares of our common stock may be freely sold in the public market at any time to the extent permitted by Rules 144 and 701 under the Securities Act of 1933, as amended, or the Securities Act, or to the extent such shares have already been registered under the Securities Act and are held by non-affiliates of ours. Persons who were our stockholders prior to our initial public offering continue to hold a substantial number of shares of our common stock. If such persons 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. Moreover, holders of a substantial number of shares of our common stock, including shares of our common stock issuable upon exercise of outstanding warrants and options, have rights, subject to specified conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders. We have filed or intend to file registration statements registering all shares of common stock that we may issue under our equity compensation plans or pursuant to equity awards made to newly hired employees outside of equity compensation plans. These shares can be freely sold in the public market upon issuance, subject to volume limitations applicable to affiliates.

We are an “emerging growth company” and a “smaller reporting company”, and the reduced disclosure requirements applicable to emerging growth companies and smaller reporting companies may make our common stock less attractive to investors.

We are an “emerging growth company,” as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act, and may remain an emerging growth company until December 31, 2022, although if the market value of our common stock that is held by non-affiliates exceeds \$700 million as of the prior June 30th or if we have annual gross revenues of \$1.07 billion or more in any fiscal year, we would cease to be an emerging growth company as of December 31 of the applicable year. We also would cease to be an emerging growth company if we issue more than \$1 billion of non-convertible debt over a three-year period.

We are also a “smaller reporting company,” as defined in Rule 12b-2 under the Securities Exchange Act of 1934, as amended. We would cease to be a smaller reporting company if we have a public float in excess of \$250 million, or have annual revenues in excess of \$100 million and a public float in excess of \$700 million, determined on an annual basis.

As an emerging growth company, we are permitted and intend to rely on exemptions from certain disclosure requirements that are applicable to other public companies that are not emerging growth companies. These exemptions include:

- not being required to comply with the auditor attestation requirements in the assessment of our internal control over financial reporting;
- not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor’s report providing additional information about the audit and the financial statements;

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- reduced disclosure obligations regarding executive compensation; and
- exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved.

In addition to the above reduced disclosure requirements applicable to emerging growth companies, as a smaller reporting company, we are permitted and intend to rely on on exemptions from certain disclosure requirements that are applicable to other public companies that are not smaller reporting companies. These exemptions include:

- being permitted to provide only two years of audited financial statements in this Annual Report on Form 10-K, with correspondingly reduced "Management's Discussion and Analysis of Financial Condition and Results of Operations" disclosure;
- not being required to furnish a contractual obligations table in "Management's Discussion and Analysis of Financial Condition and Results of Operations"; and
- not being required to furnish a stock performance graph in our annual report.

We cannot predict whether investors will find our common stock less attractive as a result of our reliance on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile.

We have incurred and will continue to incur increased costs as a result of operating as a public company, and our management is now required to devote substantial time to new compliance initiatives and corporate governance practices.

As a public company, and particularly after we are no longer an emerging growth company, we will incur significant legal, accounting and other expenses that we did not incur as a private company. The Sarbanes-Oxley Act of 2002, the Dodd-Frank Wall Street Reform and Consumer Protection Act, the listing requirements of The Nasdaq Global Select Market and other applicable securities rules and regulations impose various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. Our management and other personnel devote a substantial amount of time to these compliance initiatives. Moreover, these rules and regulations have increased our legal and financial compliance costs and will make some activities more time-consuming and costly.

For as long as we remain an emerging growth company or a smaller reporting company, we may take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies or smaller reporting companies as described in the preceding risk factor.

Pursuant to Section 404 of the Sarbanes-Oxley Act of 2002, or Section 404, we are required to furnish a report by our management on our internal control over financial reporting. However, while we remain an emerging growth company, we will not be required to include an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. To achieve compliance with Section 404 within the prescribed period, we engaged in a process to document and evaluate our internal control over financial reporting, which is both costly and challenging. In this regard, we will need to continue to dedicate internal resources, potentially engage outside consultants and adopt a detailed work plan to assess and document the adequacy of internal control over financial reporting, continue steps to improve control processes as appropriate, validate through testing that controls are functioning as documented and implement a continuous reporting and improvement process for internal control over financial reporting. Despite our efforts, there is a risk that we will not be able to conclude, within the prescribed timeframe or at all, that our internal control over financial reporting is effective as required by Section 404. If we identify one or more material weaknesses in our internal control over financial reporting, it could result in an adverse reaction in the financial markets due to a loss of confidence in the reliability of our financial statements.

Because we do not anticipate paying any cash dividends on our capital stock in the foreseeable future, capital appreciation, if any, will be your sole source of gain.

We have never declared or paid cash dividends on our capital stock. We currently intend to retain all of our future earnings, if any, to finance the growth and development of our business. In addition, the terms of our Athyrium Credit Facility preclude us from paying dividends without the lenders' consent, and any future debt agreements that we may enter into may preclude us from paying dividends without the lenders' consent or at all. As a result, capital appreciation, if any, of our common stock will be your sole source of gain for the foreseeable future.

Our certificate of incorporation designates the state courts in the State of Delaware as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, which could discourage lawsuits against the company and our directors, officers and employees.

Our certificate of incorporation provides that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for any derivative action or proceeding brought on our behalf, any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers or employees to our company or our stockholders, any action asserting a claim against us arising pursuant to any provision of the General Corporation Law of the State of Delaware or our certificate of incorporation or bylaws or as to which the General Corporation Law of the State of Delaware confers jurisdiction on the Court of Chancery of the State of Delaware, or any action asserting a claim against us governed by the internal affairs doctrine. This exclusive forum provision may limit the ability of our stockholders to bring a claim in a judicial forum that such stockholders find favorable for disputes with us or our directors, officers or employees, which may discourage such lawsuits against us and our directors, officers and employees.

Item 1B Unresolved Staff Comments

None.

Item 2. Properties

Our principal facilities consist of office and laboratory space. During the year ended December 31, 2018, we occupied approximately 11,747 square feet of office space in Waltham, Massachusetts under a lease that expired in January 2019.

On February 28, 2018 we entered into a lease for our new corporate headquarters located in Watertown, Massachusetts which consists of 66,052 rentable square feet with an initial term of eight years and option to extend for an additional term of five years.

On March 15, 2018, we entered into a lease for the portion of an office building located in Waltham, Massachusetts which consists of 6,294 rentable square feet. The term of the lease is one year.

As of January 28, 2019, we vacated our office and laboratory facilities in Waltham, Massachusetts and moved into our new corporate headquarters in Watertown, Massachusetts.

Item 3. Legal Proceedings

We are not currently subject to any material legal proceedings.

Item 4. Mine Safety Disclosures

None.

Part II

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

Our common stock has been publicly traded on the Nasdaq Global Select Market under the symbol “KALA” since July 20, 2017 in connection with our initial public offering, or IPO. Prior to that time, there was no public market for our common stock.

Holder

As of March 6, 2019, there were approximately 18 holders of record of our common stock. This number does not include beneficial owners whose shares are held by nominees in street name.

Dividend policy

We have not declared or paid any cash dividends on our common stock since our inception. We intend to retain all available funds and any future earnings to finance the operation and expansion of our business and do not anticipate paying any cash dividends in the foreseeable future. In addition, our ability to pay cash dividends is currently restricted by the terms of our Athyrium Credit Facility, and future debt financing arrangements may contain terms prohibiting or limiting the amount of dividends that may be declared or paid on our common stock. Any future determination to declare and pay dividends will be made at the discretion of our board of directors and will depend on then-existing conditions, including our results of operations, financial condition, contractual restrictions, capital requirements, business prospects and other factors our board of directors may deem relevant.

Information about our equity compensation plans

The information required by this item will be set forth in our Proxy Statement for the 2019 Annual Meeting of Stockholders and is incorporated in this Annual Report on Form 10-K by reference.

Recent sales of unregistered securities.

Set forth below is information regarding shares of our common stock issued and stock options granted by us for the twelve months ended December 31, 2018 that were not registered under the Securities Act of 1933, as amended, or the Securities Act and that have not otherwise been described in a Quarterly Report on Form 10-Q or a Current Report on Form 8-K.

From October 1, 2018 through December 31, 2018, we granted stock options to new employees to purchase an aggregate of 278,500 shares of our common stock as inducement grants made outside of our 2017 Equity Incentive Plan in accordance with NASDAQ Listing Rules 5635(c)(4) and Section 4(a)(2) of the Securities Act of 1933, as amended. The options have a ten-year term and vest over four years, with 25% of the shares underlying each option award vesting on the one-year anniversary of the applicable employee’s new hire date and the remaining 75% of the shares underlying each award vesting monthly thereafter for three years. Vesting of each option is subject to the option holders continued service with our company through the applicable vesting dates. We intend to file a registration statement on a Form S-8 to register the shares of common stock underlying these inducement grants prior to the time at which these options become exercisable.

Purchase of Equity Securities

We did not purchase any of our registered equity securities during the period covered by this Annual Report on Form 10-K.

Use of proceeds from registered securities

On July 25, 2017, we completed our IPO on Form S-1, as amended (File No. 333-218936), which was declared effective by the SEC on July 19, 2017.

In our IPO, we issued and sold 6,900,000 shares of our common stock at an initial offering price of \$15.00 per share, including 900,000 shares of common stock sold pursuant to the underwriters' exercise of their option to purchase additional shares of common stock. We received net proceeds of \$94.0 million after deducting underwriting discounts and commission and offering costs.

As of December 31, 2018, we had used \$72.7 million of the net offering proceeds from the IPO, primarily to fund KPI-121 development costs, general corporate purposes and to build a commercial organization. There was no material change in the planned use of proceeds from our IPO from that described in our final prospectus filed with the SEC pursuant to Rule 424(b)(4) under the Securities Act on July 20, 2017.

Item 6. Selected Financial Data

You should read the following selected consolidated financial data together with our consolidated financial statements and accompanying notes appearing elsewhere in this Annual Report on Form 10-K and the "Management's Discussion and Analysis of Financial Condition and Results of Operations" section of this Annual Report on Form 10-K. We have derived the selected consolidated statement of operations data for the years ended December 31, 2018 and 2017, and the selected consolidated balance sheet data as of December 31, 2018 and 2017 from our audited consolidated financial statements included in "Item 8 – Financial Statements and Supplementary Data". The selected consolidated statement of operations data for the years ended December 31, 2016 and 2015 and balance sheet data as of December 31, 2016 and 2015 set forth below have been derived from the audited financial statements for such years not included in this Annual Report on Form 10-K. Our historical results for any prior period are not necessarily indicative of the results that may be expected in any future period.

	Year Ended December 31,			
	2018	2017	2016	2015
Statement of Operations Data:	(in thousands, except share and per share amounts)			
Revenue	\$ —	\$ —	\$ —	\$ 45
Operating expenses				
Research and development	29,290	29,008	25,029	11,382
Selling, general and administrative	35,431	10,867	7,640	4,609
Total operating expenses	64,721	39,875	32,669	15,991
Loss from operations	(64,721)	(39,875)	(32,669)	(15,946)
Other income (expense)				
Interest income	1,687	527	147	—
Interest expense	(3,314)	(1,019)	(767)	(604)
Loss on extinguishment of debt	(390)	—	—	—
Change in fair value of warrant liability	—	(1,844)	122	(132)
Net loss attributable to common stockholders	\$ (66,738)	\$ (42,211)	\$ (33,167)	\$ (16,682)
Net loss per share attributable to common stockholders—basic and diluted	\$ (2.49)	\$ (3.71)	\$ (28.07)	\$ (14.89)
Weighted average shares outstanding—basic and diluted	26,753,906	11,375,000	1,181,429	1,120,268

	As of December 31,			
	2018	2017	2016	2015
	(in thousands)			
Balance Sheet Data:				
Cash	\$ 170,898	\$ 114,565	\$ 45,472	\$ 5,759
Total assets	220,966	116,546	46,329	8,448
Working capital(1)	160,018	100,341	40,080	2,094
Long-term debt—less current portion	70,226	11,987	9,098	7,795
Other long-term liabilities	28,752	8	17	3
Total stockholders' equity (deficit)	104,978	89,679	(87,762)	(56,664)

(1) We define working capital as current assets less current liabilities.

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

You should read the following discussion and analysis of our financial condition and results of operations together with our financial statements and related notes thereto appearing at the end of this Annual Report on Form 10-K. Some of the information contained in this discussion and analysis or set forth elsewhere in this Annual Report on Form 10-K, including information with respect to our plans and strategy for our business and related financing, includes forward-looking statements that involve risks and uncertainties. See "Special Note Regarding Forward-Looking Statements and Industry Data." Because of many factors, including those factors set forth in the "Risk Factors" section of this Annual Report on Form 10-K, our actual results could differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.

Overview

We are a biopharmaceutical company focused on the development and commercialization of therapeutics using our proprietary AMPPLIFY™ mucus-penetrating particle, or MPP, drug delivery technology, with an initial focus on the treatment of eye diseases. The innovative AMPPLIFY technology uses selectively-sized nanoparticles that each have a proprietary coating. We believe that these two key attributes enable even distribution of drug particles on mucosal surfaces and significantly increase drug delivery to target tissues by enhancing mobility of drug particles through mucus and preventing drug particles from becoming trapped and eliminated by mucus. We have applied the AMPPLIFY technology to loteprednol etabonate, or LE, a corticosteroid designed for ocular applications, resulting in the approval in the August 2018 approval of INVELTYS™ (loteprednol etabonate ophthalmic suspension) 1%, or INVELTYS, our topical twice-a-day ocular steroid for the treatment of inflammation and pain following ocular surgery, by the U.S. Food and Drug Administration, or the FDA, and the development of our lead product candidate, KPI-121 0.25%, for the temporary relief of the signs and symptoms of dry eye disease. We commercially launched INVELTYS in January 2019.

KPI-121 0.25% is our product candidate for patients with dry eye disease utilizing a two-week course of therapy. In January 2018, we announced topline results from two completed Phase 3 clinical trials, which we refer to as STRIDE 1 and STRIDE 2 (STRIDE - Short Term Relief In Dry Eye), evaluating the safety and efficacy of KPI-121 0.25% versus vehicle (placebo) in patients with dry eye disease. In STRIDE 1, statistical significance was achieved for the primary sign endpoint of conjunctival hyperemia and the primary symptom endpoint of ocular discomfort severity change from baseline to day 15 in the intent to treat, or ITT, population; in addition, statistical significance was also achieved in STRIDE 1 for a second pre-specified primary symptom endpoint of ocular discomfort severity change from baseline to day 15 in patients with more severe baseline ocular discomfort. In STRIDE 2, statistical significance was achieved for the primary sign endpoint of conjunctival hyperemia, but statistical significance was not achieved for the primary symptom endpoint of ocular discomfort severity. KPI-121 0.25% was generally well tolerated in both STRIDE 1 and STRIDE 2, with no clinically significant treatment-related adverse events observed during the course of either trial, and with elevations in interocular pressure, or IOP in both trials similar to placebo.

In December 2018, the FDA accepted for filing our new drug application, or an NDA, for KPI-121 0.25%, which the FDA has granted a target action date under the Prescription Drug User Fee Act, or PDUFA, of August 15, 2019. Based upon the recommendation of the FDA, we also initiated an additional Phase 3 clinical trial, STRIDE 3, in

the third quarter of 2018 evaluating KPI-121 0.25% for the temporary relief of the signs and symptoms of dry eye disease. We believe we have identified key factors that contributed to the differences observed in the results from STRIDE 2 compared to those of STRIDE 1 and the Phase 2 trial, and that changes made to the inclusion/exclusion criteria of STRIDE 3 based on these analyses will improve the probability of success. If approved, KPI-121 0.25% could be the first FDA-approved product for the temporary relief of the signs and symptoms of dry eye disease.

INVELTYS is the first and only FDA-approved ocular corticosteroid product with a twice-a-day dosing regimen for the treatment of post-operative inflammation and pain. Other approved topical ocular corticosteroid products for this indication are dosed four times a day. In clinical trials, INVELTYS showed statistical significance in the primary efficacy endpoints of complete resolution of inflammation at day eight maintained through day 15 with no need for rescue medication compared to placebo and complete resolution of pain at day eight maintained through day 15 with no need for rescue medications compared to placebo.

We are evaluating opportunities for MPP nanosuspensions of LE with less frequent daily dosing regimens for the temporary relief of signs and symptoms of dry eye disease and potential chronic treatment of dry eye disease. We also are evaluating compounds in our receptor Tyrosine Kinase Inhibitor program, or rTKI program, that inhibit the vascular endothelial growth factor, or VEGF, pathway, for the potential treatment of a number of retinal diseases.

INVELTYS received FDA approval under Section 505(b)(2) of the U.S. Federal Food, Drug and Cosmetic Act, or the FDCA, which is the pathway we plan to rely on for the approval of KPI-121 0.25% as well. We have retained worldwide commercial rights for INVELTYS and our current product candidates. Since FDA approval of INVELTYS, we have built a commercial infrastructure with our own focused, specialty sales force which includes 57 territory sales managers, 7 regional sales leaders and 3 directors of national accounts. If KPI-121 0.25% is approved for the temporary treatment of dry eye disease, we expect to further expand our sales force by up to an additional 100 personnel. We expect to commercialize in the United States any of our other product candidates that receive marketing approval as well. In anticipation of the potential to commercialize our product candidates in other global markets, we are evaluating a variety of collaboration, distribution and other marketing arrangements with one or more third parties.

On July 25, 2017, we completed our initial public offering of our common stock, or IPO, pursuant to which we issued and sold 6,900,000 shares of our common stock at a price of \$15.00 per share, which included 900,000 shares sold pursuant to the exercise of the underwriters' option to purchase additional shares. We received net proceeds of \$94.0 million, after deducting underwriting discounts and commissions and offering expenses.

On August 9, 2018, we filed a shelf registration statement on Form S-3, or Shelf Registration, with the SEC, which was declared effective on August 27, 2018. Under the Shelf Registration, we may offer and sell up to \$250.0 million of a variety of securities including common stock, preferred stock, warrants, depositary shares, debt securities, purchase contracts, purchase units or any combination of such securities during the three-year period that commenced upon the Shelf Registration becoming effective. Under the Shelf Registration, we may periodically offer one or more types of securities in amounts, at prices and on terms announced, if and when the securities are ever offered.

On October 5, 2018, we sold 7,500,000 shares of our common stock in an underwritten offering pursuant to the Shelf Registration at a public offering price of \$8.25 per share, before underwriting discounts and commissions. In addition, the underwriters were granted an option to purchase an additional 1,125,000 shares of the common stock at the same public offering price, less underwriting discounts and commissions. On October 11, 2018, the underwriters exercised in full their option to purchase the additional shares. The total number of shares sold by us in the offering was 8,625,000 shares, resulting in net proceeds to us, after underwriting discounts and offering expenses, of approximately \$66.1 million.

In connection with the filing of the Shelf Registration, we entered into a sales agreement with Jefferies, LLC pursuant to which we may issue and sell, from time to time, up to an aggregate of \$50.0 million of our common stock in at-the-market equity offerings, or the ATM Offering, through Jefferies, LLC, as sales agent. As of December 31, 2018, we had issued 518,135 shares of our common stock under the ATM Offering resulting in net proceeds to us of approximately \$4.6 million.

On October 1, 2018, we entered into a \$110 million credit agreement with Athyrium Opportunities III Acquisition LP, or the Athyrium Credit Facility. The Athyrium Credit Facility provides for a Term Loan A in the aggregate principal amount of \$75.0 million, or the Term Loan A, and a Term Loan B in the aggregate principal amount of \$35.0 million, or the Athyrium Term Loan B. On October 1, 2018, we borrowed the entire principal amount of the Term A Loan. We may draw down the Athyrium Term Loan B upon either (i) FDA approval of KPI-121 0.25% for a dry eye disease indication or (ii) reaching certain net product revenues for INVELTYS, in each case on or prior to June 30, 2020.

Since inception, we have incurred significant losses from operations and negative cash flows from operations. Our net losses were \$66.7 million for the year ended December 31, 2018 and \$42.2 million for the year ended December 31, 2017. As of December 31, 2018, we had an accumulated deficit of \$201.1 million. As we commercially launched our first product, INVELTYS, in January 2019, we have had only limited revenues to date from product sales and have financed our operations primarily through our IPO, private placements of preferred stock, convertible debt financings, borrowings under credit facilities, warrants and public common stock offerings and to a lesser extent, payments received in connection with various feasibility studies. We have devoted substantially all of our financial resources and efforts to research and development, including preclinical studies and clinical trials and engaging in activities to commercially launch our first FDA approved product, INVELTYS. Although we expect to continue to generate revenue from sales of INVELTYS, there can be no assurance that we will generate any such revenue or as to the timing of any such revenue, and we expect to continue to incur significant expenses and operating losses over the next several years. Our net losses may fluctuate significantly from quarter-to-quarter and year-to-year.

Financial Operations Overview

Research and Development Expenses

Research and development expenses consist of costs associated with our research activities, including compensation and benefits for full-time research and development employees, an allocation of facilities expenses, overhead expenses, payments to universities under our license agreements and other outside expenses. Our research and development expenses include:

- employee-related expenses, including salaries, related benefits, travel and stock-based compensation;
- expenses incurred for the preclinical and clinical development of our product candidates and under agreements with contract research organizations, or CROs, including costs of manufacturing product candidates prior to receipt of regulatory approval;
- facilities, depreciation and other expenses, which include direct and allocated expenses for rent and maintenance of facilities and supplies; and
- payments made under our third-party licensing agreements, including the annual minimum royalty and reimbursable expenses for defense of agreed upon patents under a license agreement with Johns Hopkins University, or JHU.

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The following table summarizes our research and development expenses incurred during the years ended December 31, 2018 and 2017:

	Year Ended December 31,	
	2018	2017
	(in thousands)	
KPI-121 development costs	\$ 14,698	\$ 18,968
Employee-related costs	12,712	7,935
Other research and development costs	1,880	2,105
Total research and development	<u>\$ 29,290</u>	<u>\$ 29,008</u>

We expense research and development costs as they are incurred. Research and development costs that are paid in advance of performance are capitalized as a prepaid expense until incurred. We track outsourced development costs by development program but do not allocate personnel costs, payments made under our license agreements or other costs to specific product candidates or development programs. These costs are included in Employee-related costs and Other research and development costs in the line items in the tables under “Results of Operations”.

We expect our research and development expenses to increase for the foreseeable future as we advance our product candidate, KPI-121 0.25%, toward regulatory approval, pursue other product candidates and conduct additional clinical trials. The process of conducting preclinical studies and clinical trials necessary to obtain regulatory approval is costly and time-consuming. We may never succeed in obtaining marketing approval for any of our product candidates. The probability of success for each product candidate may be affected by numerous factors, including preclinical data, clinical data, competition, manufacturing capability and commercial viability.

Our research and development programs are at various stages of development. Successful development and completion of clinical trials is uncertain and may not result in approved products. Completion dates and completion costs can vary significantly for each product candidate and future product candidate and are difficult to predict. We will continue to make determinations as to which product candidates to pursue and how much funding to direct to each product candidate on an ongoing basis in response to our ability to enter into collaborations with respect to each product candidate, the scientific and clinical success of each product candidate as well as ongoing assessments as to the commercial potential of product candidates. We will need to raise additional capital and may seek collaborations in the future to advance our various product candidates. Additional private or public financings may not be available to us on acceptable terms, or at all. Our failure to raise capital as and when needed would have a material adverse effect on our financial condition and our ability to pursue our business strategy.

Selling, General and Administrative Expenses

Selling, general and administrative expenses consist primarily of salaries and related benefits, including stock-based compensation, related to our commercial infrastructure and our executive, finance, legal, business development and support functions. Other general and administrative expenses include travel expenses, professional fees for auditing, tax, consultants and legal services and allocated facility-related costs not otherwise included in research and development expenses.

We anticipate that our selling, general and administrative expenses will increase in the future if and as we increase our headcount to support our continued research activities and development of our product candidates or additional product candidates and continue to build our commercial infrastructure to support the commercialization of INVELTYS or of any product candidates for which we obtain marketing approval, including KPI-121 0.25%. In addition, we anticipate increased expenses related to supporting a larger organization and increase in selling expense related to INVELTYS.

Interest Income

Interest income consists of interest earned on our cash balance held in a deposit account.

Interest Expense

Interest expense primarily consists of contractual coupon interest, amortization of debt discounts and debt issuance costs recognized on our debt facilities.

Loss on extinguishment of debt

Loss on extinguishment of debt primarily consists of unamortized debt issuance cost and a prepayment penalty on our debt facility entered into in 2014, or our 2014 Debt Facility.

Change in Fair Value of Warrant Liability

Prior to our IPO, we issued warrants for the purchase of our Series Seed, Series B and Series C preferred stock. These warrants were financial instruments that were issuable for contingently redeemable securities and were classified as liabilities. Upon the closing of our IPO, the underlying preferred stock was converted into common stock, the preferred stock warrants were converted into warrants for common stock, and the fair value of the warrant liability at that time was reclassified to additional paid-in capital.

Critical Accounting Policies and Significant Judgments and Estimates

Our management's discussion and analysis of our financial condition and results of operations is based on our financial statements, which we have prepared in accordance with U.S. generally accepted accounting principles. We believe that several accounting policies are important to understanding our historical and future performance. We refer to these policies as critical because these specific areas generally require us to make judgments and estimates about matters that are uncertain at the time we make the estimate, and different estimates—which also would have been reasonable—could have been used. On an ongoing basis, we evaluate our estimates and judgments, including those described in greater detail below. We base our estimates on historical experience and other market-specific or other relevant assumptions that we believe to be 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. Actual results may differ from these estimates under different assumptions or conditions.

While our significant accounting policies are described in more detail in the notes to our financial statements appearing at the end of this Annual Report on Form 10-K, we believe that the following accounting policies are those most critical to the judgments and estimates used in the preparation of our financial statements.

Leases

We elected to early adopt Accounting Standards Update, or ASU, 2016-02, *Leases or ASC 842*, effective January 1, 2018. Under this new lease standard, most leases are required to be recognized on the balance sheet as right-of-use assets and corresponding lease liabilities. We identified and assessed the following significant assumptions in recognizing the right-of-use asset and corresponding liability.

- *Expected lease term* - The expected lease term includes both contractual lease periods and, as applicable, cancelable option periods where failure to exercise such options would result in an economic penalty.
- *Incremental borrowing rate*- As our lease does not provide an implicit rate, we estimated the incremental borrowing rate based on a yield curve analysis, utilizing the interest rate derived from the fair value analysis of our recent Athyrium Credit Facility and adjusting it for factors that appropriately reflect the profile of secured borrowing over the expected term of the lease.

The standard has been implemented using the required modified retrospective approach and we have also elected to utilize the available practical expedients. In using the modified retrospective approach, we were required to recognize and measure leases existing at, or entered into after, the beginning of the earliest comparative period presented. Prior period results have been restated resulting in an immaterial impact on the consolidated balance sheet and

consolidated statement of cash flows. The adoption of this standard did not have a material impact on our consolidated statements of operations. On February 28, 2018 we entered into a lease for our new corporate headquarters located in Watertown, Massachusetts, which consists of 66,052 rentable square feet with an initial term of eight years and a five year renewal option.

Accrued Expenses

As part of the process of preparing our 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 on our behalf 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. We make estimates of our accrued expenses as of each balance sheet date in our 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 adjust if necessary. Examples of estimated accrued expenses include fees payable to:

- vendors for clinical development activities;
- providers of consulting and related services.

We record accruals related to development activities based on our estimates of the services received and efforts expended pursuant to the terms of our contractual arrangements. The financial terms of these agreements are subject to negotiation, vary from contract to contract and may result in uneven payment flows and expense recognition. Payments under some of these contracts depend on clinical trial milestones. There may be instances in which payments made to our vendors will exceed the level of services provided and result in a prepayment of the expense. In accruing service fees, we estimate the time 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, our understanding of the status and timing of services performed relative to the actual status and timing of services performed may vary and may result in reporting amounts that are too high or too low in any particular period. To date, there have not been any material adjustments to our prior estimates of accrued research and development expenses.

Stock-based Compensation and Common Stock Valuation

Stock-based Compensation

We measure stock options and other stock-based awards granted to employees and directors based on the fair value of the award on the date of the grant and recognize the corresponding compensation expense of those awards, net of forfeitures, over the requisite service period, which is generally the vesting period of the respective award.

We generally issue stock option awards with service-based vesting conditions and record the expense for these awards using the straight-line method. We measure stock-based awards granted to consultants and non-employees based on the fair value of the award on the date at which the related service is complete. Compensation expense is recognized over the period during which services are rendered by such consultants and non-employees until completed. At the end of each financial reporting period prior to completion of the service, we remeasure the fair value of these awards using the then-current fair value of our common stock and updated assumption inputs in the Black-Scholes option pricing model.

Performance-based option awards vest subject to the achievement of performance criteria as determined by management. These criteria are milestone events that are specific to our corporate goals. The fair value for each award is determined on the grant date and the expense is only recognized once probable that the performance condition will be met. If, and when, we determine it is probable that the performance condition will be achieved, compensation expense will be recognized from the date of grant through the fiscal year under which the requisite service period has been rendered.

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We recognize compensation expense for outstanding awards during the vesting period and account for the effect of forfeitures as they occur.

We estimate the fair value of each stock option grant using the Black-Scholes option-pricing model, which uses as inputs the fair value of our common stock and assumptions we make for the volatility of our common stock, the expected term of our stock options, the risk-free interest rate for a period that approximates the expected term of our stock options and our expected dividend yield.

Common Stock Valuation

Prior to our IPO, there was no public market for our common stock. The estimated fair value of our common stock was determined by our Board of Directors as of the date of each option grant, with input from management, considering our most recently available third-party valuations of common stock and our board of directors' assessment of additional objective and subjective factors that it believed were relevant and which may have changed from the date of the most recent valuation through the date of the grant. These third-party valuations were performed in accordance with the guidance outlined in the American Institute of Certified Public Accountants' Accounting and Valuation Guide, Valuation of Privately-Held-Company Equity Securities Issued as Compensation. Our common stock valuations were prepared using either a hybrid method, which used market approaches to estimate our enterprise value, or a probability-weighted expected return method, or PWERM, which used a combination of market approaches and a cost approach to estimate our enterprise value. The hybrid method is a PWERM where the equity value in one or more of the scenarios is calculated using an option-pricing method, or OPM. Under the PWERM methodology, the fair value of common stock was estimated based upon an analysis of future values for the Company, assuming various outcomes. The common stock value was based on the probability-weighted present value of expected future investment returns considering each of the possible outcomes available as well as the rights of each class of stock. The future value of the common stock under each outcome was discounted back to the valuation date at an appropriate risk-adjusted discount rate and probability weighted to arrive at an indication of value for the common stock.

In addition to considering the results of these third-party valuations, our board of directors considered various objective and subjective factors to determine the fair value of our common stock as of each grant date, which may have been as of a date later than the most recent third-party valuation date, including the prices at which we sold shares of preferred stock and the superior rights and preferences of securities senior to our common stock at the time of each grant, the progress of our research and development programs, external market conditions affecting and trends within the biotechnology industry and the likelihood of achieving a liquidity event.

The assumptions underlying these valuations represented management's best estimates, which involved inherent uncertainties and the application of management judgment.

Following the closing of our IPO, we have determined the fair value of our common stock based on the quoted market price of our common stock.

The following table summarizes our stock-based compensation expenses for employees and non-employee consultants' incurred during the years ended December 31, 2018 and 2017 (in thousands):

	Year Ended December 31,	
	2018	2017
Research and development	\$ 2,660	\$ 1,267
Selling, general and administrative	5,955	2,304
Total	<u>\$ 8,615</u>	<u>\$ 3,571</u>

As of December 31, 2018 and 2017, we had \$21.1 million and \$15.4 million of total unrecognized compensation expense, which is expected to be recognized over a weighted average remaining vesting period of approximately 2.84 years and 3.11 years. We expect the impact of our stock-based compensation expense for stock

options to employees and non-employee consultants to grow in future periods due to the potential increases in the value of our common stock and headcount.

Emerging Growth Company Status

In April 2012, the Jumpstart Our Business Startup Act, or JOBS Act, was enacted by the federal government. Section 107 of the JOBS Act provides that an emerging growth company can take advantage of the extended transition period for complying with new or revised accounting standards. Thus, an emerging growth company can delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have irrevocably elected not to avail ourselves of this extended transition period and, as a result, we will adopt new or revised accounting standards on the relevant dates on which adoption of such standards is required for other public companies.

Results of Operations

Comparison of the Years ended December 31, 2018 and 2017

The following table summarizes the results of our operations for the years ended December 31, 2018 and 2017:

	Year Ended December 31,		Change
	2018	2017	
	(in thousands)		
Operating expenses:			
Research and development	\$ 29,290	\$ 29,008	\$ 282
Selling, general and administrative	35,431	10,867	24,564
Total costs and expenses	64,721	39,875	24,846
Loss from operations	(64,721)	(39,875)	(24,846)
Other income (expense)			
Interest income	1,687	527	1,160
Interest expense	(3,314)	(1,019)	(2,295)
Loss on extinguishment of debt	(390)	—	(390)
Change in fair value of warrant liability	—	(1,844)	1,844
Net loss	\$ (66,738)	\$ (42,211)	\$ (24,527)

Research and Development Expenses

	Year Ended December 31,		Change
	2018	2017	
	(in thousands)		
KPI-121 development costs	\$ 14,698	\$ 18,968	\$ (4,270)
Employee-related costs	12,712	7,935	4,777
Other research and development costs	1,880	2,105	(225)
Total research and development	\$ 29,290	\$ 29,008	\$ 282

Research and development expenses were \$29.3 million for the year ended December 31, 2018 compared to \$29.0 million for the year ended December 31, 2017. Significant changes within research and development were a \$4.3 million decrease in KPI-121 development costs due to the decrease in external costs associated with the completion of our Phase 3 clinical trials of STRIDE 1 and STRIDE 2, our Phase 3 clinical trials of KPI-121 0.25% for the treatment of dry eye disease in 2017, partially offset by costs incurred for STRIDE 3, our additional Phase 3 clinical trial of KPI-121 0.25% which began during the year ended December 31 2018 and the Prescription Drug User Fee Act (PDUFA) fee paid in connection with the filing of our NDA for KPI-121 0.25%. Employee-related costs increased by \$4.8 million, comprised of a \$3.4 million increase related to additional clinical and regulatory and quality operations headcount, overall merit increases and a \$1.4 million increase in stock compensation expense from stock option grants. Other

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research and development costs decreased by \$0.2 million primarily associated with an \$0.5 million increase clinical consulting services and a \$0.7 million reduction in facility costs related to research and development.

Selling, General and Administrative Expenses

Selling, general and administrative expenses were \$35.4 million for the year ended December 31, 2018 compared to \$10.9 million for the year ended December 31, 2017, an increase of \$24.6 million. This increase was primarily due to a \$12.2 million increase in employee-related costs comprised of a \$8.6 million increase in selling, general and administrative salaries and benefits expenses due to the hiring of additional employees and overall merit increases, and a \$3.6 million increase in stock compensation expense related to increased stock options being granted during the year. Professional services associated with accounting and legal fees and other general administrative costs increased by \$2.0 million as a result of operating as a public company for the full year ended December 31, 2018. Costs associated with the building of our commercial organization in advance of the launch of INVELTYS in early 2019 increased by \$9.3 million and our facility costs increased by \$1.1 million due to additional leased space, commencement of our Watertown lease and a larger allocation of our overall facility-related costs.

Interest Income

Interest income was \$1.7 million for the year ended December 31, 2018 compared to \$0.5 million for the year ended December 31, 2017, an increase of \$1.2 million. Interest income consists of interest earned on our cash balance held in an interest bearing deposit account. The increase was attributable to a higher interest rate and higher average cash balance during the year ended December 31, 2018 due to receipt of the proceeds from the sale of our common stock in at-the-market equity offerings in the fourth quarter of 2018, from the sale of shares of our common stock in an underwritten offering in October 2018 and from our Athyrium Credit Facility in October 2018.

Interest Expense

Interest expense was \$3.3 million for the year ended December 31, 2018 compared to \$1.0 million for the year ended December 31, 2017, an increase of \$2.3 million. The interest expense was comprised of the contractual coupon interest and the amortization of the debt discount associated with our 2014 Debt Facility and our Athyrium Credit Facility. The increase was primarily due to the October 2018 draw down of \$75.0 million under the Athyrium Credit Facility.

Loss on extinguishment of debt

The loss of extinguishment of debt was \$0.4 million for the year ended December 31, 2018. There was no loss on extinguishment of debt for the year ended December 31, 2017. Upon the repayment in full of the principal balance and related outstanding interest under the 2014 Debt Facility, the unamortized debt discount and prepayment penalty was recorded as loss on extinguishment of debt for the year ended December 31, 2018.

Change in Fair Value of Warrant Liability

The change in the fair value of our preferred stock warrant liability consisted of no gain or loss for the year ended December 31, 2018 compared with a loss of \$1.8 million for the year ended December 31, 2017. The loss for the year ended December 31, 2017 was the result of an increase in the fair value of the underlying preferred stock prior to our IPO. Upon closing of the IPO, the underlying preferred stock was converted into common stock, the preferred stock warrants were converted into warrants for common stock, and the fair value of the warrant liability at that time was reclassified to additional paid-in capital.

Liquidity and Capital Resources

Since our inception, we have incurred significant operating losses. We are in the process of commercializing our first FDA-approved product, INVELTYS, and we did not generate revenue from sales of any product before 2019. We have funded our operations to date with proceeds from our IPO, private placements of preferred stock, convertible

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debt financings, borrowings under credit facilities, warrants and public common stock offerings and to a lesser extent, payments received in connection with various feasibility studies.

In July 2017, we completed our IPO pursuant to which we issued and sold 6,900,000 shares of our common stock, which included 900,000 shares sold pursuant to the exercise of the underwriters' option to purchase additional shares, at a price of \$15.00 per share. We received net proceeds of \$94.0 million after deducting underwriting discounts and commission of \$7.3 million and offering costs incurred in 2017 of \$2.2 million.

On November 20, 2014, we entered into our 2014 Debt Facility for a total loan commitment of \$10.0 million, of which we borrowed \$5.0 million upon closing of the loan and another \$5.0 million in July 2015. Under the terms of the agreement, the borrowings accrued interest at an annual rate equal to the greater of (i) 3.00% above the prime rate then in effect, or (ii) 6.25%. On October 13, 2016, we entered into a first amendment to the 2014 Debt Facility, or the First Amendment, which reaffirmed the initial commitment of \$10.0 million in funding and increased our borrowing capacity through the commitment of an additional \$10.0 million in funding, or the Term Loan B. The availability of the Term Loan B was contingent upon receipt of positive results sufficient to support an NDA submission, with no significant treatment-related safety findings, from our second Phase 3 clinical trials of INVELTYS for the treatment of inflammation and pain following ocular surgery prior to October 13, 2017. On September 28, 2017, we drew down the Term Loan B. The 2014 Debt Facility provided for interest-only payments through October 13, 2017. In November 2017, we formed a wholly owned subsidiary, Kala Pharmaceuticals Security Corporation, a Massachusetts corporation for the sole purpose of buying, selling and holding securities on our behalf. On November 22, 2017, we entered into a Second Amendment to the 2014 Debt Facility to account for the formation of this wholly-owned subsidiary. On March 29, 2018, we entered into a Third Amendment to the 2014 Debt Facility, which reaffirmed the initial commitment to a total of \$20.0 million of funding, increased our total borrowing capacity by an additional \$5.0 million and extended the interest-only end date for 12 months following the execution of the Third Amendment. The maturity date of the 2014 Debt Facility was also extended from October 13, 2020 to March 29, 2022. On October 1, 2018, we repaid in full the principal balance and related outstanding interest under the 2014 Debt Facility. The unamortized debt discount and prepayment penalty were recorded as loss on extinguishment of debt.

On August 9, 2018, the Company filed a Shelf Registration with the SEC, which was declared effective on August 27, 2018. Under the Shelf Registration, the Company may offer and sell up to \$250.0 million of a variety of securities including common stock, preferred stock, warrants, depositary shares, debt securities, purchase contracts, purchase units or any combination of such securities during the three-year period that commenced upon the Shelf Registration becoming effective. Under the Shelf Registration, the Company may periodically offer one or more types of securities in amounts, at prices and on terms announced, if and when the securities are ever offered.

On October 5, 2018, the Company sold 7,500,000 shares of the Company's common stock in an underwritten offering pursuant to the Shelf Registration at a public offering price of \$8.25 per share, before underwriting discounts and commissions. In addition, the underwriters were granted an overallotment option to purchase an additional 1,125,000 shares of the common stock at the same public offering price, less underwriting discounts and commissions. On October 11, 2018, the underwriters exercised in full their option to purchase the overallotment shares. The total number of shares sold by the Company in the offering was 8,625,000 shares, resulting in net proceeds to the Company, after underwriting discounts and offering expenses, of approximately \$66.1 million.

In connection with the filing of the Shelf Registration, the Company entered into a sales agreement with Jefferies, LLC pursuant to which the Company may issue and sell, from time to time, up to an aggregate of \$50.0 million of its common stock in an at-the-market equity offering, or ATM Offering, through Jefferies, LLC, as sales agent. As of December 31, 2018, the Company issued 518,135 shares of its common stock under the ATM Offering at the average price of \$9.41 per share, resulting in net proceeds to the Company of approximately \$4.6 million.

On October 1, 2018, we entered into a \$110 million Athyrium Credit Facility. The Athyrium Credit Facility provides for a Term Loan A in the aggregate principal amount of \$75.0 million, and an Athyrium Term Loan B in the aggregate principal amount of \$35.0 million. On October 1, 2018, we borrowed the entire principal amount of the Term Loan A. We may draw down the Athyrium Term Loan B upon either (i) FDA approval of KPI-121 0.25% for a dry eye disease indication or (ii) reaching certain net product revenues for INVELTYS, in each case on or prior to June 30, 2020.

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The maturity date of the Athyrium Credit Facility is October 1, 2024, the six-year anniversary of the close. The Term Loan A bears interest at a rate of 9.875% per annum, with quarterly, interest-only payments until the fourth anniversary of the Term Loan A. The unpaid principal amount of the Term Loan A is due and payable in quarterly installments starting at the end of the fourth anniversary of the loan.

Cash Flows

As of December 31, 2018 and 2017, we had \$170.9 million and \$114.6 million in cash on hand and \$75.0 million and \$18.9 million in indebtedness, respectively. The indebtedness represents the aggregate outstanding principal amount under the Athyrium Credit Facility and 2014 Debt Facility, respectively.

The following table summarizes our sources and uses of cash for each of the periods presented:

	Year Ended	
	December 31,	
	2018	2017
	(in thousands)	
Net cash used in operating activities	\$ (54,121)	\$ (34,098)
Net cash used in investing activities	(1,578)	(480)
Net cash provided by financing activities	124,104	103,696
Increase in cash and restricted cash	<u>\$ 68,405</u>	<u>\$ 69,118</u>

Operating Activities

During the year ended December 31, 2018, our cash used in operating activities was primarily due to our net loss of \$66.7 million as we incurred external research and development costs associated with our clinical trials and selling, general and administrative costs partially offset by non-cash charges of \$10.2 million, consisting primarily of a \$1.2 million related to amortization of the right-of-use assets, debt discount and depreciation, \$8.6 million in stock-based compensation, \$0.4 million in loss for extinguishment of the 2014 Debt Facility and net cash provided by changes in our operating assets and liabilities of \$2.4 million. The changes in our operating assets and liabilities of \$2.4 million primarily due to an increase of \$8.6 million in accrued expenses and accounts payable partially offset by a decrease of \$0.4 million in lease liabilities and other long-term liabilities primarily due to principal lease payments, and an increase of \$5.8 million primarily driven by inventory related to INVELTYS and receivable related to the construction of our Watertown facility. The increase in accrued expenses was primarily a result of an increase in amounts accrued for compensation and benefits related expenses, contract manufacturing expense, payable related to the construction of our Watertown facility and professional services offset by lower accruals for clinical and regulatory consulting expenses for our clinical trials, and the increase in accounts payable was primarily a result of increase in volume of expenses related to our contract manufacturer, expenses incurred on behalf of our landlord for construction of our Watertown facility, and the timing of vendor invoices and payments.

During the year ended December 31, 2017, our cash used in operating activities was primarily due to our net loss of \$42.2 million as we incurred external research and development costs associated with our clinical trials and selling, general and administrative costs partially offset by non-cash charges of \$6.2 million, consisting primarily of a \$1.8 million increase in fair value of warrant liability and \$3.6 million in stock-based compensation and net cash provided by changes in our operating assets and liabilities of \$1.9 million. Net cash provided by changes in our operating assets and liabilities was primarily due to an increase of \$2.6 million in accrued expenses, partially offset by an increase of \$0.5 million in prepaid expenses primarily as a result of prepayments made in connection with director and officer insurance policies. The increase in accrued expense was primarily a result of an increase in amounts accrued for clinical and regulatory consulting support for our clinical trials and support for our NDA submission for INVELTYS and the increase in accounts payable was a result of the timing of vendor invoices and payments.

Investing Activities

Net cash used in investing activities for all periods presented consists of purchases of property and equipment, primarily laboratory and manufacturing equipment. Purchases of property and equipment were \$1.6 million and \$0.5 million for the years ended December 31, 2018 and 2017, respectively.

Financing Activities

Net cash provided by financing activities was \$124.1 million for the year ended December 31, 2018, consisting of \$70.8 million from our underwritten offerings of common stock net of underwriting discounts, commissions and offering costs, \$2.7 million from our 2014 Debt Facility, \$72.0 million from our Athyrium Credit Facility net of debt discounts and debt issuance costs, and \$0.5 million from the exercise of stock options, offset by repayment of our 2014 Debt Facility of \$21.8 million.

Net cash provided by financing activities was \$103.7 million for the year ended December 31, 2017, consisting of \$94.0 million of IPO proceeds, net of underwriting discounts, commissions and offering costs, \$10.0 million in funding from the September 2017 draw down of the Term Loan B of our 2014 Debt Facility and \$0.8 million in proceeds from the exercise of stock options and warrants, partially offset by \$1.1 million in principal payments toward the 2014 Debt Facility.

Funding Requirements

We anticipate that our expenses will increase substantially as compared to prior periods with the January 2019 launch and commercialization of INVELTYS in the United States and as we seek to engage in activities to prepare for commercialization of our lead product candidate, KPI-121 0.25%, for the short-term treatment of signs and symptoms of dry eye disease, as a result of increased headcount, including management personnel to support our clinical, manufacturing and commercialization activities, expanded infrastructure, increased legal, compliance, accounting and investor and public relations expenses associated with being a public company and increased insurance premiums, among other factors. Our license agreement with JHU, under which we license certain of our patent rights and a significant portion of the technology for INVELTYS and KPI-121 0.25%, imposes royalty and other financial obligations on us, and we may enter into additional licensing and funding arrangements with third parties that may impose milestone payment, royalty, insurance and other obligations on us.

Our expenses will also increase if and as we:

- continue to commercialize INVELTYS in the United States and seek regulatory approval for INVELTYS outside of the United States;
- continue to grow our sales, marketing and distribution capabilities during the commercialization of INVELTYS and any product candidates for which we may submit for and obtain marketing approval;
- conduct any necessary clinical trials and other development activities and/or seek marketing approvals for KPI-121 0.25% and any other product candidates;
- continue development of KPI-121 0.25%, including conducting our ongoing Phase 3 clinical trial, and/or seek marketing approvals for KPI-121 0.25% and any other product candidates;
- pursue the clinical development of KPI-121 for the treatment of other additional indications or for use in other patient populations or, if approved, seek to broaden the label of KPI-121;
- pursue the preclinical and clinical development of product candidates, including our rTKI program, for use in the treatment of retinal diseases;

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- expand our sales, marketing and distribution capabilities for our other product candidates, prior to or upon receiving marketing approval;
- continue to scale up our manufacturing processes and capabilities to support commercialization of INVELTYS, and any of our product candidates, including KPI-121 0.25%, for which we seek and/or obtain marketing approval;
- leverage our proprietary AMPPLIFY technology to advance additional potential high-value therapeutics into preclinical and clinical development;
- in-license or acquire the rights to other products, product candidates or technologies;
- maintain, expand and protect our intellectual property portfolio;
- hire additional clinical, quality control, scientific, manufacturing, commercial and management personnel;
- expand our operational, financial and management systems and increase personnel, including personnel to support our clinical development, manufacturing and commercialization efforts and our operations as a public company; and
- increase our product liability insurance coverage as we initiate and expand our commercialization efforts.

We believe that our existing cash on hand as of December 31, 2018 will enable us to fund our planned operating expenses, debt service obligations and capital expenditure requirements for at least the next 12 months. We have based these estimates on assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we expect.

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 achieve profitability. Our expenses will increase from what we anticipate if:

- we elect to or are required by the FDA or non-U.S. regulatory agencies to perform clinical trials or studies in addition to those expected;
- there are any delays in enrollment of patients in or completing our clinical trials or the development of our product candidates; or
- there are any third-party challenges to our intellectual property portfolio, or the need arises to defend against intellectual property-related claims or enforce our intellectual property rights.

Our ability to become and remain profitable depends on our ability to generate revenue. While we began to generate revenue from the sales of INVELTYS in January 2019, there can be no assurance as to the amount or timing of any such revenue, and we may not achieve profitability for several years, if at all. Achieving and maintaining profitability will require us to be successful in a range of challenging activities, including:

- successful launching of INVELTYS, including by further developing our sales force, marketing and distribution capabilities;
- achieving an adequate level of market acceptance, and obtaining and maintaining coverage and adequate reimbursement from third-party payors for INVELTYS and any other products we commercialize;
- obtaining marketing approval for KPI-121 0.25% or any other product candidates;

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- manufacturing at commercial scale, marketing, selling and distributing INVELTYS or any product candidates for which we obtain marketing approval, including KPI-121 0.25%;
- maintaining regulatory and marketing approvals for INVELTYS and for any other product candidates for which we obtain approval;
- hiring and building a full commercial organization required for the marketing, selling and distributing for those products which we obtain marketing approval; and
- obtaining, maintaining and protecting our intellectual property rights.

INVELTYS is our only product that has been approved for sale and it has only been approved in the United States for the treatment of inflammation and pain following all ocular surgery. Our ability to generate revenue from operations will depend, in part, on the timing and success of commercial sales of INVELTYS, which we commercially launched in the United States in January 2019. However, the successful commercialization of INVELTYS in the United States is subject to many risks. We are currently undertaking our first commercial launch with INVELTYS, and we may not be able to do so successfully. There are numerous examples of unsuccessful product launches and failures to meet expectations of market potential, including by pharmaceutical companies with more experience and resources than us. We do not anticipate our revenue from sales of INVELTYS alone will be sufficient for us to become profitable for several years, if at all.

We may never succeed in these activities and may never generate revenue that is sufficient to achieve profitability. Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable would decrease the value of our company and could impair our ability to raise capital, expand our business, maintain our research and development efforts, diversify our product offerings or even continue our operations. A decline in the value of our company could also cause you to lose all or part of your investment.

Until such time, if ever, as we can generate substantial product revenues, we expect to finance our cash needs through a combination of equity offerings, debt financings, collaborations, strategic alliances, licensing arrangements, royalty agreements, and marketing and distribution arrangements. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect your rights as a common stockholder. The lenders under our Athyrium Credit Facility are currently entitled to exercise warrants for up to 184,660 shares of common stock. If we draw down on the remaining \$35.0 million of potentially available borrowings under our Athyrium Credit Facility, the lenders thereunder will be entitled to exercise warrants for up to an additional 86,175 shares of our common stock. Your ownership interest will be diluted to the extent any such warrants are exercised. Debt financing and preferred equity financing, if available, may involve agreements that include pledging of assets as collateral, covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. Our pledge of our assets as collateral to secure our obligations under our Athyrium Credit Facility may limit our ability to obtain additional debt financing. Under our Athyrium Credit Facility, we are also restricted from paying dividends on our common stock without the lenders' consent.

If we raise additional funds through collaborations, strategic alliances, licensing arrangements, royalty agreements, or marketing and distribution arrangements, 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 current or future commercialization efforts or grant rights to develop and market products or product candidates that we would otherwise prefer to develop and market ourselves.

Off-Balance Sheet Arrangements

We did not have during the periods presented, and we do not currently have, any off-balance sheet arrangements, as defined in the rules and regulations of the Securities and Exchange Commission.

Recently Issued Accounting Pronouncements

From time to time the Financial Accounting Standards Board, or FASB, or other standard-setting bodies, issue new accounting pronouncements. Where applicable, we adopt these new standards according to the specified effective dates. Unless otherwise disclosed in Note 2 to the financial statements appearing at the end of this Annual Report on Form 10-K, we believe that the impact of any recently issued standard(s) that are not yet effective will not have a material impact on our financial position or results of operation upon adoption.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

We did not hold any cash equivalents or investments as of December 31, 2018. As of December 31, 2018, the 2014 Debt Facility was repaid in full with proceeds from the Athyrium Credit Facility, which has a fixed interest rate of 9.875% per annum.

Item 8. Financial Statements and Supplementary Data

Our financial statements, together with the report of our independent registered public accounting firm, appear on pages F-1 through F-33 of this Annual Report on Form 10-K.

Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures.

Evaluation of disclosure controls and procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2018. The term “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a 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 Securities and Exchange Commission’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a 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 and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of December 31, 2018, our Chief Executive Officer and Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Management’s annual report on internal control over financial reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting for the company. Internal control over financial reporting is defined in Rule 13a-15(f) or 15d-15(f) promulgated under the Securities and Exchange Act of 1934, or Exchange Act, as a process designed by, or under the supervision of, the company’s principal executive and principal financial officers and effected by the company’s board

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of directors, management and other personnel, 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 includes those policies and procedures that:

- Pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the company;
- 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
- 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. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation. 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.

Our management assessed the effectiveness of our internal control over financial reporting as of December 31, 2018. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control—Integrated Framework (2013). Based on that assessment, our management concluded that, as of December 31, 2018, our internal control over financial reporting was effective.

As an “emerging growth company”, as defined in the JOBS Act, our independent registered public accounting firm is not required to issue an attestation report on the internal control over financial reporting.

Changes in internal control over financial reporting

No change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) occurred during the fourth quarter ended December 31, 2018 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

On March 11, 2019, we entered into amendments to the offer letters of Messrs. Iwicki, Bazemore, Brazzell, and Trachtenberg, and Ms. Reumuth and Chen. The amendments adjust the severance benefits that these executives would be entitled to receive for a termination without Cause or a resignation with Good Reason (both as defined in the applicable offer letter) to: (i) 12 months of base salary (24 months for Mr. Iwicki); (ii) 100% of the target bonus for the year of termination or resignation (200% for Mr. Iwicki); (iii) a pro-rata bonus for the year of termination; (iv) COBRA continuation medical benefits at active employee rates for 12 months following termination (24 months for Mr. Iwicki); and (v) outplacement services. The amendments also provide that, if the termination without Cause or resignation with Good Reason occurs during the 24 month period following a Change of Control (as defined in the applicable offer letter), the severance benefits that these executives would be entitled to receive would be: (i) 18 months of base salary (30 months for Mr. Iwicki); (ii) 150% (250% for Mr. Iwicki) of the greater of (A) the average bonus the executive received during the two years prior to termination or resignation, or (B) the target bonus for the year of termination or resignation; (iii) a pro-rata bonus for the year of termination; (iv) COBRA continuation medical benefits at active employee rates for 18 months following termination (30 months for Mr. Iwicki); and (v) and outplacement services.

In addition, Mr. Iwicki's offer letter was amended to provide that, upon a termination without Cause or a resignation with Good Reason or termination as a result of Mr. Iwicki's death or disability, he shall be entitled to the automatic vesting and exercisability of any equity awards that would have vested if his employment or other service

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relationship with us had continued for 24 months following such termination or resignation, the post-termination exercise period of his vested options shall be extended to 18 months following the termination of his Business Relationship (as defined in the Offer Letter) with the Company. The offer letters of Mr. Iwicki and Mr. Brazzell were amended to provide that all equity awards granted following a Change of Control will automatically vest and become exercisable upon a termination without Cause or a resignation with Good Reason during the 24-month period following a Change of Control.

The offer letters of Mr. Bazemore, Mr. Trachtenberg, Ms. Reumuth, and Ms. Chen were amended to provide for the automatic vesting and exercisability of all of such executive's equity awards that vest solely based on his or her continued employment, following a termination without Cause or a resignation with Good Reason during the 24-month period following a Change of Control.

The offer letters for Mr. Brazzell, Mr. Trachtenberg, Ms. Reumuth, and Ms. Chen were also amended to provide that certain payments made in connection with a Change of Control to which Section 4999 of the Internal Revenue Code of 1986, as amended, or the Code, apply will be reduced to three times the executive's "base amount" (as defined in Section 280G of the Code) to the extent that Mr. Brazzell, Mr. Trachtenberg, Ms. Reumuth, or Ms. Chen, as applicable, would be better off on an after-tax basis with such reduced payments.

Part III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this Item is incorporated by reference from the information that will be contained in our Proxy Statement for our 2019 Annual Meeting of Stockholders, which we intend to file with the SEC within 120 days of the end of the fiscal year to which this Annual Report on Form 10-K relates pursuant to General Instruction G(3) of Form 10-K.

Item 11. Executive Compensation

The information required by this Item is incorporated by reference from the information that will be contained in our Proxy Statement for our 2019 Annual Meeting of Stockholders, which we intend to file with the SEC within 120 days of the end of the fiscal year to which this Annual Report on Form 10-K relates pursuant to General Instruction G(3) of Form 10-K.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this Item is incorporated by reference from the information that will be contained in our Proxy Statement for our 2019 Annual Meeting of Stockholders, which we intend to file with the SEC within 120 days of the end of the fiscal year to which this Annual Report on Form 10-K relates pursuant to General Instruction G(3) of Form 10-K.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this Item is incorporated by reference from the information that will be contained in our Proxy Statement for our 2019 Annual Meeting of Stockholders, which we intend to file with the SEC within 120 days of the end of the fiscal year to which this Annual Report on Form 10-K relates pursuant to General Instruction G(3) of Form 10-K.

Item 14. Principal Accounting Fees and Services

The information required by this Item is incorporated by reference from the information that will be contained in our Proxy Statement for our 2019 Annual Meeting of Stockholders, which we intend to file with the SEC within 120 days of the end of the fiscal year to which this Annual Report on Form 10-K relates pursuant to General Instruction G(3) of Form 10-K.

Part IV

Item 15. Exhibits, Financial Statement Schedules

(1) **Financial Statements.**

The following documents are included beginning on page F-1 attached hereto and are filed as part of this Annual Report on Form 10-K.

**KALA PHARMACEUTICALS, INC.
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS**

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Consolidated Balance Sheets as of December 31, 2018 and 2017	F-2
Consolidated Statements of Operations for the years ended December 31, 2018 and 2017	F-3
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(2) **Financial Statement Schedules.**

No financial statement schedules have been filed as part of this Annual Report on Form 10-K because they are not applicable, not required or because the information is otherwise included in our financial statements or notes thereto.

(3) **Exhibits.**

The following is a list of exhibits filed or furnished as part of this Annual Report on Form 10-K.

<u>Exhibit Number</u>	<u>Description of Exhibit</u>
3.1	Restated Certificate of Incorporation of the Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's current report on Form 8-K (File No. 001-38150) filed on July 25, 2017)
3.2	Amended and Restated By-laws of the Registrant (incorporated by reference to Exhibit 3.2 to the Registrant's current report on Form 8-K (File No. 001-38150) filed on July 25, 2017)
4.1	Specimen Stock Certificate evidencing the shares of common stock (incorporated by reference to Exhibit 4.1 to the Registrant's registration statement on Form S-1/A (File No. 333-218936) filed on July 10, 2017)
4.2	Third Amended and Restated Registration Rights Agreement of the Registrant, as amended (incorporated by reference to Exhibit 10.1 to the Registrant's registration statement on Form S-1 (File No. 333-218936) filed on June 23, 2017)
10.1+	2009 Employee, Director and Consultant Equity Incentive Plan (incorporated by reference to Exhibit 10.1 to the Registrant's registration statement on Form S-1 (File No. 333-218936) filed on June 23, 2017)
10.2+	Form of Stock Option Agreement under the 2009 Employee, Director and Consultant Equity Incentive Plan (incorporated by reference to Exhibit 10.2 to the Registrant's registration statement on Form S-1 (File No. 333-218936) filed on June 23, 2017)
10.3*+	Amended and Restated 2017 Employee Stock Purchase Plan
10.4+	2017 Equity Incentive Plan (incorporated by reference to Exhibit 10.4 to the Registrant's registration statement on Form S-1/A (File No. 333-218936) filed on July 10, 2017)
10.5+	Form of Incentive Stock Option Agreement under 2017 Equity Incentive Plan (incorporated by reference to Exhibit 10.5 to the Registrant's registration statement on Form S-1/A (File No. 333-218936) filed on July 10, 2017)

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Exhibit Number	Description of Exhibit
10.6+	Forms of Non-Qualified Option Agreement under 2017 Equity Incentive Plan (incorporated by reference to Exhibit 10.6 to the Registrant's registration statement on Form S-1/A (File No. 333-218936) filed on July 10, 2017)
10.7†	Exclusive License Agreement, dated November 10, 2009, by and between the Registrant and The Johns Hopkins University, as amended by the First Amendment dated November 19, 2012, the Second Amendment dated May 23, 2014 and the Third Amendment dated August 26, 2014 (incorporated by reference to Exhibit 10.7 to the Registrant's registration statement on Form S-1 (File No. 333-218936) filed on June 23, 2017)
10.8†	Settlement and License Agreement, dated October 24, 2014, by and between the Registrant and GrayBug, LLC (incorporated by reference to Exhibit 10.8 to the Registrant's registration statement on Form S-1 (File No. 333-218936) filed on June 23, 2017)
10.9+	Inducement Stock Option Agreement by and between the Registrant and Eric L. Trachtenberg (incorporated by reference to Exhibit 10.2 to the Registrant's quarterly report on Form 10-Q (File No. 001-38150) filed on August 9, 2018)
10.10+	Letter Agreement, dated March 25, 2018, by and between the Registrant and Eric L. Trachtenberg (incorporated by reference to Exhibit 10.3 to the Registrant's quarterly report on Form 10-Q (File No. 001-38150) filed on August 9, 2018)
10.11+	Amended and Restated Letter Agreement, dated September 10, 2015, by and between the Registrant and Mark Iwicki, as amended by the First Amendment, dated September 28, 2017 (incorporated by reference to Exhibit 10.1 to the Registrant's quarterly report on Form 10-Q (File No. 011-38150) filed on November 7, 2017)
10.12+	Letter Agreement, dated November 6, 2017, by and between the Registrant and Todd Bazemore (incorporated by reference to Exhibit 10.12 of the Registrant's annual report on Form 10-K (File No. 011-38150) filed on April 2, 2018)
10.13+	Amended and Restated Letter Agreement, dated May 10, 2016, by and between the Registrant and Kim Brazzell (incorporated by reference to Exhibit 10.13 to the Registrant's registration statement on Form S-1 (File No. 333-218936) filed on June 23, 2017)
10.14+	Form of Indemnification Agreement between the Registrant and each of its Executive Officers and Directors (incorporated by reference to Exhibit 10.14 to the Registrant's registration statement on Form S-1/A (File No. 333-218936) filed on July 10, 2017)
10.15†	Exclusive License Agreement, effective as of May 1, 2017, by and between the Registrant and The Johns Hopkins University (incorporated by reference to Exhibit 10.15 to the Registrant's registration statement on Form S-1 (File No. 333-218936) filed on June 23, 2017)
10.16†	Assignment, dated April 26, 2017, by and between the Registrant and The Johns Hopkins University (incorporated by reference to Exhibit 10.16 to the Registrant's registration statement on Form S-1 (File No. 333-218936) filed on June 23, 2017)
10.17†	Assignment, dated April 26, 2017, by and between the Registrant and The Johns Hopkins University (incorporated by reference to Exhibit 10.17 to the Registrant's registration statement on Form S-1 (File No. 333-218936) filed on June 23, 2017)
10.18†	Amended and Restated Master Services Agreement, dated October 4, 2017, by and between the Registrant and Alliance Contract Pharma, LLC (incorporated by reference to Exhibit 10.18 of the Registrant's annual report on Form 10-K (File No. 011-38150) filed on April 2, 2018)
10.19†	Commercial Supply Agreement, dated June 27, 2016, by and between the Registrant and Catalent Pharma Solutions, LLC (incorporated by reference to Exhibit 10.19 to the Registrant's registration statement on Form S-1 (File No. 333-218936) filed on June 23, 2017)
10.20†	Manufacturing and Supply Agreement, dated January 10, 2017, by and between the Registrant and Chemo Iberica SA (incorporated by reference to Exhibit 10.20 to the Registrant's registration statement on Form S-1 (File No. 333-218936) filed on June 23, 2017)
10.21†	Amendment No. 1 to Commercial Supply Agreement, dated February 16, 2018, by and between the Registrant and Catalent Pharma Solutions, LLC (incorporated by reference to Exhibit 10.21 of the Registrant's annual report on Form 10-K (File No. 011-38150) filed on April 2, 2018)

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Exhibit Number	Description of Exhibit
10.22	Lease, dated as of February 28, 2018, by and between the Registrant and 480 Arsenal Group LLC (incorporated by reference to Exhibit 10.1 to the Registrant's current report on Form 8-K filed on March 12, 2018)
10.23†	Fourth Amendment to Exclusive License Agreement, dated June 22, 2018, by and between the Johns Hopkins University and the Registrant (incorporated by reference to Exhibit 10.1 to the Registrant's quarterly report on Form 10-Q (File No. 001-38150) filed on August 9, 2018)
10.24	Credit Agreement, dated as of October 1, 2018, among the Registrant, as the Borrower, certain subsidiaries of the Borrower, as the Guarantors, Athyrium Opportunities III Acquisition LP, as the Administrative Agent, and the lenders (incorporated by reference to Exhibit 10.1 to the Registrant's current report on Form 8-K (File No. 001-38150) filed on October 2, 2018)
10.25	Security Agreement, dated October 1, 2018, by and among the Registrant and Athyrium Opportunities III Acquisition LP (incorporated by reference to Exhibit 10.2 to the Registrant's current report on Form 8-K (File No. 001-38150) filed on October 2, 2018)
10.26	Pledge Agreement, dated October 1, 2018, by and among the Registrant and Athyrium Opportunities III Acquisition LP (incorporated by reference to Exhibit 10.3 to the Registrant's current report on Form 8-K (File No. 001-38150) filed on October 2, 2018)
10.27	Common Stock Purchase Warrant, dated October 1, 2018, by and among the Registrant and Athyrium Opportunities III Acquisition LP (incorporated by reference to Exhibit 10.4 to the Registrant's current report on Form 8-K (File No. 001-38150) filed on October 2, 2018)
10.28+	Form of Inducement Stock Option Agreement (incorporated by reference to Exhibit 10.1 to the Registrant's quarterly report on Form 10-Q (File No. 001-38150) filed on November 8, 2018)
10.29	Sales Agreement, dated August 9, 2018, by and between the Registrant and Jefferies LLC (incorporated by reference to Exhibit 1.2 to the Registrant's registration statement on Form S-3 (File No. 333-226748) filed on August 9, 2018)
10.30*+	Form of Amendment to Offer Letters
21.1*	Subsidiaries of the Registrant
23.1*	Consent of Deloitte & Touche LLP
31.1*	Rule 13a-14(a) Certification of Principal Executive Officer
31.2*	Rule 13a-14(a) Certification of Principal Financial Officer
32.1*	Certification of Principal Executive Officer pursuant to 18 U.S.C. §1350
32.2*	Certification of Principal Financial Officer pursuant to 18 U.S.C. §1350
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 Label Linkbase Document.
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document.

* Filed herewith.

† Confidential treatment granted as to portions of the exhibit. Confidential materials omitted and filed separately with the Securities and Exchange Commission.

+ Management contract or compensatory plan or arrangement filed in response to Item 15(a)(3) of the Instructions to the Annual Report on Form 10-K.

Item 16. Form 10-K Summary

None.

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.

KALA PHARMACEUTICALS, INC..

Dated: March 12, 2019

By: /s/ Mark Iwicki
Mark Iwicki
*Chief Executive Officer, President and
Chairman of the Board of Directors*

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

<u>/s/ Mark Iwicki</u> Mark Iwicki	President, Chief Executive Officer and Chairman of Board of Directors (Principal Executive Officer)	March 12, 2019
<u>/s/ Mary Reumuth</u> Mary Reumuth	Chief Financial Officer (Principal Financial and Accounting Officer)	March 12, 2019
<u>/s/ Gregory Grunberg</u> Gregory Grunberg, M.D.	Director	March 12, 2019
<u>/s/ Andrew I. Koven</u> Andrew I. Koven	Director	March 12, 2019
<u>/s/ Robert Paull</u> Robert Paull	Director	March 12, 2019
<u>/s/ Greg Perry</u> Greg Perry	Director	March 12, 2019
<u>/s/ Howard Rosen</u> Howard Rosen	Director	March 12, 2019
<u>/s/ Rajeev Shah</u> Rajeev Shah	Director	March 12, 2019

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of Kala Pharmaceuticals, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Kala Pharmaceuticals, Inc. and subsidiaries (the “Company”) as of December 31, 2018 and 2017, the related consolidated statements of operations, convertible preferred stock and stockholders’ equity (deficit), and cash flows for each of the two years in the period ended December 31, 2018 and the related notes (collectively referred to as the “financial statements”). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2018, in conformity with accounting principles generally accepted in the United States of America.

Change in Accounting Principle

As discussed in Note 2 to the consolidated financial statements, the Company has changed its method for accounting for leases in fiscal year 2018 due to the adoption of ASU 2016-02, *Leases (Topic 842)*, as amended. The Company adopted the new lease standard using a modified retrospective approach.

Basis for Opinion

These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Deloitte & Touche LLP

Boston, Massachusetts
March 12, 2019

We have served as the Company's auditor since 2013.

PART I – FINANCIAL INFORMATION**Item 1. Consolidated Financial Statements.****KALA PHARMACEUTICALS, INC.****CONSOLIDATED BALANCE SHEETS****(In thousands, except share and per share amounts)**

	<u>December 31,</u> <u>2018</u>	<u>December 31,</u> <u>2017</u>
Assets		
Current assets:		
Cash	\$ 170,898	\$ 114,565
Inventory	4,095	—
Prepaid expenses and other current assets	2,035	648
Total current assets	<u>177,028</u>	<u>115,213</u>
Noncurrent assets:		
Property and equipment, net	2,166	786
Right-of-use assets	29,566	413
Restricted cash	12,206	134
Total assets	<u>\$ 220,966</u>	<u>\$ 116,546</u>
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	\$ 5,446	\$ 1,202
Accrued expenses	11,101	6,606
Lease liabilities	463	397
Current portion of long-term debt	—	6,667
Total current liabilities	<u>17,010</u>	<u>14,872</u>
Long-term liabilities:		
Long-term lease liability - less current portion	28,752	—
Long-term debt - less current portion	70,226	11,987
Other long-term liabilities	—	8
Total long-term liabilities	<u>98,978</u>	<u>11,995</u>
Total liabilities	<u>115,988</u>	<u>26,867</u>
Commitments and Contingencies (Note 15)		
Stockholders' equity:		
Preferred stock, \$0.001 par value; 5,000,000 shares authorized as of December 31, 2018 and December 31, 2017; no shares issued or outstanding as of December 31, 2018 or December 31, 2017	—	—
Common stock, \$0.001 par value; 120,000,000 shares authorized as of December 31, 2018 and December 31, 2017; 33,863,077 and 24,538,309 shares issued and outstanding as of December 31, 2018 and December 31, 2017, respectively	34	25
Additional paid-in capital	306,053	224,025
Accumulated deficit	(201,109)	(134,371)
Total stockholders' equity	<u>104,978</u>	<u>89,679</u>
Total liabilities and stockholders' equity	<u>\$ 220,966</u>	<u>\$ 116,546</u>

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

KALA PHARMACEUTICALS, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except share and per share amounts)

	Year Ended	
	December 31,	
	2018	2017
Operating expenses:		
Research and development	29,290	29,008
Selling, general and administrative	35,431	10,867
Total operating expenses	<u>64,721</u>	<u>39,875</u>
Loss from operations	(64,721)	(39,875)
Other income (expense):		
Interest income	1,687	527
Interest expense	(3,314)	(1,019)
Loss on extinguishment of debt	(390)	—
Change in fair value of warrant liability	—	(1,844)
Total other income (expense)	<u>(2,017)</u>	<u>(2,336)</u>
Net loss	<u>\$ (66,738)</u>	<u>\$ (42,211)</u>
Net loss per share—basic and diluted	<u>\$ (2.49)</u>	<u>\$ (3.71)</u>
Weighted average shares outstanding—basic and diluted	<u>26,753,906</u>	<u>11,375,000</u>

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

KALA PHARMACEUTICALS, INC.

CONSOLIDATED STATEMENTS OF CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' EQUITY (DEFICIT)

(In thousands, except share amounts)

	Convertible Preferred Stock, \$0.001 Par Value		Convertible Preferred Stock, \$0.001 Par Value		Convertible Preferred Stock, \$0.001 Par Value		Convertible Preferred Stock, \$0.001 Par Value		Convertible Preferred Stock, \$0.001 Par Value		Common Stock \$0.001 Par Value		Additional Paid-In Capital	Accumulated Deficit	Total Stockholders' Equity (Deficit)
	Seed		Series A		Series B		Series B-1		Series C		Shares				
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount			
Balance as of December 31, 2016	11,243,209	\$ 11,065	9,583,432	\$ 10,736	15,624,999	\$ 22,185	4,629,629	\$ 6,885	42,782,688	\$ 67,520	1,181,429	\$ 1	\$ 4,374	\$ (92,137)	\$ (87,762)
Cumulative effect of a change in accounting policy													23	(23)	—
Conversion of preferred stock upon IPO	(11,243,209)	(11,065)	(9,583,432)	(10,736)	(15,624,999)	(22,185)	(4,629,629)	(6,885)	(42,782,688)	(67,520)	16,101,970	16	118,375		118,391
Issuance of common stock upon IPO, net of underwriters discount and offering costs of \$9,495											6,900,000	7	93,998		94,005
Reclassification of preferred warrant liability											—		2,883		2,883
Exercise of warrants											106,576	—	379		379
Exercise of stock options											248,334	1	422		423
Stock-based compensation expense													3,571		3,571
Net loss														(42,211)	(42,211)
Balance as of December 31, 2017	—	\$ —	—	\$ —	—	\$ —	—	\$ —	—	\$ —	24,538,309	\$ 25	\$224,025	\$ (134,371)	\$ 89,679
Common stock offering, net of issuance cost and underwriting fees of \$5.0 million											8,625,000	9	66,123		66,132
At-the-market offering, net of sales agent commission of \$0.1 million											518,135	—	4,634		4,634
Issuance of equity classified warrants, net of issuance cost													1,900		1,900
Exercise of stock options											181,633	—	530		530
Stock-based compensation expense													8,841		8,841
Net loss														(66,738)	(66,738)
Balance as of December 31, 2018	—	\$ —	—	\$ —	—	\$ —	—	\$ —	—	\$ —	33,863,077	\$ 34	\$306,053	\$ (201,109)	\$ 104,978

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

KALA PHARMACEUTICALS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Year Ended December 31,	
	2018	2017
Cash flows from operating activities:		
Net loss	\$ (66,738)	\$ (42,211)
Adjustments to reconcile net loss to cash used in operating activities:		
Depreciation	352	287
Amortization of right-of-use assets	603	356
Change in fair value of warrant liability	—	1,844
Loss of extinguishment of debt	390	—
Amortization of debt discount and other non-cash interest	274	111
Stock-based compensation	8,615	3,571
Change in operating assets and liabilities		
Prepaid expenses and other current assets	(1,387)	(494)
Inventory	(3,868)	—
Accounts payable	4,088	205
Accrued expenses	3,968	2,601
Lease liabilities and other long-term liabilities	(418)	(368)
Net cash used in operating activities	<u>(54,121)</u>	<u>(34,098)</u>
Cash flows from investing activities:		
Purchases of property and equipment	(1,578)	(480)
Net cash used in investing activities	<u>(1,578)</u>	<u>(480)</u>
Cash flows from financing activities:		
Proceeds from common stock offerings, net of underwriters' discounts and offering cost	70,766	94,005
Proceeds from venture debt, net of debt issuance costs of \$50 and \$0	2,728	10,000
Proceeds from issuance of debt and warrants, net of debt issuance costs of \$3,073	71,927	—
Payment of principal and prepayment penalty on venture debt	(21,847)	(1,111)
Proceeds from exercise of warrants	—	379
Proceeds from exercise of stock options	530	423
Net cash provided by financing activities	<u>124,104</u>	<u>103,696</u>
Net increase in cash and restricted cash	68,405	69,118
Cash and restricted cash at beginning of period	114,699	45,581
Cash and restricted cash at end of period	<u>\$ 183,104</u>	<u>\$ 114,699</u>
Reconciliation of cash and restricted cash:		
Cash and restricted cash at end of period	\$ 183,104	\$ 114,699
Less restricted cash	(12,206)	(134)
Cash at end of period	<u>\$ 170,898</u>	<u>\$ 114,565</u>
Non-cash investing and financing activities:		
Conversion of convertible preferred stock into common stock	\$ —	\$ 118,391
Right-of-use asset obtained in exchange for operating lease obligation	29,427	—
Reclassification of warrants to additional paid-in capital	—	2,883
Cashless exercise of warrants	—	411
Purchases of property and equipment in accounts payable	155	—
Supplemental disclosure:		
Cash paid for interest	\$ 3,041	\$ 863

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

KALA PHARMACEUTICALS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1: Nature of business

Nature of Business—Kala Pharmaceuticals, Inc. (the “Company”) was incorporated on July 7, 2009, and is a biopharmaceutical company focused on the development and commercialization of therapeutics using its AMPPLIFY™ mucus-penetrating particle (“MPP”) Drug Delivery Technology (“AMPPLIFY”), with an initial focus on the treatment of eye diseases. The Company has applied the AMPPLIFY technology to loteprednol etabonate, (“LE”), a corticosteroid designed for ocular applications, resulting in the August 2018 U.S. Food and Drug Administration’s (the “FDA”), approval of INVELTYST™ (loteprednol etabonate ophthalmic suspension) 1% as a twice-daily ocular corticosteroid for treatment of post-operative inflammation and pain following ocular surgery on August 22, 2018, and the development of its lead product candidate, KPI-121 0.25%, for the temporary relief of the signs and symptoms of dry eye disease. On October 16, 2018, the Company submitted a New Drug Application (“NDA”) to the FDA for KPI-121 0.25%, for which the FDA has granted a target action date under the Prescription Drug User Fee Act (“PDUFA”) of August 15, 2019. In addition, based upon the recommendation of the FDA, the Company initiated an additional Phase 3 clinical trial (“STRIDE 3”) (STRIDE- Short Term Relief in Dry Eye), in the third quarter of 2018 evaluating KPI-121 0.25% for the temporary relief of the signs and symptoms of dry eye disease. The Company expects to receive top-line results for STRIDE 3 in the fourth quarter of 2019. The Company is evaluating opportunities for MPP nanosuspensions of LE with less frequent daily dosing regimens for the temporary relief of the signs and symptoms of dry eye disease and for potential chronic treatment of dry eye disease. The Company is also evaluating compounds in its receptor Tyrosine Kinase Inhibitor program (the “rTKI program”), that inhibit the vascular endothelial growth factor, (“VEGF”), pathway, for the potential treatment of a number of retinal diseases.

The Company is engaged in commercializing a product, research and development activities, raising capital and recruiting skilled personnel. The Company is subject to a number of risks similar to those of other companies conducting high-risk, early-stage research and development of pharmaceutical product candidates. Principal among these risks are dependence on key individuals and intellectual property, competition from other products and companies and the technical risks associated with the successful research, development and marketing of its product candidates. The Company’s success is dependent upon its ability to raise additional capital in order to fund ongoing research and development, obtain regulatory approval of its product candidates, successfully commercialize its products, generate revenue, meet its obligations, and, ultimately, attain profitable operations.

Initial Public Offering—On July 25, 2017, the Company completed its initial public offering (“IPO”) of common stock pursuant to its registration statement on Form S-1, as amended (File No. 333-218936), which was declared effective by the Securities and Exchange Commission (the “SEC”) on July 19, 2017. Pursuant to the registration statement, the Company issued and sold 6,900,000 shares of \$0.001 par value common stock at an initial offering price of \$15.00 per share, which included 900,000 shares of common stock pursuant to the underwriters’ option to purchase additional shares. The Company’s shares began trading on the Nasdaq Global Select Market under the symbol “KALA” on July 20, 2017.

Proceeds from the Company’s IPO were approximately \$94.0 million after deducting underwriting discounts and commissions of \$7.3 million and offering costs of \$2.2 million. Upon the closing of the IPO, all of the Company’s outstanding shares of convertible preferred stock automatically converted into 16,101,970 shares of common stock at the applicable conversion ratio then in effect. All of the Company’s outstanding warrants to purchase preferred stock automatically converted into warrants to purchase 202,020 shares of common stock.

October 2018 Financings— On August 9, 2018, the Company filed a shelf registration statement on Form S-3 with the SEC, which was declared effective on August 27, 2018 (the “Shelf Registration”). Under the Shelf Registration, the Company may offer and sell up to \$250.0 million of a variety of securities including common stock, preferred stock, warrants, depositary shares, debt securities, purchase contracts, purchase units or any combination of such securities during the three-year period that commenced upon the Shelf Registration becoming effective. On October 5, 2018, the Company sold 7,500,000 shares of the Company’s common stock (the “Shares”) in an underwritten offering pursuant to

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the Shelf Registration at a public offering price of \$8.25 per share, before underwriting discounts and commissions. In addition, the underwriters were granted an overallotment option to purchase an additional 1,125,000 shares of the common stock at the same public offering price, less underwriting discounts and commissions (the “Overallotment Shares”). On October 11, 2018, the underwriters exercised in full their option to purchase the Overallotment Shares. The total number of Shares and Overallotment Shares sold by the Company in the offering was 8,625,000 shares, resulting in net proceeds to the Company, after underwriting discounts and offering expenses, of approximately \$66.1 million.

In connection with the filing of the Shelf Registration, the Company entered into a sales agreement with Jefferies, LLC (the “Sales Agreement”) pursuant to which the Company may issue and sell, from time to time, up to an aggregate of \$50.0 million of its common stock in an at-the-market equity offering (“ATM Offering”) through Jefferies, LLC, as sales agent. As of December 31, 2018 the Company issued 518,135 shares of its common stock under the ATM Offering at the average price of \$9.41 per share, resulting in net proceeds to the Company of approximately \$4.6 million.

Under the Shelf Registration, the Company may periodically offer one or more types of securities in amounts, at prices and on terms announced, if and when the securities are ever offered, of up to an additional \$174.0 million.

On October 1, 2018, the Company entered into a credit agreement (the “Athyrium Credit Facility”), with Athyrium Opportunities III Acquisition LP (“Athyrium”). The Athyrium Credit Facility provides for a Term Loan A in the aggregate principal amount of \$75.0 million (the “Athyrium Term Loan A”), and a Term Loan B in the aggregate principal amount of \$35.0 million (the “Athyrium Term Loan B”). On October 1, 2018, the Company borrowed the entire principal amount of the Athyrium Term A Loan. The Company may draw down the Athyrium Term Loan B upon either (i) FDA approval of KPI-121 0.25% for a dry eye disease indication or (ii) reaching certain net product revenues for INVELTYS, in each case on or prior to June 30, 2020.

Note 2: Summary of Significant Accounting Policies

Principles of consolidation—The accompanying consolidated financial statements include the accounts of Kala Pharmaceuticals, Inc. and its wholly owned subsidiary, Kala Pharmaceuticals Security Corporation, which is a Massachusetts subsidiary created to buy, sell and hold securities. All intercompany transactions and balances have been eliminated.

Basis of Presentation—The accompanying consolidated financial statements have been prepared on a going concern basis which contemplates the realization of assets and the satisfaction of liabilities in the normal course of business. Since inception, the Company has not generated revenue from the sale of products and has incurred recurring losses and negative cash flows from operations, including a net loss of \$66.7 million and \$42.2 million, for the years ended December 31, 2018 and 2017, respectively, and used cash in operations of \$54.1 million and \$34.1 million, in the years ended December 31, 2018 and 2017, respectively. The Company has financed its operations to date primarily through the issuance of common stock, convertible preferred stock, convertible promissory notes and debt. The Company expects to incur additional operating losses and negative operating cash flows for the foreseeable future. The Company expects that the existing cash on hand as of December 31, 2018 will enable it to fund its planned operating expenses, debt service obligations and capital expenditure requirements for at least 12 months from the date these consolidated financial statements were issued. This evaluation is based on relevant conditions and events that are known and reasonably knowable at the date that the consolidated financial statements are issued. As a result, the Company could deplete its available capital resources sooner than it expects.

Common Stock Reverse Stock Split and Adjustment to Preferred Stock Conversion Ratios—On July 7, 2017, the Company effected a one-for-5.2083 reverse stock split of the Company’s issued and outstanding shares of common stock and a proportional adjustment to the existing conversion ratios for the Company’s convertible preferred stock. The par value per share and authorized shares of common and convertible preferred stock were not adjusted as a result of the reverse stock split. All common stock and common stock per share amounts within the financial statements and notes thereto have been retroactively adjusted for all periods presented to give effect to this reverse stock split, including reclassifying an amount equal to the reduction in par value of common stock to additional paid-in capital.

Automatic Conversion of Preferred Stock—On July 7, 2017, the Company effected an amendment to its Amended and Restated Certificate of Incorporation, as amended. This amendment eliminated the minimum price per share of Common Stock for an underwritten public offering that would result in the automatic conversion of all outstanding shares of the Company's Series Seed, Series A, Series B, Series B-1 and Series C Preferred Stock.

Use of Estimates—The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States of America ("GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue, expense, and related disclosures. The Company bases estimates and assumptions on historical experience when available and on various factors that it believes to be reasonable under the circumstances. The Company evaluates its estimates and assumptions on an ongoing basis. Estimates relied upon in preparing these consolidated financial statements relate to, but are not limited to, the present value of lease liabilities and the corresponding right-of-use assets, the fair value of warrants, stock compensation, accrued expenses and the recoverability of the Company's net deferred tax assets and related valuation allowance. Actual results may differ from these estimates under different assumptions or conditions.

Cash and Concentration of Credit Risk—Financial instruments that potentially expose the Company to concentrations of credit risk consist primarily of cash. Periodically, the Company maintains deposits in accredited financial institutions in excess of federally insured limits. The Company deposits its cash in financial institutions that it believes have high credit quality and has not experienced any losses on such accounts and does not believe it is exposed to any unusual credit risk beyond the normal credit risk associated with commercial banking relationships.

Restricted Cash—As of December 31, 2018 and 2017, the Company had restricted cash of \$12.2 million and \$0.1 million, respectively, which represents cash held in money market accounts to satisfy our financial covenant (See Note 8) and serve as collateral for the Company's credit cards and facility leases. This cash is classified as a non-current asset in the accompanying consolidated balance sheets.

Inventory—Inventory is stated at the lower of cost or net realizable value, on a first-in, first-out ("FIFO") method. Costs include amounts related to third party manufacturing, transportation, internal labor and overhead. Capitalization of costs as inventory begins when the product has received regulatory approval in the U.S. We expense inventory costs related to product candidates as research and development expenses prior to regulatory approval in the respective territory, even if this inventory may later be sold. For INVELTYS, capitalization of costs as inventory began upon U.S. regulatory approval on August 22, 2018. Inventory also includes costs of product samples prior to shipment.

Leases—At the inception of an arrangement the Company determines whether the arrangement is or contains a lease based on the unique and circumstances present. Most leases with a term greater than one year are recognized on the balance sheet as right-of-use assets, lease liabilities and, if applicable, long-term lease liabilities. The Company has elected not to recognize on the balance sheet leases with terms of one-year or less. Lease liabilities and their corresponding right-of-use assets are recorded based on the present value of lease payments over the expected lease term. The interest rate implicit in lease contracts is typically not readily determinable. As such, the Company utilizes the appropriate incremental borrowing rate, which is the rate incurred to borrow on a collateralized basis over a similar term an amount equal to the lease payments in a similar economic environment. Certain adjustments to the right-of-use asset may be required for items such as initial direct costs paid or incentives received.

The components of a lease should be split into three categories: lease components (e.g., land, building, etc.), non-lease components (e.g., common area maintenance, maintenance, consumables, etc.), and non-components (e.g., property taxes, insurance, etc.). Then the fixed and in-substance fixed contract consideration (including any related to non-components) must be allocated based on fair values to the lease components and non-lease components. Although separation of lease and non-lease components is required, certain practical expedients are available to entities. Entities electing the practical expedient would not separate lease and non-lease components. Rather, they would account for each lease component and the related non-lease component together as a single component. The Company's facilities operating leases have lease and non-lease components which the Company has elected to use the practical expedient and account for each lease component and related non-lease component as one single component. The lease component results in a right-of-use asset being recorded on the balance sheet and amortized as lease expense on a straight-line basis to the statements of operations.

Property and Equipment, net—Property and equipment are recorded at cost. Depreciation is provided using the straight-line method over the estimated useful lives of the related assets. Depreciation expense is included in operations. Laboratory equipment and office and computer equipment is depreciated over three to five years. Leasehold improvements are depreciated over the shorter of their useful life or the life of the lease. Major additions and upgrades are capitalized; maintenance and repairs, which do not improve or extend the life of the respective assets, are expensed as incurred. Upon retirement or sale, the cost of assets disposed of and the related accumulated depreciation are removed from the accounts and any resulting gain or loss is included in loss from operations.

Patent Costs—Costs to secure and defend patents are expensed as incurred and are classified as selling, general and administrative expenses in the Company’s consolidated statements of operations.

Impairment of Long-Lived Assets—Long-lived assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of the asset may not be recoverable. When such events occur, the Company compares the carrying amounts of the assets to their undiscounted expected future cash flows. If the undiscounted cash flows are insufficient to recover the carrying value, the assets are recorded at the lesser of the carrying value or fair value. For the years ended December 31, 2018 and 2017, no impairments were recorded.

Fair Value Measurements—Certain assets and liabilities are carried at fair value. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. Financial assets and liabilities carried at fair value are to be classified and disclosed in one of the following three levels of the fair value hierarchy, of which the first two are considered observable and the last is considered unobservable:

- Level 1—Quoted prices in active markets for identical assets or liabilities.
- Level 2—Observable inputs (other than Level 1 quoted prices), such as quoted prices in active markets for similar assets or liabilities, quoted prices in markets that are not active for identical or similar assets or liabilities, or other inputs that are observable or can be corroborated by observable market data.
- Level 3—Unobservable inputs that are supported by little or no market activity and that are significant to determining the fair value of the assets or liabilities, including pricing models, discounted cash flow methodologies and similar techniques.

The Company’s preferred stock warrant liability, prior to conversion to common stock warrants, was carried at fair value determined according to the fair value hierarchy described above and classified as a Level 3 measurement. Upon the completion of the IPO, the Company’s outstanding warrants to purchase preferred stock converted into warrants to purchase common stock and the Company reclassified the fair value of the warrant liability to additional paid-in capital (Note 10). The carrying value of accounts payable and accrued expenses approximate their fair value due to the short-term nature of these assets and liabilities. Management believes that the Company’s long-term debt (See Note 8) bears interest at the prevailing market rate for instruments with similar characteristics and, accordingly, the carrying value of long-term debt, including the current portion, also approximates its fair value. The fair value of the outstanding debt was estimated using a discounted cash flow analysis based on current market interest rates for debt issuances with similar remaining years to maturity, adjusted for credit risk, which represents a Level 3 measurement.

Segment Information—Operating segments are identified as components of an enterprise about which separate discrete financial information is made available for evaluation by the chief operating decision maker (“CODM”) in making decisions regarding resource allocation and assessing performance. The CODM is the Company’s Chief Executive Officer. The Company manages its operations as a single segment for the purposes of assessing performance and making operating decisions. The Company’s singular focus is on the development and commercialization of therapeutics using its proprietary AMPPLIFY technology. All of the Company’s tangible assets are held in the United States. To date, all of the Company’s revenue has been generated in the United States.

Research and Development Costs—Research and development expenses consist of expenses incurred in performing research and development activities, including compensation and benefits for full-time research and development employees, an allocation of facilities expenses, overhead expenses, payments to universities under the Company’s license agreements and other outside expenses. Research and development costs are expensed as incurred. Research and development costs that are paid in advance of performance, including nonrefundable prepayments for goods or services, are deferred and capitalized as a prepaid expense. Such amounts are recognized as an expense as the goods are delivered or the related services are performed, or until it is no longer expected that the goods will be delivered or the services rendered.

Accrued Expenses—The Company accrues expenses related to development activities performed by third parties based on an evaluation of services received and efforts expended pursuant to the terms of the contractual arrangements. Payments under some of these contracts depend on clinical trial milestones. There may be instances in which payments made to the Company’s vendors will exceed the level of services provided and result in a prepayment of expenses. In accruing service fees, the Company estimates 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 the estimate, the Company will adjust the accrual or prepaid expense accordingly.

Stock-Based Compensation—The Company accounts for all stock-based payment awards granted to employees and non-employees as compensation expense at fair value. The Company’s stock-based payments include stock options and grants of common stock, including common stock subject to vesting. The measurement date for employee awards is the date of grant, and stock-based compensation costs are recognized as expense over the employees’ requisite service period, which is the vesting period, on a straight-line basis. The measurement date for nonemployee awards is generally the date the services are completed, resulting in periodic adjustments to stock-based compensation during the vesting terms for changes in the fair value of the awards. Stock-based compensation costs for nonemployees are recognized as expense over the vesting period on a straight-line basis. Stock-based compensation is classified in the accompanying consolidated statements of operations based on the function to which the related services are provided, or capitalized with inventory until related expense is recognized.

The Company recognizes compensation expense for the portion of awards that have vested. After the adoption of Accounting Standards Update (“ASU”) 2016-09, described in further detail below, forfeitures are recorded as they occur.

The fair value of each stock option grant is estimated on the date of grant using the Black-Scholes option-pricing model. The assumptions used in calculating the fair value of stock-based payment awards represent management’s best estimates. The Company lacks sufficient company-specific historical and implied volatility information. Therefore, it estimates its expected stock volatility based on the historical volatility of a publicly traded set of peer companies and will continue to do so until it has adequate historical data regarding the volatility of its own traded stock price. The expected term of the Company’s stock options has been determined utilizing the “simplified” method for awards that qualify as “plain-vanilla” options. The expected term of stock options granted to non-employees is equal to the contractual term of the option award. The risk-free interest rate is determined by reference to the U.S. Treasury yield curve in effect at the time of grant of the award for time periods approximately equal to the expected term of the award. Expected dividend yield is based on the fact that the Company has never paid cash dividends on common stock and does not expect to pay any cash dividends in the foreseeable future.

Common Stock Valuation Prior to the IPO—Through the consummation of the IPO in July 2017, due to the absence of an active market for the Company’s common stock, the Company utilized methodologies in accordance with the framework of the American Institute of Certified Public Accountants Technical Practice Aid, Valuation of Privately-Held Company Equity Securities Issued as Compensation, to estimate the fair value of its common stock. In determining the exercise prices for options granted, the Company has considered the estimated fair value of the common stock as of the measurement date. The estimated fair value of the common stock has been determined at each grant date based upon a variety of factors, including the illiquid nature of the common stock, arm’s-length sales of the Company’s capital stock (including redeemable convertible preferred stock), the effect of the rights and preferences of the preferred shareholders, and the prospects of a liquidity event. Among other factors are the Company’s financial position and historical financial performance, the status of technological developments within the Company’s research, the

composition and ability of the current research and management team, an evaluation or benchmark of the Company's competition, and the current business climate in the marketplace. Significant changes to the key assumptions underlying the factors used could have resulted in different fair values of common stock at each valuation date.

Preferred Stock Warrants—Prior to the completion of the IPO in July 2017, the Company classified warrants to purchase shares of its Series Seed Preferred Stock, Series A Convertible Preferred Stock ("Series A Preferred Stock"), Series B Preferred Stock ("Series B Preferred Stock"), and Series C Preferred Stock ("Series C Preferred Stock") as a liability on its consolidated balance sheets as these warrants were free-standing financial instruments that were exercisable for contingently redeemable shares. The warrants were recorded in long-term liabilities at fair value, estimated using the Black-Scholes model, and marked to market at each balance sheet date. The change in carrying value was reported as the change in fair value of warrant liability in the accompanying consolidated statements of operations. The Company continued to adjust the liability for changes in fair value until conversion of the preferred stock warrants to warrants to purchase common stock (see Note 10).

Income Taxes—Deferred tax assets and liabilities are recognized for the expected future tax consequences of events that have been included in the Company's consolidated financial statements and tax returns. Deferred tax assets and liabilities are determined based upon the differences between the consolidated financial statement carrying amounts and the tax bases of existing assets and liabilities and for loss and credit carryforwards using enacted tax rates expected to be in effect in the years in which the differences are expected to reverse. Deferred tax assets are reduced by a valuation allowance if it is more likely than not that some portion or all of the deferred tax asset 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. The Company may recognize the tax benefit from an uncertain tax position only if it is more likely than not that the position will be sustained on examination by the taxing authorities based on the technical merits of the position. The tax benefits recognized in the consolidated financial statements from such a position is measured based on the largest benefit that has a greater than 50% likelihood of being realized upon ultimate settlement. As a result, reserves are based on a determination of whether and how much of a tax benefit taken by the Company in its tax filings or positions is more likely than not to be realized following resolution of any potential contingencies present.

Tax Incentives—The Company recognizes tax incentives when there is reasonable assurance that the Company will comply with the conditions attached to the tax incentive agreement and the tax incentive will be received. The Company evaluates the conditions of each individual tax incentive as of each reporting period to ensure that the Company has reached reasonable assurance of meeting the conditions of each tax incentive agreement and that it is expected that the tax incentive will be received as a result of meeting the necessary conditions. When tax incentives are related to reimbursements for cost of revenues or operating expenses, the tax incentives are recognized as a reduction of the related expense in the consolidated statements of operations when the related expense has been incurred.

The Company records tax incentive receivables in the consolidated balance sheets in prepaid expenses and other current assets or long-term tax incentive receivable, depending on when the amounts are expected to be received from the funding agency. As of December 31, 2018 and 2017, the Company had recorded no receivable from tax incentives.

Net Loss per Share—Basic net loss per share is computed using the weighted-average number of common shares outstanding during the period. Diluted net loss per share is computed using the weighted average number of common shares outstanding during the period and, if dilutive, the weighted average number of potential shares of common stock, including the assumed exercise of stock options and warrants. Net loss per share attributable to common stockholders is calculated using the two-class method, which is an earnings allocation formula that determines net loss per share for the holders of the Company's common shares and participating securities. The Company's convertible preferred stock contains participation rights in any dividend paid by the Company and is deemed to be a participating security. Net loss attributable to common stockholders and participating preferred shares are allocated to each share on an as-converted basis as if all of the earnings for the period had been distributed. The participating securities do not include a contractual obligation to share in losses of the Company and are not included in the calculation of net loss per share in the periods in which a net loss is recorded.

Diluted net loss per share is computed using the more dilutive of (a) the two-class method or (b) the if converted method. The Company allocates earnings first to preferred stockholders based on dividend rights and then to common and preferred stockholders based on ownership interests. The weighted average number of common shares included in the computation of diluted net loss gives effect to all potentially dilutive common equivalent shares, including outstanding stock options, warrants, preferred stock and the potential issuance of stock upon the conversion of the Company's convertible notes. Common stock equivalent shares are excluded from the computation of diluted net loss per share if their effect is antidilutive. In periods in which the Company reports a net loss attributable to common stockholders, diluted net loss per share attributable to common stockholders is the same as basic net loss per share attributable to common stockholders since dilutive common shares are not assumed to have been issued if their effect is anti-dilutive. When a gain had been recorded pursuant to a change in fair value of the warrant liability during the period, the Company assessed whether the impact of reversing the gain and including the additional securities was dilutive, and if so, adjusted dilutive EPS. The Company reported a net loss attributable to common stockholders for the years ended December 31, 2018 and 2017.

The Company previously reported weighted average shares outstanding – basic and diluted of 6,903,239 shares and net loss per share attributable to common stockholders – basic and diluted of \$6.11 for the year ended December 31, 2017. Subsequent to reporting the Company's financial statements as of and for the year ended December 31, 2017, an immaterial error was identified resulting in a correction of the weighted average shares outstanding – basic and diluted to 11,375,000 shares and net loss per share – basic and diluted of \$3.71 for the year ended December 31, 2017. These financial statements include the corrected amounts.

Comprehensive Loss—Comprehensive loss is equal to net loss for the periods presented.

Recently Adopted Accounting Pronouncements

In March 2016, the Financial Accounting Standards Board (the "FASB") issued ASU No. 2016-09, *Improvements to Employee Share-Based Payment Accounting* ("ASU 2016-09"), which simplifies share-based payment accounting through a variety of amendments. The standard is effective for annual periods beginning after December 15, 2016 and for interim periods within those fiscal years. The changes resulting from the adoption of this standard impact the accounting for income taxes, accounting for forfeitures, statutory tax withholding and the presentation of statutory tax withholding on the consolidated statement of cash flows. The Company adopted this standard on January 1, 2017. Under guidance within ASU 2016-09, excess tax benefits and deficiencies are to be recognized as income tax expense or benefit in the consolidated statement of operations in the period in which they occur rather than as an increase or decrease in stockholders' equity (deficit). Since the Company maintains a full valuation allowance on its net deferred tax assets, there was no net impact to its accumulated deficit or its net loss resulting from the adoption of this standard. Also under the guidance in ASU 2016-09, an entity may elect to account for forfeitures as they occur or continue to estimate the total number of awards that are vested or expected to vest. The Company elected to account for forfeitures as they occur and applied the accounting change on a modified retrospective basis as a cumulative effect adjustment to accumulated deficit as of the date of adoption, January 1, 2017. The adoption of this standard did not have a material impact on the Company's financial position, results of operations or consolidated statement of cash flows.

In November 2016, the FASB issued ASU 2016-18, *Statement of Cash Flows Restricted Cash* ("ASU 2016-18"). This new standard requires companies to include amounts generally described as restricted cash and restricted cash equivalents in cash and cash equivalents when reconciling beginning-of-period and end-of-period total amounts shown on the consolidated statement of cash flows. This guidance was effective for annual and interim reporting periods beginning after December 15, 2017, and required retrospective application. The Company elected to early adopt this guidance as of December 31, 2017. The adoption of this standard did not have a material impact on the consolidated financial statements and related disclosures.

In August 2016, the FASB issued ASU No. 2016-15, *Statement of Cash Flows: Classification of Certain Cash Receipts and Cash Payments* ("ASU 2016-15"), to address diversity in practice in how certain cash receipts and cash payments are presented and classified in the statement of cash flows. The standard was effective for annual periods beginning after December 15, 2017, including interim periods within those fiscal years. ASU 2016-15 should be applied retrospectively and early adoption is permitted, including adoption in an interim period. The Company has adopted this

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new standard as of January 1, 2018. The adoption of this standard did not have a material impact on the Company's consolidated financial statements.

In May 2017, the FASB issued ASU No. 2017-09, *Compensation – Stock Compensation (“Topic 718”): Scope of Modification Accounting (“ASU 2017-09”)*, which provides guidance about which changes to the terms or conditions of a share-based payment award require an entity to apply modification accounting. The amendments in ASU 2017-09 are effective for all entities for annual periods, and interim periods within those annual periods, beginning after December 15, 2017, with early adoption permitted. The Company has prospectively adopted this new standard as of January 1, 2018. The adoption of this standard did not have a material impact on the Company's consolidated financial statements.

In February 2016, the FASB issued ASU 2016-02, *Leases (Topic 842) (“ASU 2016-02”)*, which provides guidance to enhance the transparency and comparability of financial reporting related to leasing arrangements. Under this new lease standard, most leases are required to be recognized on the balance sheet as right-of-use assets and corresponding lease liabilities. Disclosure requirements have been enhanced with the objective of enabling financial statement users to assess the amount, timing, and uncertainty of cash flows arising from leases.

The Company elected to early adopt ASU 2016-02, effective January 1, 2018. The standard has been implemented using the required modified retrospective approach and the Company has also elected to utilize the available practical expedients. In using the modified retrospective approach, the Company was required to recognize and measure leases existing at, or entered into after, the beginning of the earliest comparative period presented. Prior period results have been restated resulting in adjustments to the consolidated balance sheets and the consolidated statement of cash flows. The adoption of this standard did not have a material impact on the consolidated statement of operations. The impact on the consolidated balance sheet as of December 31, 2017 and the consolidated statement of cash flows for the year ended December 31, 2017 is shown below.

Impact to Previously Reported Results

From December 31, 2017 consolidated balance sheet (in thousands):

	<u>As Previously Reported</u>	<u>New Lease Standard Adjustment</u>	<u>As Restated</u>
Right-of-use asset	\$ —	\$ 413	\$ 413
Accrued expenses	\$ 6,589	\$ 17	\$ 6,606
Other current and long-term liabilities	\$ 9	\$ (1)	\$ 8
Lease liabilities	\$ —	\$ 397	\$ 397

For the year ended December 31, 2017 consolidated statement of cash flows (in thousands):

	<u>As Previously Reported</u>	<u>New Lease Standard Adjustment</u>	<u>As Restated</u>
Amortization of right-of-use asset	\$ —	\$ 356	\$ 356
Accrued expenses	\$ 2,596	5	\$ 2,601
Lease liabilities	\$ —	\$ (361)	\$ (361)

Recently Issued Accounting Pronouncements

In June 2018, the FASB issued ASU 2018-07, *Compensation-Stock Compensation Improvements to Nonemployee Share-Based Payment Accounting (“Topic 718”)*. The ASU substantially aligns accounting for share-based payments to employees and non-employees. This ASU will become effective for annual periods beginning after December 15, 2018, including interim periods within that period, and early adoption is permitted. The Company does not expect this ASU to have a material effect on its consolidated financial statements.

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In August 2018, the FASB issued ASU 2018-13, *Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement* (“Topic 820”). The ASU is intended to improve the effectiveness of disclosures in the notes to financial statements related to fair value measurements in Topic 820. This ASU will become effective for annual periods beginning after December 15, 2019, including interim periods within that period, and early adoption is permitted. The Company is currently evaluating the effect of this new guidance on its consolidated financial statements.

In August 2018, the FASB issued ASU 2018-15, *Intangibles - Goodwill and Other - Internal-Use Software - Customer’s Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract* (“Subtopic 350-40”). This ASU aligns the accounting for implementation costs incurred in a hosting arrangement that is a service contract with the guidance on capitalizing costs associated with developing or obtaining internal-use software. This ASU will become effective for annual periods beginning after December 15, 2019, including interim periods within that period, and early adoption is permitted. The Company does not expect this ASU to have a material effect on its consolidated financial statements.

Note 3: Prepaid Expenses and Other Current Assets

Prepaid Expenses and Other Current Assets, consists of the following (in thousands):

	<u>December 31,</u> <u>2018</u>	<u>December 31,</u> <u>2017</u>
Insurance	\$ 532	\$ 452
Receivable for construction related to facility	1,026	—
Other	477	196
Prepaid expenses and other current assets	<u>\$ 2,035</u>	<u>\$ 648</u>

Note 4: Property and Equipment, Net

Property and equipment, net, consists of the following (in thousands):

	<u>December 31,</u> <u>2018</u>	<u>December 31,</u> <u>2017</u>
Equipment	\$ 2,400	\$ 2,084
Leasehold improvements	114	114
Computer hardware and software	599	87
Furniture and office equipment	67	41
Construction in progress	804	—
Property and equipment—at cost	3,984	2,326
Less: Accumulated depreciation	<u>(1,818)</u>	<u>(1,540)</u>
Property and equipment—net	<u>\$ 2,166</u>	<u>\$ 786</u>

Depreciation expense for the years ended December 31, 2018 and 2017 was \$0.4 million and \$0.3 million respectively.

Note 5: Inventory

Inventory consists of the following (in thousands):

	<u>December 31,</u> <u>2018</u>	<u>December 31,</u> <u>2017</u>
Raw materials	\$ 350	\$ —
Work in progress	3,357	—
Finished goods	388	—
Inventory	<u>\$ 4,095</u>	<u>\$ —</u>

Note 6: Accrued Expenses

Accrued expenses consist of the following (in thousands):

	<u>December 31,</u> <u>2018</u>	<u>December 31,</u> <u>2017</u>
Development costs	\$ 1,223	\$ 3,054
Compensation and benefits	5,352	2,402
Contract manufacturing	434	—
Commercialization cost	1,722	—
Professional services	1,019	895
Payable related to construction of facility	1,026	—
Other	325	255
Accrued expenses	<u>\$ 11,101</u>	<u>\$ 6,606</u>

Note 7: Lease

The Company entered into a three-year lease agreement for its former headquarters (the “Waltham Lease”) on September 30, 2013, with a commencement date of February 1, 2014. On June 30, 2016, the Waltham Lease was amended to extend the term from January 31, 2017 to January 31, 2019. In connection with the lease agreement, the Company issued a letter of credit to the landlord for \$84,000. The Company secured the letter of credit for the full amount of the letter with cash on deposit, which is reported as restricted cash. With the adoption of ASU 2016-02, the Company has recorded a right-of-use asset and corresponding lease liability. As of December 31, 2018, and December 31, 2017, the remaining lease term on the operating lease for the Waltham Lease was 0.08 years and 1.08 years, respectively. As of December 31, 2018, and December 31, 2017, the discount rate was 6.50% for the Waltham Lease. Amortization of the operating lease right-of-use asset for the Waltham Lease amounted to \$0.4 million for the year ended December 31, 2018 and was included in operating expense.

On February 28, 2018, the Company entered into a lease agreement with 480 Arsenal Group LLC (the “Arsenal Group”) for the lease of a portion of the building located at 490 Arsenal Way Watertown, Massachusetts (the “Watertown Lease”). The initial term of the Watertown Lease is eight years with an option to extend for an additional five years, which are recognized as part of our right of use asset and lease liability. The Company has begun to occupy the premises in Watertown in early 2019 as its new corporate headquarters and for research and development. The lease commencement date was November 15, 2018 and the Company has concluded that it controls the space, as defined in ASU 2016-02, as of the lease commencement date.

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The Company identified and assessed the following significant assumptions in recognizing the right-of-use asset and corresponding liability.

- *Expected lease term* - The expected lease term includes both contractual lease periods and, when applicable, cancelable option periods where failure to exercise such options would result in an economic penalty.
- *Incremental borrowing rate*- As the Company's lease does not provide an implicit rate, the Company estimated the incremental borrowing rate based on a yield curve analysis, utilizing the interest rate derived from the fair value analysis of the Company's recent Athyrium Credit Facility and adjusting it for factors that reflect the profile of secured borrowing over the expected term of the lease.

The Company recognized the right-of-use asset and corresponding lease liability on November 15, 2018, by calculating the present value of lease payments, discounted at 9.9%, the Company's estimated incremental borrowing rate, over the 13 year expected term. Amortization of the operating lease right-of-use asset for the Watertown Lease amounted to \$0.2 million for the year ended December 31, 2018 and was included in operating expense. The variable lease expense, which includes common area maintenance and real estate taxes was \$82,600 as of December 31, 2018. As of December 31, 2018 the remaining lease term on the Arsenal Lease was 12.83 years.

In connection with the Watertown Lease, the Company issued a letter of credit to the Arsenal Group for \$2.0 million. The Company secured the letter of credit for the full amount of the letter with cash on deposit, which is reported as restricted cash.

On March 15, 2018, the Company entered into a lease agreement with Duffy Associates, LLC for the lease of a portion of the building located at 465 Waverley Oaks Road, Suite 301, Waltham, Massachusetts (the "Waverley Oaks Lease"). The term of the Waverley Oaks Lease is one-year, and as such a right-of-use asset and corresponding lease liability has not been recorded in accordance with the Company's accounting policy election to exclude short-term leases. The Company used this location for additional corporate offices before moving to its new corporate headquarters in Watertown, Massachusetts.

The components of lease expense and related cash flows were as follows (in thousands):

	For the year ended December 31,	
	2018	2017
Lease cost		
Operating lease cost	\$ 1,099	\$ 396
Short-term lease cost	183	—
Total lease cost	\$ 1,282	\$ 396
Operating cash flows from operating leases	\$ 905	\$ 396

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Maturities of lease liability due under these lease agreements as of December 31, 2018 are as follows (in thousands):

Years Ending December 31,	Operating Lease Obligation	Other Lease Obligations	Total
2019	\$ 3,376	\$ 52	\$ 3,428
2020	3,624	—	3,624
2021	3,733	—	3,733
2022	3,845	—	3,845
2023	3,960	—	3,960
Thereafter	35,416	—	35,416
Present value adjustment	(24,739)	—	(24,739)
Present value of lease payments	\$ 29,215	\$ 52	\$ 29,267

Note 8: Debt*2014 Debt Facility*

In November 2014, the Company entered into a venture debt facility (“2014 Debt Facility”) for a total loan commitment of \$10.0 million. On October 13, 2016, the Company entered into a First Amendment to the 2014 Debt Facility the (“First Amendment”), which reaffirmed the initial commitment to a total of \$10.0 million of funding (“Term Loan A”) and increased the Company’s total borrowing capacity by an additional \$10.0 million (“Term Loan B” and together with Term Loan A, “Term Loans”). On September 28, 2017, the Company drew the additional \$10.0 million available under Term Loan B. On November 22, 2017, the Company entered into a Second Amendment to the 2014 Debt Facility to account for the formation of the Company’s wholly-owned subsidiary. On March 29, 2018, the Company entered into a Third Amendment to the 2014 Debt Facility (the “Third Amendment”), which reaffirmed the initial commitment to a total of \$20.0 million of funding, increased the Company’s total borrowing capacity by an additional \$5.0 million and extended the interest-only end date for 12 months following the execution of the Third Amendment. The maturity date of the 2014 Debt Facility was also extended from October 13, 2020 to March 29, 2022.

The 2014 Debt Facility, as amended, was senior debt and was secured by substantially all of the assets of the Company other than intellectual property. In the event the Company was determined to be in default under the 2014 Debt Facility, the outstanding balance were to accrue interest at five percentage points above the interest rate applicable immediately prior to the occurrence of the event of default and the lender had the right to declare all outstanding principal and interest payable. Under the terms of the 2014 Debt Facility, certain events including but not limited to, the Company’s failure to pay obligations when due, failure to perform obligations under the agreement, insolvency or the occurrence of any circumstance that could reasonably be expected to have a material adverse effect on the Company, constituted events of default.

In connection with the 2014 Debt Facility and the initial borrowing of \$5.0 million under Term Loan A, the Company issued warrants to the lender to purchase 138,889 shares of Series B Preferred Stock at an exercise price of \$1.44 per share (the “2014 Warrants”). During 2015 the Company borrowed an additional \$5.0 million under Term Loan A and the number of exercisable shares underlying the 2014 Warrants increased to 277,778 shares of Series B Preferred Stock or 53,333 shares of common stock at an exercise price of \$7.50 per share on an as-converted basis (see Note 9). Upon executing the First Amendment, the Company issued warrants to purchase up to 251,951 shares of Series C Preferred Stock at an exercise price of \$1.59 per share (the “2016 Warrants”), or 48,374 shares of common stock at an exercise price of \$8.27 per share on an as-converted basis (see Note 9). Consistent with the warrants issued under the original 2014 Debt Facility, the number of shares of Series C Preferred Stock that become exercisable would increase in proportion to the amount of Term Loan B borrowings. Upon the September 28, 2017 draw down of Term Loan B, the 2016 Warrants became exercisable into 48,374 shares of common stock.

Under the terms of the 2014 Debt Facility, the borrowings accrued interest at an annual rate equal to 3.00% above the Prime Rate then in effect. The applicable interest rate for the outstanding principal balance was 8.25% as of

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the repayment date of October 1, 2018 and 7.50% as of December 31, 2017. The Company recognized interest expense of \$1.2 million and \$1.0 million, related to the 2014 Debt Facility during the years ended December 31, 2018 and 2017, respectively, which consisted of the amortization of the debt discount of \$74,000 and \$0.1 million, respectively, and contractual coupon interest of \$1.1 million and \$0.9 million, respectively.

As of December 31, 2017, the unpaid principal balance under the 2014 Debt Facility was \$18.9 million and the unamortized discount was \$0.2 million. On October 1, 2018, the Company repaid the outstanding principal balance under the 2014 Debt Facility of \$20.0 million. In connection with the repayment of the 2014 Debt Facility, the Company paid a prepayment fee of \$0.2 million.

Athyrium Credit Facility

On October 1, 2018, the Company entered into a \$110.0 million Athyrium Credit Facility with Athyrium. The Athyrium Credit Facility provides for an Athyrium Term Loan A in the aggregate principal amount of \$75.0 million, and an Athyrium Term Loan B in the aggregate principal amount of \$35.0 million. On October 1, 2018, the Company borrowed the entire principal amount of the Athyrium Term Loan A. The Company may draw down the Athyrium Term Loan B upon either (i) FDA approval of KPI-121 0.25% for a dry eye disease indication or (ii) reaching certain net product revenues for INVELTYS, in each case on or prior to June 30, 2020. The maturity date of the Athyrium Credit Facility is October 1, 2024, the six-year anniversary of the close.

The Athyrium Term Loan A bears interest at a rate of 9.875% per annum, with quarterly, interest-only payments until the fourth anniversary of the Athyrium Term Loan A. The unpaid principal amount of the Athyrium Term Loan A is due and payable in quarterly installments starting on the fourth anniversary of the loan. The Company may make voluntary prepayments, in whole or in part, and subject to certain exceptions, is required to make mandatory prepayments upon the occurrence of certain events of default as defined in the agreement, including but not limited to, the occurrence of a change of control. In addition, upon payment or repayment of any outstanding balance under the Athyrium Credit Facility, the Company will have to pay a 1% exit fee of the total principal payments (whether mandatory, voluntary, or at maturity) made throughout the term. The exit fee of \$0.7 million based on the \$75 million principal amount outstanding, will be accreted to the carrying amount of the debt using the effective interest method over the term of the loan.

All mandatory and voluntary prepayments of the Athyrium Credit Facility are subject to the payment of prepayment premiums as follows: (i) if prepayment occurs prior to the second anniversary of the applicable date of issuance, an amount equal to the amount by which (a) the present value of 105% of the principal prepaid plus all interest that would have accrued on such principal through such second anniversary exceeds (b) the amount of principal prepaid, (ii) if prepayment occurs on or after the second anniversary of the applicable date of issuance but prior to the third anniversary of such issuance, an amount equal to 3% of the principal prepaid, and (iii) if prepayment occurs on or after the third anniversary of the applicable date of issuance but prior to the fourth anniversary of such issuance, an amount equal to 2% of the principal prepaid. No prepayment premium is due on any principal prepaid after the fourth anniversary of the applicable date of issuance.

The Athyrium Credit Facility includes two features upon the event of default requiring (1) additional interest rate upon an event of default accrued at an additional 3%, or a total interest rate of 12.875%, and (2) the lender has a right to declare all outstanding principal and interest immediately payable. These two features were analyzed and determined to be embedded derivatives to be valued as separate financial instruments. These embedded derivatives were bundled and valued as one compound derivative in accordance with the applicable accounting guidance for derivatives and hedging. The Company determined that, due to the unlikely event of default, the embedded derivatives have a *de minimus* value as of December 31, 2018. The derivative liability will be remeasured at fair value at each reporting date, with changes in fair value being recorded as other income (expense) in the consolidated statements of operations.

The Athyrium Credit Facility is secured by a pledge of substantially all of the Company's assets and contains affirmative and negative covenants customary for financings of this type, including limitations on the Company's and its subsidiaries' ability to, among other things, incur and prepay additional debt, grant or permit additional liens, make investments and acquisitions, merge or consolidate with others, dispose of assets, change in the nature of business, enter

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into sale and leaseback transactions, make distributions, and enter into affiliate transactions, in each case, subject to certain exceptions. In addition, the Athyrium Credit Facility also contains a financial covenant requiring the Company to maintain at least \$10.0 million of cash and cash equivalents. As of December 31, 2018, the Company was in compliance with the covenants.

In connection with the Athyrium Credit Facility, the Company issued a warrant ("Warrant"), to purchase up to 270,835 shares of the Company's common stock, at an exercise price per share of \$12.18456. The Warrant is immediately exercisable as to 184,660 shares and will become exercisable as to the remaining 86,175 shares only upon the Company's draw of the Athyrium Term Loan B. The Warrant is exercisable through October 1, 2025. The Warrant is considered equity classified and as such, the Company allocated the proceeds from the Athyrium Term Loan A to the Warrant using the relative fair value method. The initial fair value of the Warrant of \$1.9 million is recorded in equity and creates a debt discount.

In addition, the Company paid certain fees to Athyrium and other third party service provider in the aggregate amount of \$3.0 million. These fees paid Athyrium were recorded as a debt discount while the fees paid to other third party service provider were recorded as debt issuance cost, respectively, in the aggregate amount of \$3.0 million. These costs, along with the fair value of Warrant of \$1.9 million are being amortized using the effective interest method over the term of the Athyrium Credit Facility. The amortization of debt discount and debt issuance cost is included in interest expense within the Consolidated Statements of Operations. As of December 31, 2018, the effective interest rate was 11.42%, which takes into consideration the non-cash accretion of the exit fee and the amortization of the debt discount and issuance costs.

The components of the carrying value of the debt as of December 31, 2018, are detailed below (in thousands):

	<u>December 31,</u> <u>2018</u>
Principal loan balance	\$ 75,000
Debt discount and issuance cost	(4,806)
Exit fee	32
Long-term debt, net	<u>\$ 70,226</u>

The future annual principal payments due under the Athyrium Credit Facility as of December 31, 2018 were as follows (in thousands):

<u>Years Ending December 31,</u>	
2019	—
2020	—
2021	—
2022	16,665
2023	33,330
Thereafter	25,005
Total	<u>\$ 75,000</u>

Note 9: Warrants

The Company has issued warrants in connection with debt transactions that were completed prior to 2017 (see Note 8). Upon the completion of the IPO, the Company's outstanding warrants to purchase preferred stock converted into warrants to purchase common stock.

In connection with and in consideration for the commitment of the Athyrium Credit Facility, on October 1, 2018, the Company issued to Athyrium the Warrant as described in Note 8.

The following table summarizes the common stock warrants outstanding as of December 31, 2018 and December 31, 2017, each exercisable into the number of shares of common stock set forth below as of the specified dates:

Issued	Exercise Price	Expiration Date	Exercisable From	Shares Exercisable at	
				December 31, 2018	December 31, 2017
2013	\$ 7.50	April 2021	July 2017	82,816	82,816
2014	\$ 7.50	November 2024	July 2017	16,000	16,000
2016	\$ 8.27	October 2026	September 2017	14,512	14,512
2018	\$ 12.18	October 2025	October 2018	184,660	—
2018	\$ 12.18	October 2025	(1)	— ⁽¹⁾	—
				<u>297,988</u>	<u>113,328</u>

(1) As of December 31, 2018, warrants outstanding to acquire 86,175 of common stock are not exercisable and are only exercisable upon draw down of Athyrium Term Loan B.

Note 10: Fair Value of Financial Instruments

The Company classifies fair value based measurements using a three-level hierarchy that prioritizes the inputs used to measure fair value. This hierarchy requires entities to maximize the use of observable inputs and minimize the use of unobservable inputs. The three levels of inputs used to measure fair value are as follows: Level 1, quoted market prices in active markets for identical assets or liabilities; Level 2, observable inputs other than quoted market prices included in Level 1, such as quoted market prices for markets that are not active or other inputs that are observable or can be corroborated by observable market data; and Level 3, unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities, including estimates and assumptions developed by the Company, reflective of those that a market participant would use, as inputs to certain pricing models, discounted cash flow methodologies and similar techniques that use significant unobservable inputs.

Cash, cash equivalents and restricted cash are Level 1 assets which are comprised of funds held in checking and money market accounts. The carrying value of accounts payable and accrued expenses approximate their fair value due to the short-term nature of these assets and liabilities. Management believes that the Company's long-term debt (See Note 8) bears interest at the prevailing market rate for instruments with similar characteristics and, accordingly, the carrying value of long-term debt, including the current portion, also approximates its fair value. The fair value of the outstanding debt was estimated using a discounted cash flow analysis based on current market interest rates for debt issuances with similar remaining years to maturity, adjusted for credit risk, which represents a Level 3 measurement. There were no transfers between fair value measurement levels during the year ended December 31, 2018 or December 31, 2017.

The Company has historically classified the value of the warrant liability as a Level 3 measurement within the fair value hierarchy because the fair value is derived using significant unobservable inputs, which included the estimated volatility, the estimated fair value of the underlying preferred stock, and to the extent that the number of exercisable shares underlying the warrants were adjustable based on the amount of the 2014 Term Loans drawn down or the probability that the Company would draw down on the 2014 Debt Facility. Upon the completion of the IPO, the Company's outstanding warrants to purchase preferred stock converted into warrants to purchase common stock and the

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Company reclassified the fair value of the warrant liability to additional paid-in capital. All warrants are currently classified as equity and they are no longer re-measured to their fair value.

The following table provides a summary of changes in the fair value of the Company's warrant liability, which is included as a component of other (income) expense which was subsequently remeasured to the fair value at the date of the IPO and reclassified to additional paid-in capital at that time (in thousands):

	Year Ended December 31,	
	2018	2017
	Warrant Liability	Warrant Liability
Fair value - December 31,	\$ —	\$ 1,039
Change in fair value of warrant liability	—	1,844
Reclassification of preferred warrant liability	—	(2,883)
Fair value - December 31,	\$ —	\$ —

Note 11: Preferred Stock

Adjustment to Conversion Ratios

On July 7, 2017, the Company effected a one-for-5.2083 reverse stock split of the Company's issued and outstanding shares of common stock and a proportional adjustment to the existing conversion ratios for the Company's convertible preferred stock. The par value per share and authorized shares of common and convertible preferred stock were not adjusted as a result of the reverse stock split.

Convertible preferred stock consisted of the following as of December 31, 2016 (in thousands, except share amounts):

	Designated		Shares Issued and Outstanding	Liquidation Value	Carrying Value	Common Stock Issuable Upon Conversion (1)
	Shares	Issuance Dates				
Series Seed	11,323,209	December 2009	2,000,001			
		October 2010	2,000,003			
		February 2012	7,243,205			
			11,243,209	\$ 11,243	\$ 11,065	2,158,708
Series A	9,583,432	February 2013	4,791,716			
		July 2013	4,791,716			
			9,583,432	\$ 11,500	\$ 10,736	1,840,029
Series B	16,597,221	April 2014	15,624,999	\$ 22,500	\$ 22,185	3,000,017
Series B-1	4,629,629	August 2015	4,629,629	\$ 7,000	\$ 6,885	888,894
Series C	43,034,639	April 2016	42,782,688	\$ 67,922	\$ 67,520	8,214,322

- (1) No fractional shares of Common Stock were issuable upon conversion of the preferred stock. In lieu of any fractional shares to which the holder would otherwise be entitled, the Company paid cash equal to such fraction multiplied by the fair market value of a share of common stock as determined in good faith by the Board of Directors (the "Board") of the Company. Whether or not payments for fractional shares would be made upon such conversion was determined on the basis of the total number of shares of preferred stock the holder was at the time converting into common stock and the aggregate number of shares of common stock issuable upon such conversion.

Upon the closing of the Company's IPO on July 25, 2017, all outstanding shares of convertible preferred stock converted into 16,101,970 shares of the Company's common stock. Following the closing of the Company's IPO, the Company is authorized to issue 5.0 million shares of undesignated preferred stock in one or more series. As of December 31, 2017 and December 31, 2018, no shares of preferred stock were issued or outstanding.

Series Seed Convertible Preferred Stock

In December 2009, the Company issued an aggregate of 2,000,001 shares of Series Seed Preferred Stock for gross proceeds of \$2.0 million or \$1.00 per share. In October 2010, the Company issued an aggregate of 2,000,003 shares of Series Seed Preferred Stock to existing investors for gross proceeds of \$2.0 million or \$1.00 per share. In February 2012, the Company issued an aggregate of 7,243,205 shares of Series Seed Preferred Stock to existing and new investors, which included 6,150,000 shares for gross proceeds of \$6.2 million and 1,093,205 shares converted from convertible debt of \$1.0 million principal and \$93,000 accrued interest. Costs incurred in connection with each of the individual issuances of Series Seed Preferred Stock were \$124,000, \$39,000 and \$15,000 respectively, which have been recorded as a reduction to the carrying amount of the Series Seed Preferred Stock. On July 25, 2017, upon the closing of the Company's IPO, all outstanding shares of Series Seed Preferred Stock converted into 2,158,708 shares of the Company's common stock. As such, there were no outstanding shares of Series Seed Preferred Stock as of December 31, 2017 or December 31, 2018.

Series A Convertible Preferred Stock

In February 2013, the Company issued 4,791,716 shares of Series A Preferred Stock, at a purchase price of \$1.20 per share for gross proceeds of \$5.8 million. Additionally, in accordance with the terms of the Series A Preferred Stock Purchase Agreement, investors were granted the right to purchase up to an additional 4,791,716 shares of Series A Preferred Stock, at a price of \$1.20 per share, upon the Company meeting certain milestone criteria by December 31, 2013, approval of the Board and approval of the investors holding a majority of the outstanding shares of Series A Preferred Stock. In June 2013, the Board approved waiving one of the milestone events provided for in the Series A Preferred Stock Purchase Agreement. Accordingly, the second tranche of Series A Preferred Stock closed on July 15, 2013 and the Company issued 4,791,716 shares of Series A Preferred Stock for gross proceeds of \$5.8 million, or \$1.20 per share. Costs incurred in connection with the issuance of the Series A Preferred Stock were \$93,000, which have been recorded as a reduction in the carrying amount of the Series A Preferred Stock. On July 25, 2017, upon the closing of the Company's IPO, all outstanding shares of Series A Preferred Stock converted into 1,840,029 shares of the Company's common stock. As such, there were no outstanding shares of Series A Preferred Stock as of December 31, 2017 or December 31, 2018.

Series B Convertible Preferred Stock

In April 2014, the Company issued 15,624,999 shares of Series B Preferred Stock for gross proceeds of \$22.5 million or \$1.44 per share which included conversion of the outstanding principal and interest on the 2013 Notes of \$5.1 million, which converted into 3,562,785 shares of Series B Preferred Stock pursuant to the terms of the Notes. Costs incurred in connection with the issuance of the Series B Preferred Stock were \$315, which have been recorded as a reduction in the carrying amount of the Series B Preferred Stock. On July 25, 2017, upon the closing of the Company's IPO, all outstanding shares of Series B Preferred Stock converted into 3,000,017 shares of the Company's common stock. As such, there were no outstanding shares of Series B Preferred Stock as of December 31, 2017 or December 31, 2018.

Series B-1 Convertible Preferred Stock

On August 17, 2015, the Company issued 4,629,629 shares of Series B-1 Senior Convertible Preferred Stock ("Series B-1 Preferred Stock") for gross proceeds of \$7.0 million or \$1.512 per share. Costs incurred in connection with the issuance of the Series B-1 Preferred Stock were \$115,000, which have been recorded as a reduction in the carrying amount of the Series B-1 Preferred Stock. On July 25, 2017, upon the closing of the Company's IPO, all outstanding shares of Series B-1 Preferred Stock converted into 888,894 shares of the Company's common stock. As such, there were no outstanding shares of Series B-1 Preferred Stock as of December 31, 2017 or December 31, 2018.

Series C Convertible Preferred Stock

On April 5, 2016, the Company issued 42,782,688 shares of Series C Preferred Stock for gross proceeds of \$67.9 million or \$1.5876 per share. Costs incurred in connection with the issuance of the Series C Preferred Stock were \$402,000, which have been recorded as a reduction in the carrying amount of the Series C Preferred Stock. On July 25, 2017, upon the closing of the Company's IPO, all outstanding shares of Series C Preferred Stock converted into 8,214,322 shares of the Company's common stock. As such, there were no outstanding shares of Series C Preferred Stock as of December 31, 2017 or December 31, 2018.

Terms Applicable to Each Series of Preferred Stock

The Series Seed Preferred Stock, Series A Preferred Stock, Series B Preferred Stock, Series B-1 Preferred Stock and Series C Preferred Stock were classified outside of stockholders' equity (deficit) because the shares contained certain redemption features that are not solely within the control of the Company.

The rights, preferences, and privileges of the preferred stock were as follows:

Voting

Preferred stockholders were entitled to vote on all matters and are entitled to the number of votes equal to the number of shares of common stock into which each share of preferred stock converted.

Dividends

Preferred stockholders were entitled to receive, when and if declared by the Board out of any funds legally available, dividends at the rate of 8% of the original issue price per share. No such dividends were declared or paid through July 25, 2017, the date on which all of the Company's preferred stock was converted to common stock in connection with the closing of the Company's IPO.

Liquidation Rights

Prior to the IPO, upon any liquidation, dissolution, or winding-up of the Company, whether voluntary or involuntary, each holder of the then outstanding Series C Preferred Stock and then Series B Preferred Stock and Series B-1 Preferred Stock was entitled to distribution, before any distribution of payments is made to holders of Series Seed Preferred Stock or Series A Preferred Stock or common stockholders, an amount equal to the greater of (i) (A) in the case of the Series C Preferred Stock, \$1.5876 per share (B) in the case of the Series B Preferred Stock, \$1.44 per share and (C) in the case of the Series B-1 Preferred Stock, \$1.512 per share, plus, in each case, any declared but unpaid dividends and (ii) the amount such holder would have received if such holder had converted its shares into common stock immediately prior to such liquidation, dissolution, or winding-up of the Company. After the payment of the preferential amounts to the holders of the Series C Preferred Stock, then Series B Preferred Stock and the Series B-1 Preferred Stock, the holders of the Series Seed Preferred Stock and Series A Preferred Stock were entitled to a distribution of an amount equal to the greater of (i) (A) in the case of the Series Seed Preferred Stock \$1.00 per share, (B) in the case of the Series A Preferred Stock \$1.20 per share, plus, in each case, an amount equal to all declared but unpaid dividends; and (ii) the amount such holder would have received if such holder had converted its shares into common stock immediately prior to such liquidation, dissolution, or winding-up of the Company.

If there were insufficient assets legally available to make the distribution to the holders of the Series Seed Preferred Stock, Series A Preferred Stock, Series B Preferred Stock, Series B-1 Preferred Stock, and Series C Preferred Stock in full, then the available assets would have been distributed on a pro rata basis, first to the holders of the Series C Preferred Stock and then to Series B Preferred Stock and Series B-1 Preferred Stock, then any remaining assets available will be distributed on a pro rata basis to the holders of the Series Seed Preferred Stock and Series A Preferred Stock. Any remaining assets legally available for distribution after satisfaction of the liquidation preferences of the preferred stock would have been distributed to the holders of common stock on a pro-rata basis based upon the number of shares of common stock held by the common stockholders.

Conversion

Each share of preferred stock was convertible into common stock, at any time, at the option of the holder, at the then applicable conversion rate for each series of preferred stock and subject to adjustment in accordance with anti-dilution provisions. Following the Company's reverse stock split on July 7, 2017, each share of preferred stock was convertible into 0.1920 shares of common stock. Each share of preferred stock would automatically convert into common stock at the then applicable conversion rate for each series of preferred stock upon the earlier of (i) the closing of the Company's first underwritten public offering of its common stock in which the Company receives aggregate gross proceeds of at least \$30.0 million, and that is listed on the New York Stock Exchange or Nasdaq Stock Market or (ii) a date specified by vote or written consent of the majority of the outstanding preferred stock. In addition, in the event that any holder of at least 500,000 shares of preferred stock did not participate in a Qualified Financing, as defined in the Company's Certificate of Incorporation, in effect prior to the consummation of the IPO (the "Charter"), effective upon the consummation of the Qualified Financing, a portion of the holder's preferred stock (as determined in accordance with the Charter) would automatically convert into a new series of preferred stock with the conversion price for such new series fixed at the applicable conversion price in effect immediately prior to the consummation of the Qualified Financing, and such conversion price would be subject to any adjustment thereafter.

Note 12: Common Stock

Common Stock

The Company was authorized to issue up to 120,000,000 shares of common stock with a \$0.001 par value per share as of December 31, 2018 and 2017. The Company had 33,863,077 and 24,538,309 shares of common stock issued and outstanding as of December 31, 2018 and 2017, respectively.

Holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders and do not have cumulative voting rights. Each election of directors by our stockholders will be determined by a plurality of the votes cast by the stockholders entitled to vote on the election. Holders of common stock are entitled to receive proportionately any dividends as may be declared by our Board, subject to any preferential dividend rights of outstanding preferred stock.

In the event of our liquidation or dissolution, the holders of our common stock are entitled to receive proportionately all assets available for distribution to stockholders after the payment of all debts and other liabilities and subject to the prior rights of any of our outstanding preferred stock. Holders of our common stock have no preemptive, subscription, redemption or conversion rights. The rights, preferences and privileges of holders of our common stock are subject to and may be adversely affected by the rights of the holders of shares of any series of our preferred stock that we may designate and issue in the future.

Voting, dividend and liquidation rights of the holders of the common stock is subject to and qualified by the rights, powers and preferences of the holders of the preferred stock.

Voting

Each holder of outstanding shares of common stock shall be entitled to one vote in respect of each share. The holders of outstanding shares of common stock, voting together as a single class, shall be entitled to elect one director. The number of authorized shares of common stock may be increased or decreased by the affirmative vote of a majority of the outstanding shares of common stock and preferred stock voting together as a single class.

Dividends

Subject to the payment in full of all preferential dividends to which the holders of the preferred stock are entitled hereunder, the holders of common stock shall be entitled to receive dividends out of funds legally available therefor at such times and in such amounts as the Board may determine in its sole discretion, with holders of preferred stock and common stock sharing *pari passu* in such dividends.

Liquidation Rights

Upon any liquidation, after the payment or provision for payment of all debts and liabilities of the Company and all preferential amounts to which the holders of preferred stock are entitled with respect to the distribution of assets in liquidation, the holders of common stock shall be entitled to share ratably in the remaining assets of the Company available for distribution.

Reverse Stock Split

On July 7, 2017, the Company effected a one-for-5.2083 reverse stock split of the Company's issued and outstanding shares of common stock and a proportional adjustment to the existing conversion ratios for the Company's convertible preferred stock. The par value per share and authorized shares of common and convertible preferred stock were not adjusted as a result of the reverse stock split. All common stock and common stock per share amounts within the financial statements and notes thereto have been retroactively adjusted for all periods presented to give effect to this reverse stock split, including reclassifying an amount equal to the reduction in par value of common stock to additional paid-in capital.

Reserved Shares

As of December 31, 2018 and 2017, the Company has reserved shares of common stock for issuance upon exercise of rights under warrants, under the Amended and Restated 2017 Employee Stock Purchase Plan ("A&R ESPP") and upon the exercise of stock options as follows (see Note 13):

	<u>December 31,</u> <u>2018</u>	<u>December 31,</u> <u>2017</u>
Warrant rights to acquire Common Stock	384,163	113,328
A&R ESPP	223,341	—
Shares reserved for outstanding inducement stock option awards	498,000	—
2009 Plan	2,563,072	2,868,449
2017 Plan	<u>3,130,910</u>	<u>2,025,633</u>
Total	<u>6,799,486</u>	<u>5,007,410</u>

Note 13: Stock-based Compensation

Stock Incentive Plans

In December 2009, the Board adopted the 2009 Employee, Director and Consultant Equity Incentive Plan (the "2009 Plan") for the issuance of common stock and stock options to employees, officers, directors, consultants, and advisors.

In July 2017, the Company's 2017 Equity Incentive Plan (the "2017 Plan") became effective, and as a result no further awards will be made under the 2009 Plan. The 2017 Plan was established to provide equity based ownership opportunities for employees, officers, directors, consultants, and advisors. As of December 31, 2018, there were 3,130,910 shares of common stock available for grant under the 2017 Plan. In addition, any shares of common stock subject to awards under the 2009 Plan that expire, are forfeited, or are otherwise surrendered, without having been fully exercised or resulting in any common stock being issued will become available for issuance under the 2017 Plan, up to an additional 2,563,072 shares, which is the number of shares issuable pursuant to outstanding awards granted under the 2009 Plan.

Also approved under the 2017 Plan is an annual increase for each of the years through December 31, 2027, equal to the least of (i) 3,573,766 shares of common stock, (ii) 4% of the shares of common stock outstanding on December 31 of the prior year and (iii) an amount determined by the Board.

Under the plans, the Board determines the number of shares of common stock to be granted pursuant to the awards, as well as the exercise price and terms of such awards. The exercise price of incentive stock options could not be less than the fair value of the common stock on the date of grant. Stock options awarded under the plans expire 10 years after the grant date, unless the Board sets a shorter term. Options granted under the plans generally vest over a four-year period. A portion of the unvested stock options will vest upon the sale of all or substantially all of the stock or assets of the Company.

In the past, the Company had granted stock options which contain performance-based vesting criteria. These criteria were milestone events that were specific to the Company's corporate goals. Stock-based compensation expense associated with performance-based stock options is recognized if the achievement of the performance condition is considered probable using management's best estimates. As of December 31, 2018 and December 31, 2017 there were no performance-based awards outstanding.

Employee Stock Purchase Plan

In 2017, the Company approved the 2017 Employee Stock Purchase Plan, under which participating employees can authorize the Company to withhold a portion of their base pay during consecutive six-month payment periods for the purchase of shares of the Company's common stock. At the conclusion of the period, participating employees can purchase shares of the Company's common stock at 85% of the lesser of the closing price of the common stock on (i) the first business day of the plan period or (ii) the exercise date. The initial six-month period commenced on January 1, 2019.

Inducement Stock Option Awards

During the year ended December 31, 2018, the Company granted non-statutory stock options to purchase an aggregate of 498,000 shares of the Company's common stock to new employees. These stock options will vest over a four-year period, with 25% of the shares underlying each option award vesting on the one-year anniversary of the applicable employees' hire date and the remaining 75% of the shares underlying each option award vesting monthly thereafter for three-years. Vesting of each option is subject to such employee's continued service with the Company through the applicable vesting dates. These stock options were granted outside of the 2017 Plan as an inducement material to each employee's acceptance of employment with the Company in accordance with Nasdaq Listing Rule 5635(c)(4).

A summary of option activity for employee and non-employee consultant awards under the 2009 Plan, the 2017 Plan and inducement grants for the year ended December 31, 2018 is as follows:

	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value (in thousands)
Outstanding at January 1, 2018	3,738,928	\$ 6.93	8.4	\$ 44,578
Granted	1,728,190	12.47		
Exercised	(181,633)	2.92		
Forfeited	(173,795)	6.40		
Outstanding at December 31, 2018	<u>5,111,690</u>	\$ 8.96	8.0	\$ 3,771
Vested or expected to vest at December 31, 2018	<u>5,111,690</u>	\$ 8.96	8.0	\$ 3,771
Options exercisable at December 31, 2018	<u>2,644,374</u>	\$ 5.96	7.2	\$ 3,175

The Company records stock-based compensation related to stock options granted at fair value. The Company utilizes the Black-Scholes option-pricing model to estimate the fair value of stock option grants and to determine the related compensation expense. The assumptions used in calculating the fair value of stock-based payment awards

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represent management's best estimates. The assumptions used in determining fair value of the stock options granted in the years ended December 31, 2018 and 2017 are as follows:

	Year Ended December 31,	
	2018	2017
Expected volatility	80% – 115%	102% – 122%
Risk-free interest rate	2.63% – 2.96%	1.81% – 2.29%
Expected dividend yield	0%	0%
Expected term (in years)	5.27 – 6.13	5.04 – 9.82

The Company derived the risk-free interest rate assumption from the U.S. Treasury rates for U.S. Treasury zero-coupon bonds with maturities similar to those of the expected term of the awards being valued. The Company based the assumed dividend yield on its expectation of not paying dividends in the foreseeable future. The Company calculated the expected term of options using the simplified method, as the Company lacks relevant historical data due to the Company's limited operating experience. The estimated volatility is based upon the historical volatility of comparable companies with publicly available share prices. The impact of forfeitures on compensation expense is recorded as they occur.

The weighted average grant-date fair value of options granted during the years ended December 31, 2018 and 2017, was \$9.05 and \$13.87, respectively. The fair value is being recognized over the vesting period of the options on a straight-line basis as the services are being provided. As of December 31, 2018 and 2017, there was \$21.1 million and \$15.4 million of unrecognized compensation cost related to the stock options granted, which is expected to be recognized over a weighted-average period of 2.84 years and 3.11 years, respectively. Stock-based compensation recognized was classified in the consolidated statements of operations as follows (in thousands):

	Year Ended	
	December 31,	December 31,
	2018	2017
Research and development	\$ 2,660	\$ 1,267
Selling, general and administrative	5,955	2,304
Total	<u>\$ 8,615</u>	<u>\$ 3,571</u>

For the year ended December 31, 2018, stock-based compensation expense for the Company's manufacturing employees related to INVELTYS manufactured since the FDA approval of \$0.2 million, has been capitalized into inventory as a component of overhead expense.

The Company received cash proceeds from the exercise of stock options of \$0.5 million and \$0.4 million during the years ended December 31, 2018 and 2017, respectively. The total intrinsic value of options exercised for the year ended December 31, 2018 and 2017, was \$1.3 million and \$4.7 million, respectively.

Note 14: Income Taxes

The Company has had no income tax expense due to operating losses incurred for the years ended December 31, 2018 and 2017. The Company has also not recorded any income tax benefits for the net operating losses incurred in each period due to its uncertainty of realizing a benefit from those items. All of the Company's losses before income taxes were generated in the United States.

Tax Reform Language Definition—On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act (the "Tax Act"). The Tax Act makes broad and complex changes to the U.S. tax code, including but not limited to, (1) reducing the U.S. federal corporate tax rate from 35 percent to 21 percent; (2) requiring companies to pay a one-time transition tax on certain unrepatriated earnings of foreign subsidiaries; (3) generally eliminating U.S. federal income taxes on dividends from foreign subsidiaries; (4) requiring a current inclusion in U.S. federal taxable income of certain earnings of controlled foreign corporations; (5) eliminating the corporate alternative minimum tax (AMT) and changing how existing AMT credits can be realized; (6)

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creating the base erosion anti-abuse tax (BEAT), a new minimum tax; (7) creating a new limitation on deductible interest expense; and (8) changing rules related to uses and limitations of net operating loss carryforwards created in tax years beginning after December 31, 2017.

A reconciliation of the U.S. federal statutory income tax rate to the Company's effective income tax rate is as follows:

	Year Ended December 31,	
	2018	2017
Federal statutory income tax rate	21.0 %	35.0 %
Effect of:		
Change in valuation allowance	(23.0)	3.5
Impact on changes in tax laws	—	(42.5)
State income taxes, net of federal benefit	5.9	3.9
Research and development tax credits	2.7	3.2
Other	(6.6)	(3.1)
Effective income tax rate	<u>— %</u>	<u>— %</u>

Net deferred tax assets as of December 31, 2018 and 2017 consisted of the following (in thousands):

	December 31,	
	2018	2017
Net operating loss carryforwards	\$ 46,933	\$ 33,689
Research and development tax credit carryforwards	5,070	4,470
Start-up costs and other	4,580	2,024
Total deferred tax assets	56,583	40,183
Depreciation and amortization	—	(9)
Total deferred tax liabilities	—	(9)
Valuation allowance	(56,583)	(40,174)
Net deferred tax assets	<u>\$ —</u>	<u>\$ —</u>

The Company has evaluated the positive and negative evidence bearing upon its ability to realize the deferred tax assets. Management has considered the Company's history of cumulative net losses incurred since inception and its lack of commercialization of any products or generation of any revenue from product sales since inception and has concluded that it is more likely than not that the Company will not realize the benefits of the deferred tax assets. Accordingly, a full valuation allowance has been established against the deferred tax assets as of December 31, 2018 and 2017. The valuation allowance increased by \$16.4 million in 2018 due to an increase in the net operating loss carryforwards and research and development tax credits and decreased by \$0.9 million in 2017 due to the tax legislation included in the Tax Act. Management reevaluates the positive and negative evidence at each reporting period.

At December 31, 2018 and 2017, the Company has federal net operating loss carryforwards of \$165.0 million and \$120.9 million, respectively, which may be available to offset future federal tax liabilities and expire at various dates beginning in 2030 through 2038. At December 31, 2018 and 2017, the Company has state net operating loss carryforwards of \$156.4 million and \$104.0 million, respectively, which may be available to offset future state income tax liabilities and expire at various dates beginning in 2030 through 2038. As of December 31, 2018 and 2017, the Company also had federal and state research and development credit carryforwards of approximately \$5.1 million and \$4.5 million, respectively, which are available to reduce future income taxes, if any, from 2030 through 2038 (federal) and 2025 through 2033 (state).

Realization of the future tax benefits is dependent on many factors, including the Company's ability to generate taxable income within the net operating loss carryforward period. Under the provisions of Section 382 of the Internal Revenue Code of 1986, certain substantial changes in the Company's ownership, including a sale of the Company, or significant changes in ownership due to sales of equity, may have limited, or may limit in the future, the amount of net

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operating loss carryforwards, which could be used annually to offset future taxable income. The Company has determined that ownership changes have occurred as of April 2016, and such changes have not materially impacted the Company's ability to utilize its net operating loss carryforwards and research and development tax credits to offset future tax liabilities. The Company may be further limited by any changes that may have occurred or may occur subsequent to December 31, 2017.

The Company files its corporate income tax returns in the United States and Massachusetts, California, Illinois, Kentucky, North Carolina, New Hampshire, New York, Pennsylvania and Texas. All tax years since the date of incorporation remain open to examination by the major taxing jurisdictions (state and federal) to which the Company is subject, as carryforward attributes generated in years past may still be adjusted upon examination by the Internal Revenue Service ("IRS") or other authorities if they have or will be used in a future period. The Company is not currently under examination by the IRS or any other jurisdictions for any tax year.

As of December 31, 2018 and 2017 the Company had no uncertain tax positions. The Company's policy is to recognize interest and penalties related to income tax matters as a component of income tax expense, of which no interest or penalties were recorded for the years ended December 31, 2018 and 2017.

Note 15: Commitments and Contingencies

License Agreement — In 2009, the Company entered into an exclusive license agreement with The Johns Hopkins University ("JHU"), as amended in November 2012, May 2014, August 2014, October 2014 and June 2018, which licensed to the Company a portfolio of specified patent rights and remains in full force and effect. Pursuant to the terms of the agreement, as amended, the Company agreed to pay an initial license fee, minimum annual payments beginning in 2017, certain development and commercial milestone payments, royalties on product sales and reimburse all or a portion of the costs associated with the preparation, filing, prosecution and maintenance of the agreed-upon patents and patent applications to JHU.

After 2016 and until the first commercial sale of product, the minimum annual payment will be \$37,500. If the Company achieves the first commercial sale of the product in the United States, European Union, or Japan, the annual minimum payment will increase to \$0.1 million. The Company is obligated to pay JHU low single-digit running royalties based upon a percentage of net sales of the licensed products. The Company also has an obligation to pay JHU certain one-time development and commercial milestone payments. The Company recorded research and development expenses related to the JHU agreement of \$0.3 million and \$0.1 million for the years ended December 31, 2018 and 2017, respectively.

In 2015, the Company entered into a non-exclusive license agreement with Massachusetts Eye and Ear Infirmary, which licensed to the Company a certain questionnaire called "Symptom Assessment in Dry Eye" for use in its clinical trials. Pursuant to the terms of the agreement, the Company agreed to pay an initial license fee of \$10,000. The company has made annual payments of \$5,000 for each year ended December 31, 2018 and 2017. The agreement terminated in 2018.

The Company's minimum obligations due under its license agreements as of December 31, 2018, are as follows (in thousands):

Year Ended December 31,	
2019	\$ 413
2020	113
2021	113
2022	113
2023	113
Thereafter	1,125
Total minimum license payments	<u>\$ 1,990</u>

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Other Commitments — The Company entered into a commercial supply agreement with Catalent Pharma Solutions, LLC to manufacture commercial supplies of INVELTYS and KPI-121 0.25%, with annual minimum purchase requirements. The Company is subject to these minimum purchase requirements upon receiving an approval for commercial sale for the approved product.

The Company has the following minimum purchase obligations for INVELTYS (in thousands):

Year Ended December 31,	
2019	\$ 606
2020	801
2021	1,173
2022	1,173
2023	1,173
Thereafter	2,035
Total minimum purchase commitments	\$ 6,961

Litigation—The Company is not currently subject to any material legal proceedings.

Guarantees and Indemnifications—The Company’s Certificate of Incorporation authorizes the Company to indemnify and advance expenses to its officers and directors and agents to the fullest extent permitted by law. The Company leases office space under non-cancelable operating leases. Under the leases the Company is required to indemnify the landlord against claims, actions, or damages incurred in connection with, among other items, the Company’s occupancy and use of the premises.

The Company’s equity agreements and certain other arrangements include standard indemnifications against claims, actions, or other matters that may arise in connection with these arrangements.

As of December 31, 2018 and 2017, the Company had not experienced any losses related to these indemnification obligations, and no claims with respect thereto were outstanding. The Company does not expect significant claims related to these indemnification obligations and has no amount accrued related to these contingencies. The Company does not expect these indemnifications to have a material adverse effect on these consolidated financial statements.

Note 16: Defined Contribution Plan

The Company has a 401(k) defined contribution plan (the “401(k) Plan”) for substantially all of its employees. Eligible employees may make pretax contributions to the 401(k) Plan up to statutory limits.

The Company made discretionary matching contributions of \$0.2 million and \$83,000 to the 401(k) Plan during for the year ended December 31, 2018 and 2017, respectively.

Note 17: Related Parties

The Company has engaged in the following related-party transactions:

A founder, who is also a stockholder and director, served as a consultant to the Company. The individual is employed by a university, which has no relationship to the Company. For the years ended December 31, 2017, the Company paid the individual \$35,000, for the consulting services which are included in research and development expense in the accompanying consolidated statements of operations. Immediately prior to the effectiveness of the Company’s registration statement on Form S-1 for the Company’s IPO in July 2017, the Company terminated the consulting services agreement with the individual.

Note 18: Selected Quarterly Financial Data

Selected quarterly financial data is as follows (in thousands, except per share data):

	Three months ended			
	March 31, 2017	June 30, 2017	September 30, 2017	December 31, 2017
	(in thousands, except per share data)			
Total operating expenses	\$ 9,571	\$ 9,630	\$ 9,534	\$ 11,140
Total other income (expense)	(188)	(1,356)	(641)	(150)
Net loss attributable to common stockholders	\$ (9,759)	\$ (10,986)	\$ (10,175)	\$ (11,290)
Net loss per share attributable to common stockholders—basic and diluted	\$ (8.26)	\$ (9.30)	\$ (0.56)	\$ (0.46)

	Three months ended			
	March 31, 2018	June 30, 2018	September 30, 2018	December 31, 2018
	(in thousands, except per share data)			
Total operating expenses	\$ 11,139	\$ 14,519	\$ 15,496	\$ 23,567
Total other income (expense)	(158)	(101)	(107)	(1,651)
Net loss attributable to common stockholders	\$ (11,297)	\$ (14,620)	\$ (15,603)	\$ (25,218)
Net loss per share attributable to common stockholders—basic and diluted	\$ (0.46)	\$ (0.60)	\$ (0.63)	\$ (0.76)

Note 19: Subsequent Events

The Company has evaluated all events and transactions that occurred after the balance sheet date through the date of this filing. During this period, the Company did not have any material subsequent events that impacted its consolidated financial statements or disclosures.

KALA PHARMACEUTICALS, INC.

AMENDED AND RESTATED 2017 EMPLOYEE STOCK PURCHASE PLAN

The purpose of this Amended and Restated 2017 Employee Stock Purchase Plan (this “Plan”) is to provide eligible employees of Kala Pharmaceuticals, Inc. (the “Company”) and certain of its subsidiaries with opportunities to purchase shares of the Company’s common stock, \$0.001 par value per share (the “Common Stock”), commencing at such time and on such dates as the Board of Directors of the Company (the “Board”) shall determine. Subject to adjustment under Section 15 hereof, the number of shares of Common Stock that have been approved for this purpose is the sum of:

- (a) 1,163,227 shares of Common Stock; plus
- (b) an annual increase to be added on the first day of each fiscal year, commencing on January 1, 2019 and ending on December 31, 2029, equal to the least of (i) 4,653,311 shares of Common Stock, (ii) 1% of the outstanding shares on such date and (iii) an amount determined by the Board.

This Plan is intended to qualify as an “employee stock purchase plan” as defined in Section 423 of the Internal Revenue Code of 1986, as amended (the “Code”), and the regulations issued thereunder, and shall be interpreted consistent therewith.

1. Administration. The Plan will be administered by the Board or by a Committee appointed by the Board (the “Committee”). The Board or the Committee has authority to make rules and regulations for the administration of the Plan and its interpretation and decisions with regard thereto shall be final and conclusive.

2. Eligibility. All employees of the Company and all employees of any subsidiary of the Company (as defined in Section 424(f) of the Code) designated by the Board or the Committee from time to time (a “Designated Subsidiary”), are eligible to participate in any one or more of the offerings of Options (as defined in Section 9) to purchase Common Stock under the Plan provided that:

- (a) they are customarily employed by the Company or a Designated Subsidiary for more than 20 hours a week and for more than five months in a calendar year; and
- (b) they are employees of the Company or a Designated Subsidiary on the first day of the applicable Plan Period (as defined below).

No employee may be granted an Option hereunder if such employee, immediately after the Option is granted, owns 5% or more of the total combined voting power or value of the stock of the Company or any subsidiary. For purposes of the preceding sentence, the attribution rules of Section 424(d) of the Code shall apply in determining the stock ownership of an employee, and all stock that the employee has a contractual right to purchase shall be treated as stock owned by the employee.

The Company retains the discretion to determine which eligible employees may participate in an offering pursuant to and consistent with Treasury Regulation Sections 1.423-2(e) and (f).

3. Offerings. The Company will make one or more offerings (“Offerings”) to employees to purchase stock under this Plan. Offerings will begin at such time and on such dates as the Board shall determine, or the first business day thereafter (such dates, the “Offering Commencement Dates”). Each Offering Commencement Date will begin a six (6) month period (a “Plan Period”) during which payroll deductions will be made and held for the purchase of Common Stock at the end of the Plan Period. The Board or the Committee may, at its discretion, choose a different Plan Period of not more than twelve (12) months for Offerings.

4. Participation. An employee eligible on the Offering Commencement Date of any Offering may participate in such Offering by completing and forwarding either a written or electronic payroll deduction authorization form to the employee’s appropriate payroll office at least 15 days prior to the applicable Offering Commencement Date. The form will authorize a regular payroll deduction from the Compensation received by the employee during the Plan Period. Unless an employee files a new form or withdraws from the Plan, his or her deductions and purchases will continue at the same rate for future Offerings under the Plan as long as the Plan remains in effect. The term “Compensation” means the amount of money reportable on the employee’s Federal Income Tax Withholding Statement, including or excluding, as determined in the discretion of the Committee with respect to each Plan Period: overtime, shift premium, incentive or bonus awards, allowances and reimbursements for expenses such as relocation allowances for travel expenses, income or gains associated with the grant or vesting of restricted stock, income or gains on the exercise of Company stock options or stock appreciation rights, and similar items, whether or not shown or separately identified on the employee’s Federal Income Tax Withholding Statement, but including, in the case of salespersons, sales commissions to the extent determined by the Board or the Committee; provided, that in all cases, a uniform method of determining Compensation must be used for all participants in any particular Plan Period.

5. Deductions. The Company will maintain payroll deduction accounts for all participating employees. With respect to any Offering made under this Plan, an employee may authorize a payroll deduction in any percentage amount (in whole percentages) up to a maximum of 15% of the Compensation he or she receives during the Plan Period or such shorter period during which deductions from payroll are made. The Board or the Committee may, at its discretion, designate a lower maximum contribution rate. The minimum payroll deduction is such percentage of Compensation as may be established from time to time by the Board or the Committee.

6. Deduction Changes. An employee may decrease or discontinue his or her payroll deduction once during any Plan Period, by filing either a written or electronic new payroll deduction authorization form. However, an employee may not increase his or her payroll deduction during a Plan Period. If an employee elects to discontinue his or her payroll deductions during a Plan Period, but does not elect to withdraw his or her funds pursuant to Section 8 hereof, funds deducted prior to his or her election to discontinue will be applied to the purchase of Common Stock on the Exercise Date (as defined below).

7. Interest. Interest will not be paid on any employee accounts, except to the extent that the Board or the Committee, in its sole discretion, elects to credit employee accounts with interest at such rate as it may from time to time determine.

8. Withdrawal of Funds. An employee may at any time prior to the close of business on the fifteenth business day prior to the end of a Plan Period and for any reason permanently draw out the balance accumulated in the employee's account and thereby withdraw from participation in an Offering. Partial withdrawals are not permitted. The employee may not begin participation again during the remainder of the Plan Period during which the employee withdrew his or her balance. The employee may participate in any subsequent Offering in accordance with terms and conditions established by the Board or the Committee.

9. Purchase of Shares.

(a) Number of Shares. On the Offering Commencement Date, the Company will grant to each eligible employee who is then a participant in the Plan an option (an "Option") to purchase on the last business day of such Plan Period (the "Exercise Date") at the applicable purchase price (the "Option Price") up to 25,000 shares of Common Stock; provided, however, that no employee may be granted an Option which permits his or her rights to purchase Common Stock under this Plan and any other employee stock purchase plan (as defined in Section 423(b) of the Code) of the Company and its subsidiaries, to accrue at a rate which exceeds \$25,000 of the fair market value of such Common Stock (determined at the date such Option is granted) for each calendar year in which the Option is outstanding at any time; and, provided, further, however, that the Committee may, in its discretion, set a different fixed maximum number of shares of Common Stock that each eligible employee may purchase per Plan Period which number shall be subject to the second clause of this Section 9(a).

(b) Option Price. The Board or the Committee shall determine the Option Price for each Plan Period, including whether such Option Price shall be determined based on the lesser of the closing price of the Common Stock on (i) the first business day of the Plan Period or (ii) the Exercise Date, or shall be based solely on the closing price of the Common Stock on the Exercise Date; provided, however, that such Option Price shall be at least 85% of the applicable closing price. In the absence of a determination by the Board or the Committee, the Option Price will be 85% of the lesser of the closing price of the Common Stock on (i) the first business day of the Plan Period or (ii) the Exercise Date. The closing price shall be (a) the closing price (for the primary trading session) on any national securities exchange on which the Common Stock is listed or (b) the average of the closing bid and asked prices in the over-the-counter-market, whichever is applicable, as published in The Wall Street Journal or another source selected by the Board or the Committee. If no sales of Common Stock were made on such a day, the price of the Common Stock shall be the reported price for the next preceding day on which sales were made.

(c) Exercise of Option. Each employee who continues to be a participant in the Plan on the Exercise Date shall be deemed to have exercised his or her Option at the Option Price on such date and shall be deemed to have purchased from the Company the number of whole shares of Common Stock reserved for the purpose of the Plan that his or her accumulated

payroll deductions on such date will pay for, but not in excess of the maximum numbers determined in the manner set forth above.

(d) Return of Unused Payroll Deductions. Any balance remaining in an employee's payroll deduction account at the end of a Plan Period will be automatically refunded to the employee.

10. Issuance of Certificates. Certificates representing shares of Common Stock purchased under the Plan may be issued only in the name of the employee, in the name of the employee and another person of legal age as joint tenants with rights of survivorship, or (in the Company's sole discretion) in the name of a brokerage firm, bank, or other nominee holder designated by the employee. The Company may, in its sole discretion and in compliance with applicable laws, authorize the use of book entry registration of shares in lieu of issuing stock certificates.

11. Rights on Retirement, Death or Termination of Employment. If a participating employee's employment ends before the last business day of a Plan Period, no payroll deduction shall be taken from any pay then due and owing to the employee and the balance in the employee's account shall be paid to the employee. In the event of the employee's death before the last business day of a Plan Period, the Company shall, upon notification of such death, pay the balance of the employee's account (a) to the executor or administrator of the employee's estate or (b) if no such executor or administrator has been appointed to the knowledge of the Company, to such other person(s) as the Company may, in its discretion, designate. If, before the last business day of the Plan Period, the Designated Subsidiary by which an employee is employed ceases to be a subsidiary of the Company, or if the employee is transferred to a subsidiary of the Company that is not a Designated Subsidiary, the employee shall be deemed to have terminated employment for the purposes of this Plan.

12. Optionees Not Stockholders. Neither the granting of an Option to an employee nor the deductions from his or her pay shall make such employee a stockholder of the shares of Common Stock covered by an Option under this Plan until he or she has purchased and received such shares.

13. Options Not Transferable. Options under this Plan are not transferable by a participating employee other than by will or the laws of descent and distribution, and are exercisable during the employee's lifetime only by the employee.

14. Application of Funds. All funds received or held by the Company under this Plan may be combined with other corporate funds and may be used for any corporate purpose.

15. Adjustment for Changes in Common Stock and Certain Other Events.

(a) Changes in Capitalization. In the event of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification of shares, spin-off or other similar change in capitalization or event, or any dividend or distribution to holders of Common Stock other than an ordinary cash dividend, (i) the number and class of securities available under this Plan, (ii) the share limitations set forth in Section 9, and (iii) the Option Price shall be equitably adjusted to the extent determined by the Board or the Committee.

(b) Reorganization Events.

(1) Definition. A “Reorganization Event” shall mean: (a) any merger or consolidation of the Company with or into another entity as a result of which all of the Common Stock of the Company is converted into or exchanged for the right to receive cash, securities or other property or is cancelled, (b) any transfer or disposition of all of the Common Stock of the Company for cash, securities or other property pursuant to a share exchange or other transaction or (c) any liquidation or dissolution of the Company.

(2) Consequences of a Reorganization Event on Options. In connection with a Reorganization Event, the Board or the Committee may take any one or more of the following actions as to outstanding Options on such terms as the Board or the Committee determines: (i) provide that Options shall be assumed, or substantially equivalent Options shall be substituted, by the acquiring or succeeding corporation (or an affiliate thereof), (ii) upon written notice to employees, provide that all outstanding Options will be terminated immediately prior to the consummation of such Reorganization Event and that all such outstanding Options will become exercisable to the extent of accumulated payroll deductions as of a date specified by the Board or the Committee in such notice, which date shall not be less than ten (10) days preceding the effective date of the Reorganization Event, (iii) upon written notice to employees, provide that all outstanding Options will be cancelled as of a date prior to the effective date of the Reorganization Event and that all accumulated payroll deductions will be returned to participating employees on such date, (iv) in the event of a Reorganization Event under the terms of which holders of Common Stock will receive upon consummation thereof a cash payment for each share surrendered in the Reorganization Event (the “Acquisition Price”), change the last day of the Plan Period to be the date of the consummation of the Reorganization Event and make or provide for a cash payment to each employee equal to (A) (1) the Acquisition Price times (2) the number of shares of Common Stock that the employee’s accumulated payroll deductions as of immediately prior to the Reorganization Event could purchase at the Option Price, where the Acquisition Price is treated as the fair market value of the Common Stock on the last day of the applicable Plan Period for purposes of determining the Option Price under Section 9(b) hereof, and where the number of shares that could be purchased is subject to the limitations set forth in Section 9(a), minus (B) the result of multiplying such number of shares by such Option Price, (v) provide that, in connection with a liquidation or dissolution of the Company, Options shall convert into the right to receive liquidation proceeds (net of the Option Price thereof) and (vi) any combination of the foregoing.

For purposes of clause (i) above, an Option shall be considered assumed if, following consummation of the Reorganization Event, the Option confers the right to purchase, for each share of Common Stock subject to the Option immediately prior to the consummation of the Reorganization Event, the consideration (whether cash, securities or other property) received as a result of the Reorganization Event by holders of Common Stock for each share of Common Stock held immediately prior to the consummation of the Reorganization Event (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding shares of Common Stock); provided, however, that if the consideration received as a result of the Reorganization Event is not solely common stock of the acquiring or succeeding corporation (or an affiliate thereof), the Company may, with the consent of the acquiring or succeeding corporation, provide for the consideration to be received upon the

exercise of Options to consist solely of such number of shares of common stock of the acquiring or succeeding corporation (or an affiliate thereof) that the Board determines to be equivalent in value (as of the date of such determination or another date specified by the Board) to the per share consideration received by holders of outstanding shares of Common Stock as a result of the Reorganization Event.

16. Amendment of the Plan. The Board may at any time, and from time to time, amend or suspend this Plan or any portion thereof, except that (a) if the approval of any such amendment by the shareholders of the Company is required by Section 423 of the Code, such amendment shall not be effected without such approval, and (b) in no event may any amendment be made that would cause the Plan to fail to comply with Section 423 of the Code.

17. Insufficient Shares. If the total number of shares of Common Stock specified in elections to be purchased under any Offering plus the number of shares purchased under previous Offerings under this Plan exceeds the maximum number of shares issuable under this Plan, the Board or the Committee will allot the shares then available on a pro-rata basis.

18. Termination of the Plan. This Plan may be terminated at any time by the Board. Upon termination of this Plan all amounts in the accounts of participating employees shall be promptly refunded.

19. Governmental Regulations. The Company's obligation to sell and deliver Common Stock under this Plan is subject to listing on a national stock exchange (to the extent the Common Stock is then so listed or quoted) and the approval of all governmental authorities required in connection with the authorization, issuance or sale of such stock.

20. Governing Law. The Plan shall be governed by Delaware law except to the extent that such law is preempted by federal law.

21. Issuance of Shares. Shares may be issued upon exercise of an Option from authorized but unissued Common Stock, from shares held in the treasury of the Company, or from any other proper source.

22. Notification upon Sale of Shares. Each employee agrees, by entering the Plan, to promptly give the Company notice of any disposition of shares purchased under the Plan where such disposition occurs within two years after the date of grant of the Option pursuant to which such shares were purchased.

23. Grants to Employees in Foreign Jurisdictions. The Company may, to comply with the laws of a foreign jurisdiction, grant Options to employees of the Company or a Designated Subsidiary who are citizens or residents of such foreign jurisdiction (without regard to whether they are also citizens of the United States or resident aliens (within the meaning of Section 7701(b)(1)(A) of the Code)) with terms that are less favorable (but not more favorable) than the terms of Options granted under the Plan to employees of the Company or a Designated Subsidiary who are resident in the United States. Notwithstanding the preceding provisions of this Plan, employees of the Company or a Designated Subsidiary who are citizens or residents of a foreign jurisdiction (without regard to whether they are also citizens of the United States or resident aliens (within the meaning of Section 7701(b)(1)(A) of the Code)) may be excluded

from eligibility under the Plan if (a) the grant of an Option under the Plan to a citizen or resident of the foreign jurisdiction is prohibited under the laws of such jurisdiction or (b) compliance with the laws of the foreign jurisdiction would cause the Plan to violate the requirements of Section 423 of the Code. The Company may add one or more appendices to this Plan describing the operation of the Plan in those foreign jurisdictions in which employees are excluded from participation or granted less favorable Options.

24. Authorization of Sub-Plans. The Board may from time to time establish one or more sub-plans under the Plan with respect to one or more Designated Subsidiaries, provided that such sub-plan complies with Section 423 of the Code.

25. Withholding. If applicable tax laws impose a tax withholding obligation, each affected employee shall, no later than the date of the event creating the tax liability, make provision satisfactory to the Board for payment of any taxes required by law to be withheld in connection with any transaction related to Options granted to or shares acquired by such employee pursuant to the Plan. The Company may, to the extent permitted by law, deduct any such taxes from any payment of any kind otherwise due to an employee.

26. Effective Date and Approval of Shareholders. The Plan shall take effect as of the closing of the Company's initial public offering subject to approval by the shareholders of the Company as required by Section 423 of the Code, which approval must occur within twelve months of the adoption of the Plan by the Board.

2017 Employee Stock Purchase Plan Adopted by the
Board of Directors on
July 1, 2017

2017 Employee Stock Purchase Plan Approved by the
stockholders on
July 5, 2017

Amended and Restated Employee Stock Purchase Plan
Adopted by the Board of Directors on
December 3, 2018

AMENDMENT TO OFFER LETTER
OF []

This Amendment (the "Amendment") to the [Amended and Restated] Offer Letter between Kala Pharmaceuticals, Inc. (the "Company") and [] ("Executive") dated [DATE] (the "Offer Letter"), is adopted effective as of March [], 2019 by the Company and Executive.

RECITALS

A. The Company and Executive entered into the Offer Letter to set forth the terms of Executive's employment with the Company.

B. The Company and Executive desire and intend to (i) establish a clear approach for applying the rules promulgated under Section 4999 of the Internal Revenue Code of 1986, as amended (the "Code") to the Offer Letter; and (ii) amend the severance benefits provided through the Offer Letter.

C. Capitalized terms that are not specifically defined in this Amendment have the meanings set forth in the Offer Letter.

NOW, THEREFORE, in consideration of the agreements herein contained and other valuable consideration, the receipt and adequacy of which are hereby acknowledged, the Offer Letter is hereby amended as follows:

1. Section [] of the Offer Letter shall be replaced in its entirety with the following:

In the event that your employment is terminated by you for Good Reason or by the Company without Cause, and such termination is not within twenty-four (24) months following a Change of Control (as defined herein), you will receive severance (i) of [] months of your then-current base salary (such []-month period, the "Severance Period"), (ii) any bonus earned for the year prior to the year of termination that has not yet been paid, (iii) an amount equal to []% of your target bonus for the year of termination, (iv) a pro-rated portion of any bonus attributable to the year of termination payable at the time that active employees receive their bonus payments for that year but in any event by March 15 of the year following the year of your termination, based on the Company's performance against previously established Company (but not individual) milestones, (v) COBRA continuation medical benefits for the Severance Period subsidized by the Company at active employee rates on the same terms as were applicable to you prior to your termination, and (vi) Company-paid outplacement services for the Severance Period. All payments (other than the pro-rated portion of any bonus and the COBRA continuation and outplacement services) will be made in a lump sum on the Payment Date (as defined below).

If the Company, or its successor, terminates your employment without Cause or you voluntarily terminate your employment for Good Reason within twenty-four (24) months following a Change of Control (as defined herein), you will receive severance (i) of [] months of your then-current base salary (such []-month period, the "COC Severance Period"), (ii) any bonus earned for the year prior to the year of termination that has not yet

been paid, (iii) an amount equal to [] times the greater of (A) your target bonus for the year of termination or (B) the average of the bonuses that you received during the two years prior to the year of termination, (iv) a pro-rated portion of any bonus attributable to the year of termination payable at the time that active employees receive their bonus payments for that year but in any event by March 15 of the year following the year of your termination, based on the Company's performance against previously established Company (but not individual) milestones, (v) COBRA continuation medical benefits for the COC Severance Period subsidized by the Company at active employee rates on the same terms as were applicable to you prior to your termination, and (vi) Company-paid outplacement services for the COC Severance Period. All payments (other than the pro-rated portion of any bonus and the COBRA continuation and outplacement services) will be made in a lump sum on the Payment Date (as defined below).

The payments and benefits provided for in this Section [] shall be subject to Exhibit [A/B].

2. [For Mark Iwicki] Section 6(f) and 6(g) of the Offer Letter shall be amended to replace "12 months following such termination" with "24 months following such termination," and to apply to all equity awards granted to Executive during the Business Relationship.

3. [For Mark Iwicki] Section 6(i) of the Offer Letter shall be amended to apply to all outstanding vested options.

4. [For Todd Bazemore, Eric Trachtenberg, Mary Reumuth, and Hongming Chen] Section [] of the Offer Letter shall be amended to replace "within 12 months following a Change of Control" with "within 24 months following a Change of Control."

5. [For Mark Iwicki and Kim Brazzell] The following shall be added as Section [] of the Offer Letter:

Subject to your execution of the release of claims described in Section [] hereof, if the Company, or its successor, terminates your employment without Cause or you voluntarily terminate your employment for Good Reason within twenty-four (24) months following a Change of Control (as defined herein), then one hundred percent (100%) of the options and any other equity awards granted to you by the Company following the Change of Control, that vest based solely on your continued service with the Company and that are not then vested, and which have not been exercised, cancelled or forfeited, shall become vested and, if applicable, exercisable in full as of the date of such termination. The period for exercising any options so accelerated shall be as set forth in the applicable stock option plan, certificate or agreement. For the avoidance of doubt, nothing in this Section [] will impact the accelerated vesting upon a Change of Control [or a termination in Contemplation of a Change of Control] as is set forth in Section [].

6. The following shall be added as Section [] of the Offer Letter:

Section 280G. (a) If any payment or benefit (including payments and benefits pursuant to this Agreement) that you would receive in connection with an Acquisition, from the Company or otherwise ("Transaction Payment"), would (a) constitute a "parachute

payment” within the meaning of Section 280G of the Code, and (ii) but for this Section [], be subject to the excise tax imposed by Section 4999 of the Code (the “Excise Tax”), then the Company shall cause to be determined, before any amounts of the Transaction Payment are paid to you, which of the following two alternative forms of payment would result in your receipt, on an after-tax basis, of the greater amount of the Transaction Payment notwithstanding that all or some portion of the Transaction Payment may be subject to the Excise Tax: (1) payment in full of the entire amount of the Transaction Payment (a “Full Payment”), or (2) payment of only a part of the Transaction Payment so that you receive the largest payment possible without the imposition of the Excise Tax (a “Reduced Payment”). “Acquisition” shall mean a change in the ownership or control of the Company or a change in the ownership of a substantial portion of the assets of the Company, in each case as determined under Section 280G and the Treasury Regulations thereunder.

(b) For purposes of determining whether to make a Full Payment or a Reduced Payment, the Company shall cause to be taken into account all applicable federal, state and local income and employment taxes and the Excise Tax (all computed at the highest applicable marginal rate, net of the maximum reduction in federal income taxes which could be obtained from a deduction of such state and local taxes). If a Reduced Payment is made, (x) you shall have no rights to any additional payments and/or benefits constituting the Transaction Payment, and (y) reduction in payments and/or benefits shall occur in the manner that results in the greatest economic benefit to you as determined in this paragraph. If more than one method of reduction will result in the same economic benefit, the portions of the Payment shall be reduced pro rata.

(c) The independent registered public accounting firm or law firm engaged by the Company as of the day prior to the effective date of the Acquisition (the “Accountant”) shall make all determinations required to be made under this Section []. The Company shall bear all reasonable expenses with respect to the determinations by the Accountant required to be made hereunder. The Accountant shall provide its calculations, together with detailed supporting documentation, to the Company and you within fifteen (15) calendar days after the date on which your right to a Transaction Payment is triggered or such other time as reasonably requested by the Company or you. If the Accountant determines that no Excise Tax is payable with respect to the Transaction Payment, either before or after the application of the Reduced Amount, it shall furnish the Company and you with detailed supporting calculations of its determinations that no Excise Tax will be imposed with respect to such Transaction Payment. Any good faith determinations of the Accountant made hereunder shall be final, binding and conclusive upon the Company and you.

(d) The Company hereby agrees that, for purposes of determining whether any parachute payment would be subject to the Excise Tax, the covenant not to compete that applies to you following your termination of employment with the Company (the “Non-Compete Provision”) shall be treated as an agreement for the performance of personal services. The Company hereby agrees to indemnify, defend, and hold you harmless from and against any adverse impact, tax, penalty, or excise tax resulting from the Company or the Accountant’s attribution of a value to the Non-Compete Provision that is less than the product of (i) the greater of (A) the total compensation amount that would be disclosed

under Item 402(c) of Securities and Exchange Commission Regulation S-K if you had been a “named executive officer” of the Company in the year prior to the year of the event that triggers the Excise Tax or (B) an independent valuation of the Non-Compete Provision, multiplied by (ii) the duration of the Non-Compete Provision in years (this product, the “Post Change in Control Reasonable Compensation”), to the extent that use of such lesser amount results in a larger excise tax under Section 4999 of the Code than you would have been subject to had the Company or Accountant attributed a value to the Non-Compete Provision that is at least equal to the Post Change in Control Reasonable Compensation.

7. Reaffirmation of Offer Letter. The parties hereby acknowledge and agree that the Offer Letter, as modified by this Amendment, is hereby reaffirmed, ratified, and confirmed in their entirety. Except as set forth herein, the Offer Letter remains unmodified and in full force and effect. In the event of any inconsistency between the provisions of the Offer Letter and this Amendment, the terms of this Amendment shall control.

8. Governing Law. The rights and obligations of the parties shall be governed by, and this Amendment shall be construed and enforced in accordance with, the laws in the Commonwealth of Massachusetts.

9. Further Assurances. The parties shall execute and deliver such further documents and instruments, and take such further actions as may be required or appropriate to carry out the intent and purposes of this Amendment.

[SIGNATURES FOLLOW]

IN WITNESS WHEREOF, the undersigned, thereunto duly authorized, has executed this Amendment effective as of the day and year hereinabove first set forth in order to evidence its adoption by the Company.

COMPANY:

KALA PHARMACEUTICALS, INC.

By: _____

Name: _____

Its: _____

EXECUTIVE:

[]

Subsidiaries of the Registrant

Name	Jurisdiction of Organization
Kala Pharmaceuticals Security Corporation	Massachusetts

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement No. 333-226748 on Form S-3 and Nos. 333-219403 and 333-224083 on Form S-8 of our report dated March 12, 2019, relating to the consolidated financial statements of Kala Pharmaceuticals, Inc. and its subsidiaries (which report expresses an unqualified opinion and includes an explanatory paragraph related to the Company's change in method of accounting for leases in fiscal year 2018) appearing in this Annual Report on Form 10-K of Kala Pharmaceuticals, Inc. for the year ended December 31, 2018.

/s/ Deloitte & Touche LLP

Boston, Massachusetts
March 12, 2019

CERTIFICATIONS

I, Mark Iwicki, certify that:

1. I have reviewed this Annual Report on Form 10-K of Kala 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 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 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.

Date: March 12, 2019

/s/ Mark Iwicki
Mark Iwicki
President and Chief Executive Officer
(principal executive officer)

CERTIFICATIONS

I, Mary Reumuth, certify that:

1. I have reviewed this Annual Report on Form 10-K of Kala 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 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 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.

Date: March 12, 2019

/s/ Mary Reumuth
Mary Reumuth
Chief Financial Officer
(principal financial and accounting officer)

**CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report on Form 10-K of Kala Pharmaceuticals, Inc. (the "Company") for the year ended December 31, 2018, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, Mark Iwicki, President and Chief Executive Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to the best of his knowledge on the date hereof:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 12, 2019

/s/ Mark Iwicki
Mark Iwicki
President and Chief Executive Officer
(principal executive officer)

**CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report on Form 10-K of Kala Pharmaceuticals, Inc. (the "Company") for the year ended December 31, 2018, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, Mary Reumuth, Chief Financial Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to the best of her knowledge on the date hereof:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 12, 2019

/s/ Mary Reumuth
Mary Reumuth
Chief Financial Officer
(principal financial and accounting officer)
