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

FORM 10-K

(Mark One)

☒ **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: 001-37609

MYOKARDIA, INC.

(Exact name of registrant as specified in its charter)

Delaware	**2834**	**44-5500552**
(State or other jurisdiction of incorporation or organization)	**(Primary Standard Industrial Classification Code Number)**	**(I.R.S. Employer Identification No.)**

333 Allerton Avenue

South San Francisco, CA 94080

(Address of Principal Executive Offices) (Zip Code)

(650) 741-0900

(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, par value $0.0001 per share	**The 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 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 Act). Yes ☐ No ☒

The aggregate market value of the common stock held by non−affiliates of the registrant was approximately $1,944,784,343 as of June 30, 2018 based upon the closing sale price on the NASDAQ Global Select Market reported for such date. Shares of common stock held by each executive officer and director and certain holders of more than 10% of the outstanding shares of the registrant's common stock have been excluded in that such persons may be deemed to be affiliates of the registrant. Shares of common stock held by other persons, including certain other holders of more than 10% of the outstanding shares of common stock, have not been excluded in that such persons are not deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

The number of outstanding shares of the registrant's common stock on February 25, 2019 was 40,319,855 shares.

DOCUMENTS INCORPORATED BY REFERENCE

Part III of this Annual Report on Form 10-K incorporates information by reference to portions of the definitive proxy statement for the Company's Annual Meeting of Stockholders to be held in 2018, to be filed within 120 days of the registrant's fiscal year ended December 31, 2018.

TABLE OF CONTENTS

MyoKardia, Inc.
Annual Report on Form 10-K for the Fiscal Year Ended December 31, 2018

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends affecting the financial condition of our business. Forward-looking statements should not be read as a guarantee of future performance or results and will not necessarily be accurate indications of the times at, or by, which such performance or results will be achieved. Forward-looking statements are based on information available at the time those statements are made and/or management's good faith belief as of that time with respect to future events and are subject to risks and uncertainties that could cause actual performance or results to differ materially from those expressed in or suggested by the forward-looking statements.

Forward-looking statements include all statements that are not historical facts. In some cases, you can identify forward-looking statements by terms such as "may," "might," "will," "objective," "intend," "should," "could," "can," "would," "expect," "believe," "anticipate," "project," "target," "design," "estimate," "predict," "potential," "plan" or the negative of these terms, and similar expressions intended to identify forward-looking statements, and similar expressions and comparable terminology intended to identify forward-looking statements. These statements reflect our current views with respect to future events and are based on assumptions and subject to risks and uncertainties, including those set forth below in Item 1A, "Risk Factors" and elsewhere in this Annual Report on Form 10-K. Forward-looking statements include, but are not limited to, statements about:

- the timing and success of, and our ability to generate positive data from, our pivotal Phase 3 clinical trial, EXPLORER–HCM, of mavacamten (formerly known as MYK-461) in symptomatic, obstructive HCM (oHCM) patients, our Phase 2 clinical trial, MAVERICK–HCM, of mavacamten in symptomatic non-obstructive HCM (nHCM) patients, our Phase 2 clinical trial, PIONEER–HCM ,of mavacamten in symptomatic, obstructive HCM patients, our long-term extension trial of patients from our Phase 2 trial, PIONEER, known as PIONEER-OLE, our long-term extension study of patients completing MAVERICK or EXPLORER known as MAVA-LTE, and our Phase 2a clinical trial of MYK-491 in dilated cardiomyopathy (DCM) patients;
- our ability to place one new therapeutic candidate into clinical development every 12–24 months;
- our ability to enroll patients in our clinical trials at the pace that we project;
- our ability to execute our clinical development plans and obtain regulatory approval for any of our product candidates without the need for large, outcome-based studies;
- our ability to identify and advance through clinical development any additional product candidates from our precision medicine platform, including from our HCM-2, ACT-1 and LUS-1 programs;
- our ability to obtain and maintain intellectual property protection for our precision medicine platform and our product candidates;
- our ability to successfully build a specialty sales force and commercial infrastructure to market mavacamten and any other product candidates from our programs, if approved, and any product candidates from our other programs;
- our ability to compete with companies currently producing or engaged in the clinical development of treatments for the disease indications that we pursue;
- our reliance on third parties to conduct our clinical trials and to manufacture drug substance for use in our clinical trials;
- our ability to retain and recruit key personnel;
- our expectations regarding government and third-party payor coverage and reimbursement;
- our estimates of our expenses, ongoing losses, capital requirements, future revenue and our needs for or ability to obtain additional financing;
- our financial performance; and
- developments and projections relating to our competitors or our industry.

Given these uncertainties, you should not place undue reliance on these forward-looking statements. These forward-looking statements represent our estimates and assumptions only as of the date of this Annual Report on Form 10-K and, except as required by law, we undertake no obligation to update or revise publicly any forward-looking statements, whether as a result of new information, future events or otherwise after the date of this Annual Report on Form 10 -K. We qualify all of our forward-looking statements by these cautionary statements.

All brand names or trademarks appearing in this report are the property of their respective holders. Unless the context requires otherwise, references in this report to "MyoKardia" the "Company," "we," "us," and "our" refer to MyoKardia, Inc. and its wholly-owned subsidiary.

PART I

ITEM 1. BUSINESS

Overview

MyoKardia, Inc., is a clinical stage biopharmaceutical company pioneering a precision medicine approach to discover, develop and commercialize targeted therapies for the treatment of serious and neglected rare cardiovascular diseases. Since our inception in 2012, we have generated a robust pipeline of small molecules that target diseases driven by cardiac muscle contraction. Excessive contraction, impaired relaxation and/or insufficient contraction can all result in conditions in which the output of blood from the heart cannot meet the body's demands. Our lead product candidate, mavacamten, is initially being developed for the treatment of hypertrophic cardiomyopathy, or HCM. In HCM, the walls of the heart thicken due to excessive contraction and prevent the left ventricle from expanding, resulting in a reduced pumping capacity. Mavacamten is being studied in four clinical trials in patients with HCM, including a 220-patient pivotal Phase 3 clinical trial known as EXPLORER-HCM. We are evaluating a second clinical-stage candidate, MYK-491, in patients with systolic heart failure, in which the left ventricle is too distended and weak to adequately pump blood. MYK-491 is currently in a Phase 2a clinical proof-of-concept study.

Our goal is to be the world's leading precision cardiovascular medicine company. Precision medicine involves discovering and developing therapies that integrate clinical and molecular information based on the biological basis of disease. Our strategy is to identify homogenous subgroups of patients with a given cardiovascular disease, understand the causal factors underlying that subgroup's condition, and develop targeted therapies designed to correct the common underlying defect leading to abnormal cardiac contraction or relaxation within each subgroup. We utilize the tools and technologies of precision medicine, such as genotypic or phenotypic profiling, to identify patient subgroups and biomarkers to directly measure the effects of our product candidates early in clinical development, establishing proof-of-mechanism and providing important early predictive value to inform the design of subsequent trials.

Our initial research has focused on genetic mutations in sarcomeric proteins of the heart muscle. These mutations directly affect the power of contraction, the rate of relaxation, or both, reducing the overall ability of the heart to pump blood at an output that matches the needs of the rest of the body. We have leveraged our knowledge of heart muscle biology to discover and optimize a portfolio of proprietary small molecule therapeutics that target the biomechanical defects that cause disruptions in heart muscle contraction. By correcting the underlying biomechanical defects, we believe our therapeutic candidates can correct or offset the downstream disruption in cardiac muscle function that drives disease progression.

Since our inception, we have generated multiple programs to address a variety of disruptions in heart muscle contraction. We are advancing the following research and development programs:

- Mavacamten is being developed as an orally-administered small molecule designed to address the excessive contractility, left ventricular hypertrophy and reduced compliance characteristic of HCM.
- MYK-491 is being developed as an orally-administered small molecule designed to increase contractility without impairing diastolic filling in patients with systolic heart failure.
- MYK-224 is our second small molecule program targeting hypercontractility and impaired relaxation.
- ACT-1 is our small molecule program directed toward increasing cardiac contractility in genetic dilated cardiomyopathy, or DCM.
- LUS-1 is our program to counteract a muscle abnormality that results in impaired relaxation of the left ventricle.

Mavacamten is initially being developed for the treatment of symptomatic obstructive HCM, or oHCM. In a Phase 2 clinical trial, known as PIONEER-HCM, mavacamten achieved statistically significant changes in the primary endpoint of post-exercise left ventricular outflow tract, or LVOT, gradient from baseline and demonstrated improvements across key secondary endpoints including New York Heart Association, or NYHA, functional classification, exercise capacity as measured by peak oxygen consumption, or peak VO2, and change in dyspnea scores. In 2018, we initiated four additional studies of mavacamten: a pivotal Phase 3 clinical study of oHCM patients known as EXPLORER-HCM; a Phase 2 clinical study, known as MAVERICK-HCM, in a second potential indication, symptomatic, non-obstructive, or nHCM; a long-term extension trial of oHCM patients from our Phase 2 PIONEER-HCM study; and a long-term extension study of patients completing our Phase 2 MAVERICK-HCM or Phase 3 EXPLORER-HCM trials, known as MAVA-LTE. We anticipate reporting data from our Phase 3 EXPLORER-HCM trial in the second half of 2020. Pending the outcome of that study, we plan to file a New Drug Application seeking regulatory approval of mavacamten for the treatment of symptomatic oHCM. In 2016, mavacamten was granted Orphan Drug Designation by the U.S. Food and Drug Administration, or the FDA, for the treatment of symptomatic oHCM. Data from the Phase 2 MAVERICK-HCM trial in nHCM is anticipated in the second half of 2019. We plan to report long-term safety and efficacy results from the PIONEER-OLE trial periodically.

Our second clinical-stage candidate, MYK-491, has completed two single-ascending dose Phase 1 studies, in healthy volunteers and in DCM patients with stable heart failure. MYK-491 was shown to increase cardiac contractility by 5-20 percent across multiple echocardiographic parameters at higher dose concentrations, with minimal impact on diastolic function. We are currently studying MYK-491 in a Phase 2a study looking at several echocardiographic measures of contractility and diastolic function. Data from the Phase 2a multiple-ascending dose trial are anticipated in the fourth quarter of 2019. Following achievement of proof-of-concept from the ongoing Phase 2a study, we plan to advance MYK-491 into late-stage clinical trials in a well-defined systolic heart failure patient population. Systolic heart failure is estimated to affect two to three million people in the United States.

In addition to mavacamten and MYK-491, we are advancing several preclinical programs aimed at precision treatment of systolic and diastolic diseases. We anticipate advancing at least one new therapeutic candidate into clinical development approximately every 12-24 months.

Our precision medicine platform incorporates disease research, drug discovery and clinical expertise in a self-reinforcing cycle of learning. For example, our data from animal models that closely mimic human disease may inform clinical development objectives, and data generated from our experience in the clinical studies may inform discovery, optimization and development choices for therapeutics in our emerging pipeline. Our integrated research and development efforts enables the iterative generation of new disease targets and clinical development candidates designed to establish early clinical proof-of-concept. We believe that the virtuous cycle that results from these strategic choices represents a durable competitive advantage that enables us to efficiently develop therapies with disease-modifying potential for heritable cardiomyopathies that could also be applied to other cardiovascular diseases.

Another competitive advantage is our commitment to disease area leadership. We have formed long-standing relationships with HCM patient advocacy groups and academic and clinical researchers to create an extended community dedicated to advancing our understanding of HCM. In 2014, we launched the Sarcomeric Human Cardiomyopathy Registry (SHaRe). SHaRe is a multi-center, international repository of clinical and laboratory data on more than 9,000 individuals and family members affected by HCM and DCM, funded by research grants from MyoKardia. Data generated from SHaRe is a component of our precision medicine platform. Our commitment to disease area leadership continues with numerous additional initiatives, including our support of the HCM Care App, a patient education resource developed in collaboration with Duke Clinical Research Institute, the launch in 2018 of the MyoSeeds™ Research Grant Program, and a research collaboration with 23andMe, Inc., a consumer genetics and research company.

We retain global development and commercialization rights to all our programs. We believe consolidated control over our entire portfolio will allow us to make strategic decisions about how we advance each of our therapeutic candidates in alignment with our precision medicine approach.

Persistent Obstacles to Innovative Cardiovascular Development

Cardiovascular disease remains the leading cause of death and disability both in the United States and globally, affecting 85.6 million Americans and accounting for one in every six healthcare dollars spent. Although cardiovascular disease accounts for more deaths in the United States each year than all types of cancers combined, as of 2017, the number of oncology-focused therapeutics in development was nearly seven times greater than that of cardiovascular therapies. Despite the increasing global burden of cardiovascular disease, investment in cardiovascular drug development has stagnated over the past two decades, resulting in a shortage of innovative therapies addressing the underlying causes of disease.

We believe that traditional approaches to cardiovascular drug development have not adequately addressed the significant patient need due to the following limitations:

- ***Existing therapies are designed to treat the symptoms and not the underlying cause of the disease***. Despite important advances in understanding the clinical progression of cardiovascular diseases, a specific understanding of the fundamental molecular and genetic drivers of disease has been lacking. As a result, researchers have been limited in their ability to discover or develop therapies that target causal disease mechanisms and to properly select patients. This lack of understanding limits the predictive value of early clinical results.
- ***Large, outcome-based studies are needed to demonstrate statistical significance, requiring lengthy and expensive trials***. Due to the size and heterogeneity of the cardiovascular patient population, large numbers of patients typically must be studied for extended periods to accumulate enough data regarding clinical events such as cardiovascular death, heart attack, stroke or hospitalization for heart failure. We believe the non-targeted nature of these lengthy studies has discouraged investment and innovation in novel cardiovascular drug development due to the costs and risk of late-stage failures.

- ***The drug development model neglects rare disease populations***. Due to the high costs and risks of executing large trials in cardiovascular disease, approved therapies typically must target large patient segments, without differentiating among unique patient subgroups, in order to be commercially viable. For example, physicians have historically approached the treatment of patients with heritable cardiomyopathies in the same manner as the broader, undifferentiated heart failure population, resulting in therapies not informed by their gene mutations, and therefore not specifically designed for the pathophysiology of their heart disease.

These challenges have resulted in a relatively low number of new molecular entities approved by the FDA compared to other disease areas. As a result, there is a significant opportunity to improve clinical benefits through the use of precision medicine for the discovery and development of new treatments.

Our Solution: MyoKardia's Approach to Precision Cardiovascular Therapies

We are pioneering the application of precision medicine to cardiovascular disease with a pipeline of small molecule candidates targeting diseases of cardiac muscle contraction and relaxation being developed in well-defined patient populations. Our precision medicine platform enables the efficient discovery and development of novel precision drug candidates with disease-modifying potential. By leveraging our platform, we believe we can overcome many of the challenges associated with traditional cardiovascular drug development.

Our Precision Medicine Platform

Our precision medicine platform incorporates disease research, drug discovery and clinical expertise in a self-reinforcing cycle that enables the iterative generation of new disease targets and clinical development candidates designed to establish early clinical proof-of-concept. By efficiently developing product candidates that target distinct biomechanical defects associated with cardiac muscle contraction, we use clinical feedback on patient genetics, response to therapy and disease presentation to refine our understanding of which patients are most likely to benefit from our product candidates. We believe this virtuous cycle is a competitive advantage that enables us to efficiently develop therapies with disease-modifying potential for heritable cardiomyopathies that could also be applied to other cardiovascular diseases.

Our discovery process begins with a deep mechanistic understanding of how disease-causing mutations affect the biomechanical function of the heart. This starting point is then translated into screens that help us identify small molecule agents that have the potential to be optimized to correct the underlying defect. The most promising of these agents are then tested in preclinical animal models that we believe are transferable to and predictive of human systems. These models are also used to develop biomarkers of drug action and, when possible, disease modification, that integrate into our early clinical development strategies. Across this entire spectrum, we leverage novel insights generated from our position at the center of the cardiomyopathy ecosystem. By applying this cycle to multiple programs, we have generated a growing library of proprietary therapeutic molecules that target a wide range of potential cardiac disease-related mechanisms and that can be used to test new hypotheses arising from our clinical research.

Advantages of Our Approach

We believe that our approach can overcome many of the obstacles facing cardiovascular drug discovery and development that have resulted in a lack of cardiovascular therapeutic innovation:

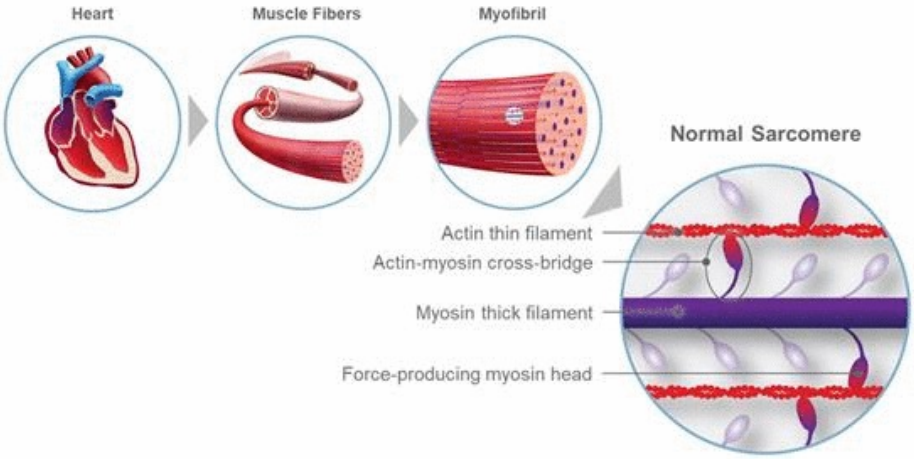
- ***Our precision medicine platform enables the discovery and development of therapies with disease-modifying potential.*** We believe our deep understanding of heart failure, including heritable cardiomyopathies, and the biomechanical defects that cause these conditions, allows us to target critical or causal disease mechanisms. We intend to develop each of our product candidates to prevent or reverse disease progression by correcting underlying biomechanical defects in the heart's contractile machinery.
- ***Our clinical development approach is designed to investigate efficacy and safety in smaller, less time-consuming clinical trials.*** Our approach has the potential to significantly reduce the time and cost of drug development for cardiovascular indications. Our product candidates are designed to target the underlying cause of disease, which we believe increases the chance they will be effective and reduces the potential for unintended consequences or off-target effects. Through the use of appropriate predictive biomarkers and patient selection strategies we believe that we can reduce the risk of late-stage clinical failures. This approach is consistent with recent FDA communications and publications on how the pharmaceutical and biotechnology industry can improve efficiency and the likelihood of success in cardiovascular drug development.

- ***Our approach facilitates the efficient discovery of novel therapies for neglected, rare heart diseases.*** We are focused on the treatment of small patient populations where the mechanism of disease and the shared characteristics of the patients with a given condition are known. By integrating all of the elements of our platform, we believe that we can efficiently develop disease-modifying therapies aimed at the biomechanical underpinnings of disease.

Targeting Cardiac Muscle Contraction

A sarcomere is an assembly of proteins that forms the smallest contractile unit of muscle. Each cardiac muscle cell contains many sarcomeres, and these cells are arranged in an organized manner as cardiac muscle fiber. Thousands of sarcomeres acting in concert provide the ensemble force for muscle contraction. Sarcomeres are composed of a thin filament and a thick filament, each of which contains multiple proteins braided together. To initiate contraction, myosin, the motor protein anchored to the thick filament, binds to actin, the main protein of the thin filament, forming a cross-bridge. The contraction of the sarcomere is driven by the swinging of the cross-bridge causing the thin filament to slide over the thick filament, shortening the length of a sarcomere. Myosin attaches to the thin filament, pulls it forward and detaches in a tightly-regulated cycle. In the heart, contraction corresponds to systole and relaxation corresponds to diastole.

In the graphic below, the dark myosin heads are engaged with the thin filament, each forming a cross-bridge between actin and myosin.



Mutations in cardiac sarcomere proteins that disrupt normal cardiac muscle contraction underpin a number of types of cardiovascular disease by affecting the power of contraction, the rate of relaxation, or both, and thereby reducing the overall ability of the heart to pump blood at an output that matches the needs of the body at rest and with exertion. The disruptions in cardiac muscle contraction result in abnormal intracardiac blood pressures and chamber volumes and thickening or thinning of the walls of the heart. These pathological changes often result in a cascade of events with devastating consequences to patients, including reduced exercise capacity limited by shortness of breath or chest pain, reduced blood flow to the heart muscle, dangerous abnormal heart rhythms, stroke, progressive heart failure and sudden cardiac death. In some patients, these events result in the need for heart transplantation.

There are hundreds of individual mutations that have been identified in the genes encoding the proteins of the sarcomere. These many mutations give rise to a few common biomechanical defects in the sarcomere at the protein level. Through our research, we have linked these biomechanical defects to three distinct cardiac muscle disruptions that act to cause the excessive contraction, impaired relaxation and/or insufficient contraction underlying many forms of heart failure.

Heart Failure and Heritable Cardiomyopathies

Heart failure describes any condition in which the heart is unable to fill or pump blood sufficient to meet the needs of the body. According to the American Heart Association, heart failure affects approximately 6.5 million people in the United States. The causes of heart failure are varied and diverse and can include damage to the heart muscle from myocardial infarctions, toxic effects of cancer chemotherapy agents and genetic mutations. Regardless of cause, the symptoms of heart failure are often similar, including shortness of breath, edema, reduction in activities and fatigue. Heart failure is progressive; once there has been an occurrence of acute

decompensation, or a sudden worsening of symptoms, patients are at higher risk of further decompensation and hospitalizations, leading to death.

Systolic heart failure, or heart failure with reduced ejection fraction (HFrEF), occurs when the left ventricle is unable to adequately contract and pump blood. The left ventricle becomes distended, and the muscle further weakens. It is unable to contract with sufficient force to pump the amount of oxygenated and nutrient-filled blood the body needs. The terms systolic heart failure and dilated cardiomyopathy are sometimes used interchangeably to describe this condition. Systolic heart failure makes up a little less than half the overall heart failure population, or approximately 3 million people in the United States.

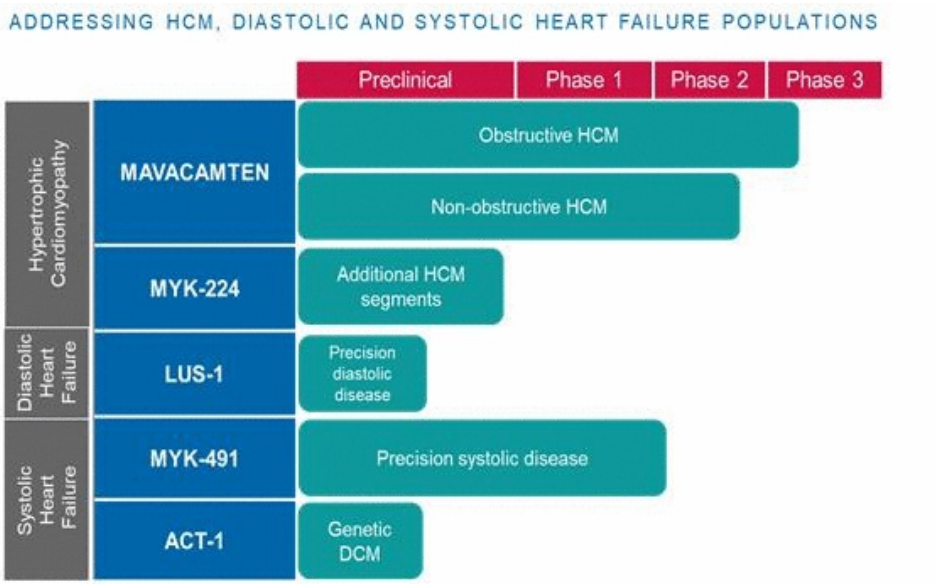
Diastolic heart failure, also called heart failure with preserved ejection, or HFpEF, occurs when the heart is unable to properly fill with blood during the period between each contraction. The left ventricle is less distensible than normal, requiring a high pressure to fill, particularly during stress. As in systolic heart failure, symptoms such as shortness of breath, edema, and fatigue develop related to the heart's inability to pump an adequate amount of oxygenated blood. Hypertrophic cardiomyopathy is one example of a disease in which the excess contractility of the heart has resulted in hypertrophy and stiffness that prevents the normal filling and pumping of blood. Diseases of diastolic dysfunction are estimated to affect approximately 3 million people in the United States, and there are currently no approved treatments proven to improve outcomes in patients with diastolic heart failure.

We believe that heart failure, whether occurring due to systolic or diastolic dysfunction, is made up of a number of distinct patient segments, each of which may be driven by shared genetic or phenotypic characteristics. Starting with heritable cardiomyopathies, such as HCM and DCM, we are discovering and developing novel targeted therapeutics tailored to address the biomechanical dysfunction in cardiac muscle contraction underlying a given condition. While some of our candidates may have broad applicability to diseases of systolic or diastolic function, our strategy is to apply a precision medicine approach to our drug development efforts.

Our Pipeline

We have generated several proprietary, orally administered small molecules to address a variety of biomechanical defects that cause disruptions in heart muscle contraction. By correcting the underlying biomechanical defects, we believe our targeted therapies can correct or offset the downstream disruption in cardiac muscle function that drives disease progression. Our lead drug candidate, mavacamten, has been shown to reduce the number of myosin-actin cross-bridges, restoring normal cardiac muscle contraction and improving left ventricular compliance. MYK-491 is intended to restore normal cardiac muscle contractility in patients with DCM caused by mutations that result in inadequate cardiac muscle contraction because of too few cross-bridges. MYK-224 is our second HCM-targeting candidate designed to reduce excess cardiac contractility and improve diastolic function. ACT-1 is intended to increase cardiac muscle contractility in patients with genetic DCM through a different mechanism than that of MYK-491. LUS-1 is intended to counteract a muscle disruption that results in impaired relaxation of the heart, a biomechanical defect thought to be a causal factor in numerous types of diastolic heart failure, as well as specific HCM patient subgroups and less common heritable cardiomyopathies.

The following table summarizes our product development pipeline:

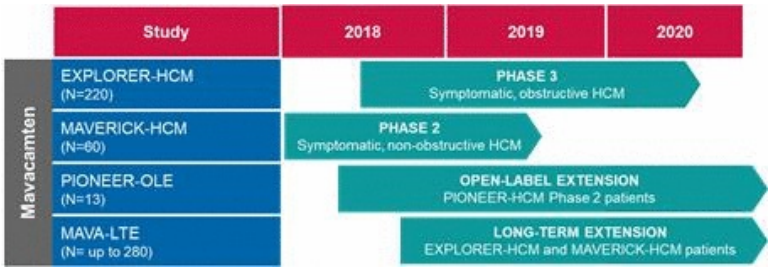


Mavacamten for Hypertrophic Cardiomyopathy

Mavacamten is in clinical development as an orally administered small molecule intended to reduce left ventricular contractility to alleviate the functional consequences and symptoms of HCM and prevent or reverse HCM progression.

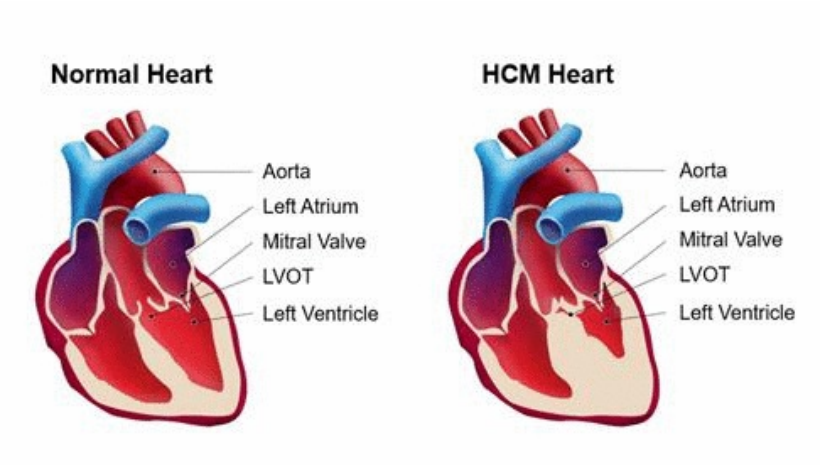
In June 2018, we initiated the pivotal Phase 3 EXPLORER-HCM clinical trial of mavacamten. EXPLORER-HCM is a multi-national randomized double-blind study that will enroll approximately 220 patients with symptomatic, obstructive HCM. We expect to report data from the EXPLORER-HCM trial in the second half of 2020. Mavacamten is also being developed for a second indication, non-obstructive HCM, or nHCM. We are currently conducting a multi-center, randomized, double-blind dose-ranging study, known as MAVERICK-HCM, in approximately 60 nHCM patients. We anticipate data from the MAVERICK-HCM clinical trial will be reported in the second half of 2019. Two additional long-term safety studies of mavacamten are ongoing. Taken together, we believe that data from the four clinical studies of mavacamten will support a planned NDA filing with FDA after results from the EXPLORER trial are available.

The following table summarizes our mavacamten clinical development program:



Overview of Hypertrophic Cardiomyopathy

HCM is defined as an otherwise unexplained thickening of the walls of the heart, known as hypertrophy. HCM is caused by mutations in the sarcomere that result in excessive cardiac muscle contraction. The consequences include reduced left ventricular blood volumes and cardiac output, reduced ability of the left ventricle to expand, and high cardiac filling pressures. These can all contribute to reduced effort tolerance and symptoms that include shortness of breath and chest pain. Additionally, other structural changes such as left atrial enlargement occur, leading to the development of arrhythmias and heart failure.



HCM is a chronic disease, and for the majority of patients the disease progresses slowly with the development of severe symptoms despite existing medical therapies. Mild physical exertion can quickly result in fatigue or shortness of breath, and a patient's ability to participate in normal work, family or recreational activities can be substantially curtailed. According to research published in *Circulation* by SHaRe researchers who evaluated data from nearly 4,600 patients, people with HCM have significantly higher mortality compared to that of the general U.S. population. Further, patients with genetic HCM exhibited disease at younger ages and were more likely to experience HCM-related complications and early death. In approximately 15% to 20% of patients, disease progression results in disabling heart failure that can prevent the patients from holding a job or performing everyday activities of daily living. HCM can also cause stroke or sudden cardiac death. HCM is the most common cause of sudden cardiac death in young people, with a five-year incidence among children of 3%.

HCM affects approximately one in every 500 people worldwide and is the most frequent form of heritable cardiomyopathy. It is estimated that as many as 630,000 people in the United States have a form of HCM, and based on insurance claims data, an estimated 100,000 of these individuals have been diagnosed with the disease.

Obstructive HCM Patients. In approximately two-thirds of HCM patients, the path followed by blood exiting the heart, known as the left ventricular outflow tract, or LVOT, becomes obstructed by the enlarged and diseased muscle, restricting the flow of blood from the heart to the rest of the body. These patients, referred to as oHCM patients, are at an increased risk of severe heart failure and death. Our current clinical development plan, including EXPLORER-HCM, is intended to target this group of symptomatic oHCM patients or subgroups thereof as our initial patient population for mavacamten. In 2016, the FDA granted mavacamten Orphan Drug Designation for the treatment of patients with symptomatic oHCM.

Non-Obstructive HCM Patients. Symptomatic, non-obstructive, HCM patients represent a distinct subgroup that is difficult to manage medically. This segment may contain a more severely affected population because nHCM patients are typically diagnosed when their disease is more advanced than obstructive HCM patients. Furthermore, for oHCM patients, relief of the obstruction is often associated with an improvement in symptoms, while no such treatment option is available to nHCM patients. We are conducting the Phase 2 MAVERICK-HCM clinical trials to assess mavacamten's ability to target symptomatic nHCM.

Current Standard of Care for Patients with Hypertrophic Cardiomyopathy

The current standard of care for HCM is limited, and many patients remain symptomatic. The beta-blocker propranolol is recommended for the treatment of symptomatic HCM. However, beta blockers are frequently ineffective and have off-target adverse effects that limit their use. Patients are therefore prescribed additional drugs indicated for the treatment of hypertension, heart failure or other cardiovascular disorders more generally. These drugs, including non-dihydropyridine calcium channel blockers (such as verapamil and diltiazem) and the antiarrhythmic disopyramide, do not address the underlying cause of HCM, do not appear to affect

disease progression, and have limited tolerability. While clinical experience and expert opinion suggest that these drugs may provide symptom relief in some patients, no controlled clinical research evidence exists to directly support their efficacy. For a subset of HCM patients with more advanced disease progression or more pronounced symptoms, surgical or other invasive interventions may be appropriate, including heart transplantation, use of an implantable cardioverter-defibrillator, open surgical myectomy or percutaneous alcohol septal ablation.

Mavacamten's Clinical Development

In 2018, we initiated four clinical trials of mavacamten for the treatment of HCM, including the Phase 3 pivotal EXPLORER-HCM clinical trial and a long-term extension study, which we believe will form the backbone of our planned registration filing with the FDA for the potential regulatory approval of mavacamten.

Our Phase 1 program for mavacamten consisted of three clinical trials, including two single-ascending dose (SAD) trials and one multiple ascending dose (MAD) trial. Across these three trials, we dosed 86 healthy volunteers and 15 HCM patients with mavacamten, in addition to 22 subjects that received placebo. We observed favorable tolerability of single and multiple doses of mavacamten in both healthy volunteers and HCM patients and demonstrated the ability of mavacamten to reduce cardiac muscle contractility, an important biomarker of disease. Additionally, we generated preliminary evidence in two patients with obstructive HCM that led us to believe that mavacamten could reduce LVOT obstruction.

Our Phase 2 clinical trial of mavacamten, known as PIONEER-HCM, was a twelve-week open-label study to assess the efficacy, safety, pharmacokinetics, pharmacodynamics, and tolerability of mavacamten in patients with symptomatic oHCM. PIONEER-HCM consisted of two dosing cohorts: in Cohort A, patients received a once-daily 10mg, 15mg or 20mg dose of mavacamten and were required to discontinue background therapy, including beta blockers, prior to study entry; and Cohort B, in which subjects received a once-daily 2mg or 5mg oral dose of mavacamten and nine out ten patients remained on beta blocker therapy. Baseline patient characteristics were similar across both patient cohorts.

In the third quarter of 2017, we reported positive results from ten patients in Cohort A of PIONEER-HCM. A statistically significant improvement was observed in the primary endpoint, change in post-exercise peak LVOT gradient from baseline to Week 12 ($p=0.002$). After 12 weeks of treatment, all 10 patients (100%) in Cohort A achieved a reduction in post-exercise peak LVOT gradient from a baseline mean of 125 mmHg. Additionally, this cohort met key secondary endpoints with statistical significance, including change in peak oxygen consumption (peak VO_2) and New York Heart Association, or NYHA, functional classification of symptoms.

In the first quarter of 2018, we reported results for the second cohort, Cohort B, of the PIONEER-HCM trial in which all ten patients enrolled achieved statistically significant reductions in post-exercise and resting LVOT gradient ($p=0.020$). Mavacamten also demonstrated improvements in secondary endpoints intended to measure symptoms and functional capacity. The use of background beta blockers, permitted only in Cohort B, did not appear to impact mavacamten's safety or pharmacodynamic profile.

In both cohorts, mavacamten was generally well-tolerated. One patient in the Cohort A elected to stop the study drug at Week 4 after experiencing a serious adverse event. All other adverse events, or AEs, were mild to moderate, and a majority of the AEs were deemed to be unrelated to the study drug.

The PIONEER-HCM study has informed a target concentration range at which mavacamten is expected to achieve clinically meaningful improvements in oHCM symptoms, functional classification (e.g., NYHA), and exercise capacity (e.g., peak VO_2) while maintaining LVEF in a normal range of greater than or equal to 50 percent. Data from the Phase 2 PIONEER-HCM study helped inform the starting dose, guide dose adjustment and define endpoints for our Phase 3 clinical trial of mavacamten in symptomatic oHCM, known as EXPLORER-HCM. We reviewed PIONEER-HCM data and the EXPLORER-HCM study design with the Division of Cardiovascular and Renal Products of the FDA, incorporating their input. We plan to conduct a single pivotal study along with a long-term extension study to support registration.

EXPLORER-HCM is a multi-national randomized double-blind study designed to evaluate the efficacy and safety of 30 weeks of once-daily treatment with mavacamten in patients with oHCM. Patients are randomized on a 1:1 basis to receive either mavacamten or placebo for a 30-week treatment period. The primary endpoint is clinical response, defined as either 1) an improvement of at least 1.5 mL/kg/min in peak oxygen consumption accompanied by an improvement from baseline of at least one NYHA functional class or 2) an improvement from baseline of 3.0 mL/kg/min or greater in peak VO_2 without worsening in NYHA functional class. Secondary endpoints in the Phase 3 EXPLORER-HCM trial will include the average changes from baseline in post-exercise peak LVOT gradient, NYHA functional class, and peak VO_2. Exploratory endpoints include changes in echocardiographic indices of cardiac structure and function, N-terminal pro b-type natriuretic peptide or NT-proBNP, concentrations, quality of life questionnaire scores

and daily physical activity assessed using a wearable accelerometer. Following the 30-week treatment period and eight-week post-treatment wash-out period, patients will be encouraged to participate in a long-term extension study of mavacamten.

The EXPLORER-HCM trial design incorporates individualized dosing, including two dose adjustments during the 30-week treatment period based on measurements of LVOT gradient. All assessments and dose adjustments are conducted in a blinded fashion. Patients are allowed to maintain their HCM-related background medications for the duration of the EXPLORER-HCM Phase 3 trial, including beta blockers or calcium channel blockers. An independent data monitoring committee has been established to monitor safety throughout the study.

We are also conducting an open-label extension study of mavacamten among patients who previously completed the Phase 2 PIONEER-HCM trial. This study, known as PIONEER-OLE, has enrolled thirteen of the twenty eligible patients. Patients receive an individualized daily dose of 5mg, 10mg, or 15 mg of mavacamten, with a dose adjustment at Week 6 based on pharmacodynamic and pharmacokinetic criteria, as well as the patient's past experience with mavacamten. We plan to periodically report data from the PIONEER-OLE study, sharing observations on safety, echocardiographic measures of drug activity, including LVOT gradient, and patient symptoms and function.

In April 2018, we initiated a randomized, double-blind, placebo-controlled Phase 2 clinical trial of mavacamten in non-obstructive HCM patients, which we refer to as MAVERICK-HCM. The purpose of this Phase 2 clinical trial is to determine optimal dosing of mavacamten in patients without LVOT obstruction. We intend to enroll approximately 60 subjects in this trial, and data from MAVERICK-HCM is anticipated in the second half of 2019. Patients with nHCM share the same genetic mutations as their oHCM counterpart and left ventricular hypertrophy is a central characteristic of their disease. As nHCM patients do not have outflow obstruction, a lack of left ventricular compliance, or inability of the heart to fill optimally with blood, is thought to be a greater driver of their condition. Based on evidence from preclinical studies and our PIONEER-HCM clinical trial, mavacamten appears to have a positive impact on diastolic relaxation. The MAVERICK-HCM trial will provide additional evidence of this potential effect for mavacamten, ultimately informing the late-stage development of mavacamten in the nHCM indication, and/or informing our development plans for our MYK-224 or LUS-1 program candidates.

Patients from the EXPLORER-HCM and MAVERICK-HCM clinical trials are encouraged to participate in our long-term extension study of mavacamten, known as MAVA-LTE. The MAVA-LTE study will assess long-term safety of mavacamten, as well as its effects on symptoms and echocardiographic measures of systolic and diastolic cardiac function. We expect to enroll up to 280 patients in the MAVA-LTE study, and approximately 100 patients will be randomized to participate in a cardiac magnetic resonance imaging sub study to assess the potential effects of mavacamten treatment on cardiac remodeling.

MYK-224 for HCM

We are advancing a second candidate targeting HCM, known as MYK-224, into the clinic. MYK-224 is designed to preserve the unique advantages of mavacamten's mechanism, including the ability to reduce excess contractility and potentially address impaired relaxation by reducing the number of engaged myosin-actin cross-bridges, while reducing pharmacokinetic variability. We believe MYK-224 may reduce the time required to achieve steady state and thereby provide enhanced dosing flexibility. We expect to initiate a Phase 1 clinical study of MYK-224 in healthy volunteers in the first half of 2019.

MyoKardia's Activator Portfolio for Systolic Heart Failure

Our portfolio of precision cardiovascular therapeutics includes multiple cardiac muscle activator programs aimed at increasing contraction of the heart muscle and thereby improving blood flow from the heart. We are initially targeting precision indications in systolic heart failure and specifically, dilated cardiomyopathies. Our clinical-stage therapeutic candidate, MYK-491, is an orally-administered small molecule designed to increase the number of myosin-actin cross-bridges formed during cardiac muscle contraction, thereby increasing the ensemble force of contraction and improving cardiac output. One goal of MYK-491 is to increase cardiac contractility, thereby improving systolic function, while having minimal impact on diastolic function, or the ability of the heart to relax and fill with blood. Based on preclinical research across multiple animal models, as well as our Phase 1 clinical studies, MYK-491 may hold potential for controlled increases in the heart's contractility with limited impact on relaxation.

Overview of Dilated Cardiomyopathy

The fundamental cause of all systolic heart failure is that the heart muscles are not able to contract with sufficient force. In DCM, the loss of contractility leads the walls of the left ventricle to become thin and over-expanded, functioning under increased stress. This leads to even further progression of cardiac dysfunction. In contrast to HCM, some forms of DCM are characterized by decreased power output of the sarcomeres. In some patients with genetic DCM, this lack of power is caused by genetic mutations that disrupt the ability of individual myosin motors to form cross-bridges with actin and contribute to overall contraction.

DCM is a life-threatening progressive disease. Once symptoms appear, a patient's condition typically declines steadily over the next few years. Typical symptoms include shortness of breath, fatigue, swelling in the extremities or an irregular heartbeat. As the disease progresses, patients become increasingly debilitated and experience persistent shortness of breath, even at rest. Diastolic function, or the heart's ability to relax and fill with blood, is also impaired because the heart is expanded. The dilated left ventricle is itself deprived of an adequate supply of oxygen that may contribute to fibrosis and the risk of dangerous heart rhythm disturbances. In addition, whether or not symptoms have appeared, patients with dilated cardiomyopathy are at risk of sudden cardiac death.

Current Standard of Care for Patients with Dilated Cardiomyopathy

DCM patients are typically prescribed one or more drugs indicated for the treatment of systolic heart failure generally, such as diuretics, beta blockers, angiotensin receptor-neprilysin inhibitors, angiotensin converting enzyme inhibitors and aldosterone antagonists. By treating various signs and symptoms of heart disease and addressing some of the compensatory mechanisms described above, these drugs may reduce overall morbidity and mortality; however, none of the treatments address the underlying cause of disease or eliminate disease progression. Surgical or interventional options available to DCM patients include use of an implantable cardioverter-defibrillator, a biventricular pacemaker, and in refractory patients, a left ventricular assist device and cardiac transplant.

MYK-491 Clinical Development

We are currently enrolling a Phase 2a multiple-ascending dose study to assess the safety of MYK-491 when dosed chronically to steady state and establish proof-of-concept. Up to 40 DCM patients with stable heart failure will be randomized to receive either MYK-491 or placebo for one week, during which time patients will be monitored to evaluate the safety, tolerability, pharmacokinetics, and pharmacodynamics of MYK-491. We anticipate reporting data from the Phase 2a study in the fourth quarter of 2019. All of our clinical studies of MYK-491 rely on the use of non-invasive biomarkers to evaluate left ventricular contractility to establish early proof of mechanism.

Our Phase 1 clinical development program for MYK-491 principally evaluated the safety and tolerability of MYK-491 in healthy human subjects and DCM patients. In DCM patients with stable heart failure, administration of MYK-491 resulted in approximately 10 percent relative increases from baseline in cardiac contractility across multiple echocardiographic measures, including stroke volume, left ventricular ejection fraction and fractional shortening. In increasing the heart's contractility, MYK-491 did not appear to meaningfully change duration of the contraction or the heart's ability to relax and fill with oxygenated blood. Systolic ejection time (SET), a measure of the time it takes to eject blood from the left ventricle, showed a modest increase and the impact of MYK-491 on left ventricular filling was minor across multiple measures of diastolic function. Overall, these data were consistent with results previously reported from the single-ascending dose trial of MYK-491 in healthy volunteers.

MYK-491 was generally well tolerated across the range of oral doses tested in our first-in-human, Phase 1 clinical trial in healthy volunteers. Adverse events observed were benign and transient. Results from our Phase 1a and Phase 1b studies served to inform the starting dose for the Phase 2a study.

ACT-1 for Genetic DCM

ACT-1 is our preclinical activator program targeting genetic DCM due to sarcomeric mutations and impaired calcium regulation. In preclinical models, our ACT-1 prototype molecules successfully increase contractility without prolonging SET and with minimal impact on relaxation. We are able to test ACT-1 in genetic animal models, which we believe will provide us with an opportunity to establish evidence of disease modification in longitudinal studies. We currently anticipate advancing our first ACT-1 program compound into clinical development in late 2020 or early 2021.

Emerging Research in Diseases of Diastolic Dysfunction

Diseases of diastolic dysfunction account for approximately half of all heart failure, affecting an estimated two million to three million people in the United States alone. There are currently no treatments available that have shown benefit to HFpEF patient outcomes. We believe that a therapy capable of improving left ventricular relaxation and increasing the ability for the heart to fill with blood between beats would have profound impact on patients' lives.

We have generated a growing body of preclinical and clinical data indicating that mavacamten positively impacts diastolic relaxation. We initially observed that mavacamten increased left ventricular compliance, or the ability of the left ventricle to relax and fill with blood, in a preclinical comparison of mavacamten and the beta blocker metoprolol in healthy canines and again in a genetic mini-pig model of nHCM. In both animal models, end-diastolic pressure was reduced and the ability of the left ventricle to fill improved. Data from the PIONEER-HCM Phase 2 clinical trial looking at echocardiographic measures of diastolic function also demonstrated reductions in left ventricular filling pressure and increases in filling volume.

As we have learned more about mavacamten's effects on diastolic relaxation, we have been able to apply that knowledge to our clinical and discovery research efforts. The initial observations of mavacamten's potential diastolic effects informed the MAVERICK-HCM clinical trial, as impaired relaxation is thought to be the driving factor in nHCM symptoms. We anticipate that data from this study will provide us with valuable information on the future development of mavacamten, MYK-224 and the LUS-1 program in diseases of diastolic dysfunction.

Our LUS-1 discovery-stage program is identifying novel therapeutics that target diastolic relaxation without reducing the force of contraction. In preclinical studies of LUS-1 molecules, we have observed improved compliance without a loss of stroke volume. We currently anticipate advancing our first LUS-1 program compound into clinical development in 2021 or 2022.

Additional Potential Extensions of our Platform

Beyond HCM and genetic DCM, we are researching defects caused by mutations in proteins that result in other heritable cardiomyopathies and conditions caused by abnormalities in cardiac muscle contraction, such as restrictive cardiomyopathy and left ventricular non-compaction in order to generate precision therapies for those diseases. We believe that the fundamental mechanisms we are targeting in the heart may have applicability in the broader heart failure population. The chemistries we develop to target various components of the sarcomere may also be applicable to skeletal disorders where we can define a parallel linkage between disease-causing mutations in non-cardiac muscle proteins and their resulting biomechanical defects.

Commercial Rights to Our Portfolio

We have discovered all of the compounds in our pipeline internally and retain global development and commercialization rights to all of our programs. We believe consolidated control over our entire portfolio will allow us to make strategic decisions about how we advance each of our therapeutic candidates in alignment with our precision medicine approach. We may enter into strategic alliances in the future for certain programs where the potential therapeutic indications do not align with our precision medicines strategy or for specific therapeutic indications or geographic territories.

In August 2014, we entered into a license and collaboration agreement with Aventis Inc., a wholly-owned subsidiary of Sanofi S.A., for the research, development and potential commercialization of pharmaceutical products for the treatment, prevention and diagnosis of HCM and DCM, as well as potential additional indications. On December 31, 2018, Sanofi notified us that they intend to terminate the agreement with respect to the HCM-1 program and acknowledged that the agreement was deemed to be terminated as of that date with respect to all other programs. As a result of the notification, Sanofi's reimbursement of certain of our research and development costs will terminate effective March 31, 2019 for MYK-224 and June 30, 2019 for mavacamten. The agreement covered three main research programs: HCM-1 (mavacamten and MYK-224), HCM-2, and DCM-1 (MYK-491). Under the agreement, we retained rights to develop and commercialize mavacamten, MYK-224 and HCM-2 in the United States, as well as the option to co-commercialize MYK-491 in the United States. Sanofi was granted worldwide rights to commercialize MYK-491 and regulatory and commercialization rights outside the United States for the two HCM programs. Over the course of the collaboration, we have received the following from Sanofi:

(i) $105.0 million in cash as upfront, milestone and continuation payments, in exchange for royalty-based license fees in the event of commercialization of these programs, which rights continue post-termination;

(ii) $48.3 million in cash, in exchange for issuances of our common stock, net of offering costs and underwriting fees;

(iii) $43.4 million in cash, as reimbursement for certain research and development costs under the Registration Program Plan and pre-Proof of Concept terms of the agreement; and

(iv) $45.0 million of in-kind research and development support.

Under the terms of the Collaboration Agreement, the Collaboration Agreement was deemed terminated with respect to programs other than the HCM-1 Program on December 31, 2018, and on that date Sanofi also notified us that they did not intend to continue the collaboration with respect to the HCM-1 Program. As a result, the agreement has been terminated in its entirety except for Sanofi's continuing rights to receive royalties in the event of commercialization of the HCM-1 Program in the United States. The events leading up to the termination included our belief and discussion with Sanofi that it is critical to our strategy to maintain control of the U.S. commercial rights for mavacamten, as well our desire not to grant additional rights in expanded indications. We believe the termination of our collaboration agreement with Sanofi does not impact our program development timelines. Sanofi will remain eligible to receive royalties associated with any potential HCM-1 products that will range from mid-single to low-double digits in the United States. We have no royalty obligations to Sanofi for sales outside the United States.

Intellectual Property

Our commercial success depends in part on our ability to obtain and maintain proprietary protection for our drug candidates, novel biological discoveries, screening and drug development technology and other know-how, to operate without infringing on the proprietary rights of others and to prevent others from infringing our proprietary rights. Our policy is to seek to protect our proprietary position by, among other methods, filing U.S. and foreign patent applications related to our proprietary technology, inventions and improvements that are important to the development and implementation of our business. We also rely on trade secrets, know-how, continuing technological innovation and potential in-licensing of intellectual property to develop and maintain our proprietary position.

As for the pharmaceutical products we develop and commercialize, as a normal course of business, we intend to pursue composition-of-matter patents, where possible, and dosage and formulation patents, as well as manufacturing patents and method-of-use patents on novel indications for known compounds. We also seek patent protection with respect to novel biological discoveries, including new diagnostic methods and targets. We may also pursue patents with respect to our proprietary screening and drug development processes and technology. We may also seek patent protection, either alone or jointly with our collaborators, as our collaboration agreements may dictate.

Our patent estate includes five issued U.S. patents, three U.S. pending patent applications, one pending Patent Cooperation Treaty, or PCT, application, over 65 foreign patent applications and patents, all of which are exclusively owned by us, and some of which have claims relating to all of our current clinical-stage drug candidates. With respect to our lead drug candidates in the HCM program, we exclusively own two issued U.S. patents, one pending U.S. patent application, and over 35 foreign patent applications and patents relating to the chemical composition of mavacamten and use thereof.

Individual patents extend for varying periods depending on the date of filing of the patent application and the legal term of patents in the countries in which they are obtained. Generally, patents issued for applications filed in the United States are effective for twenty years from the earliest effective filing date of the utility patent application. In addition, in certain instances, a patent term can be extended to recapture a portion of the term effectively lost as a result of the FDA regulatory review period. However, the restoration period cannot be longer than five years and the total patent term including the restoration period must not exceed 14 years following FDA approval. The duration of foreign patents varies in accordance with provisions of applicable local law, but typically is also twenty years from the earliest effective filing date of the utility patent application. Our currently issued U.S. patents with respect to mavacamten are expected to expire in 2034, not including any extensions due to patent restoration or regulatory exclusivities. However, the actual protection afforded by a patent varies on a product by product basis, from country to country, and depends upon many factors, including, but not limited to, the type of patent, the scope of its coverage, the availability of regulatory related extensions, the availability of legal remedies in a particular country and the validity and enforceability of the patent.

Furthermore, the patent positions of biotechnology and some pharmaceutical products and processes like those we may develop and commercialize are generally uncertain and involve complex legal and factual questions. No consistent policy regarding the breadth of claims allowed in such patents has emerged to date in the United States. The patent situation outside the United States is even more uncertain. Changes in either the patent laws or in interpretations of patent laws in the United States and other countries can diminish our ability to protect our inventions and enforce our intellectual property rights and more generally could affect the value of intellectual property. Accordingly, we cannot predict the breadth of claims that may be granted or enforced in our patents or in third-party patents. The biotechnology and pharmaceutical industries are characterized by extensive litigation regarding patents and other intellectual property rights. Our ability to maintain and solidify our proprietary position for our drugs and technology will depend on our success in obtaining effective claims and enforcing those claims once granted. We do not know whether any of the patent applications that we may file or license from third parties will result in the issuance of any patents. The issued patents that we own or may receive in the future may be challenged, invalidated or circumvented, and the rights granted under any issued patents may not provide us with proprietary protection or competitive advantages against competitors with similar technology. Furthermore, our competitors may be able to independently develop and commercialize similar drugs or duplicate our technology, business model or strategy without infringing our patents or due to compulsory licensing regulations.

Because of the extensive time required for clinical development and regulatory review of a drug we may develop, it is possible that, before any of our drugs can be commercialized, any related patent may expire or remain in force for only a short period following commercialization, thereby reducing any advantage of any such patent.

In addition to patents, we rely upon unpatented trade secrets and know-how and continuing technological innovation to develop and maintain our competitive position. We seek to protect our proprietary information, in part, using confidentiality agreements with our commercial partners, collaborators, employees and consultants and invention assignment agreements with our employees. We also have confidentiality agreements or invention assignment agreements with our commercial partners and selected consultants. These agreements are designed to protect our proprietary information and, in the case of the invention assignment agreements, to grant us ownership of technologies that are developed through a relationship with a third party. These agreements may be breached, and we

may not have adequate remedies for any breach. In addition, our trade secrets may otherwise become known or be independently discovered by competitors. To the extent that our commercial partners, collaborators, employees and consultants use intellectual property owned by others in their work for us, disputes may arise as to the rights in related or resulting know-how and inventions.

Our commercial success will also depend in part on not infringing upon the proprietary rights of third parties. It is uncertain whether the issuance of any third-party patent would require us to alter our development or commercial strategies, or our drugs or processes, obtain licenses or cease certain activities. Our breach of any license agreements or failure to obtain a license to proprietary rights that we may require in order to develop or commercialize our future drugs may have a material adverse impact on us.

In addition, substantial scientific and commercial research has been conducted for many years in the areas in which we have focused our development efforts, which has resulted in third parties having a number of issued patents and pending patent applications. Patent applications in the United States and elsewhere are published only after eighteen months from the priority date. The publication of discoveries in the scientific or patent literature frequently occurs substantially later than the date on which the underlying discoveries were made. Additionally, failure to uncover third party rights of interest may inadvertently occur due to many factors, which include but are not limited to, the scope of the diligence conducted, human error or third-party omission. Therefore, patent applications relating to drugs similar to mavacamten, MYK-491 and any future drugs, discoveries or technologies and their uses thereof may exist without our knowledge.

Manufacturing

We do not own or operate, and currently have no plans to establish, any manufacturing facilities. We use third-party contract manufacturing organizations ("CMOs") for all of our requirements of raw materials, drug substance and drug product for our preclinical research and our ongoing clinical trials of mavacamten and MYK-491, and in 2019 will depend solely upon our CMOs due to the termination of our collaboration agreement with Sanofi. We have not entered into long-term agreements with our current CMOs. We intend to continue to rely on CMOs and may seek to enter into arrangements with strategic partners for later-stage development and commercialization of mavacamten and MYK-491, as well as the development and commercialization of any other product candidates that we may identify. Although we currently rely on CMOs, we have personnel and third-party consultants with extensive manufacturing experience to oversee the manufacturing relationships and activities.

We believe the synthesis of the drug substance for mavacamten is reliable and reproducible from readily available starting materials, and the synthetic routes are amenable to large-scale production and do not require unusual equipment or handling in the manufacturing process. We have obtained an adequate supply of the drug substance for mavacamten from our first CMO to satisfy our immediate clinical and preclinical demands. We have implemented improvements to our drug substance manufacturing process to further facilitate production capacity adequate to meet future development and commercial demands. In addition, we believe the synthesis of the drug substance for MYK-491 is reliable and reproducible. We have obtained an adequate supply of the drug substance for MYK-491 from Sanofi to satisfy our immediate clinical and preclinical demands. We are developing improvements to our MYK-491 drug substance manufacturing process to further facilitate production capacity adequate to meet future development and commercial demands.

Drug product formulation development for mavacamten and MYK-491 is in progress. We have contracted with a third-party manufacturer capable of both formulation development and drug product manufacturing through early commercialization for mavacamten. We may identify other drug product manufacturers in the future to add additional capacity and redundancy to our supply chain. In our SAD clinical trials of mavacamten, we utilized a suspension formulation. We have developed and manufactured multiple strengths of an immediate release tablet for use in the MAD and other early stage trials (including PIONEER-HCM) trial. For future development and commercialization, we have developed a refined capsule formulation and may develop alternate formulations for the adolescent and children/infant populations. We also employed a suspension formulation for the healthy volunteers SAD study of MYK-491, which we are utilizing in the MAD study as well. We have also developed an immediate release tablet formulation for the proof-of-concept studies in patients. For future MYK-491 development and commercialization, we intend to develop a refined tablet formulation and may develop alternate formulations for the adolescent and children and infant populations.

Sales and Marketing

We believe that we can maximize the value of our products by retaining substantial commercialization rights to our product candidates and, where appropriate, entering into collaborations for specific therapeutic indications or geographic territories.

Our current strategy is to market our initial HCM and DCM products using a dedicated, direct sales force focused on cardiomyopathy specialists and targeted cardiologists in the United States. These physicians are typically affiliated with academic institutions, leading hospitals and medical centers. We believe they represent a concentrated prescriber base that can be appropriately managed with a specialty care sales model.

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 scientific knowledge, technology and development experience, our precision medicine platform and our pioneering culture provide us with competitive advantages, we face potential competition from many different sources, including major pharmaceutical, specialty pharmaceutical and biotechnology companies, academic institutions, governmental agencies and public and private research institutions. Any therapeutic candidates that we successfully develop and commercialize will compete with existing products and new products that may become available in the future.

Many of our competitors, either alone or with their strategic partners, have substantially greater financial, technical and human resources than we do and significantly greater experience in the discovery and development of product candidates, obtaining FDA and other regulatory approvals of treatments and the commercialization of those treatments. Accordingly, our competitors may be more successful than us in obtaining approval for treatments and achieving widespread market acceptance.

In the field of heart failure drug development, our principal competitors include Amgen Inc., Bayer AG, Bristol-Myers Squibb Company, C.H. Boehringer Sohn AG & Co. KG, Novartis AG and Takeda Pharmaceutical Company Limited. Specific to our initial drug discovery and development focus areas, it is believed that Cytokinetics, Inc. has ongoing programs in HCM and that Array BioPharma Inc., Novartis AG, and Zensun (Shanghai) Sci. & Tech. Co., Ltd. have ongoing programs in DCM. Additionally, there may be other companies pursuing therapeutic candidates from which we face current or future competition.

Government Regulation

Government authorities in the United States at the federal, state and local levels, and in other countries, extensively regulate, among other things, the research, development, testing, manufacture, quality control, approval, labeling, packaging, storage, record-keeping, promotion, advertising, distribution, marketing, export and import of drug products such as those we are developing.

A number of different regulatory agencies may have regulatory oversight, depending on the product at issue, and the type and stage of activity. In the United States, these include the FDA, the Drug Enforcement Administration, or DEA, the Centers for Medicare and Medicaid Services, or CMS, other federal agencies, state boards of pharmacy, state-controlled substance agencies and more.

Government Regulation

Drug Development Process

The pharmaceutical industry is subject to extensive global regulation by regional, country, state and local agencies. In the United States, the FDA is the primary regulator of drugs under the Federal Food, Drug, and Cosmetic Act, or the FDCA, and implementing regulations. The process of obtaining regulatory approvals and compliance with applicable federal, state, local and foreign statutes and regulations require the expenditure of substantial time and financial resources. Failure to comply with applicable requirements at any time during the drug development process, approval process, or after approval may subject us to adverse consequences and administrative or judicial sanctions, any of which could have a material adverse effect on us. These sanctions could include refusal to approve pending applications; withdrawal of or restrictions on an approval; imposition of a clinical hold or other limitation on research; warning letters; product seizures; total or partial suspension of development, production, or distribution; or injunctions, fines, disgorgement, civil penalties or criminal prosecution.

The process required before a drug may be marketed in the United States, the EU and most foreign countries generally involves the following:

- completion of preclinical, also known as nonclinical, laboratory tests, animal studies and formulation studies conducted according to Good Laboratory Practice, or GLP, requirements, animal welfare laws and other applicable regulations;
- submission to the FDA of an IND which must become effective before clinical trials, meaning trials in human subjects, may begin in the United States, obtaining similar authorizations in other jurisdictions where clinical research will be conducted and maintaining these authorizations on a continuing basis throughout the time that trials are performed and new data are collected;
- performance of adequate and well-controlled clinical trials according to Good Clinical Practice, or GCP, requirements to demonstrate whether a proposed drug is safe and effective for its intended use;
- preparation and submission to the FDA of a marketing authorization application, such as an NDA, and submitting similar marketing authorization applications in other jurisdictions where commercialization will be pursued;

- satisfactory completion of an FDA inspection of the manufacturing facility or facilities at which the product will be produced to assess compliance with current good manufacturing practice, or cGMP, and/or similar requirements in other jurisdictions where commercialization will be pursued, to assure that the facilities, methods and controls are adequate to preserve the product's identity, strength, quality and purity;
- satisfactory completion of an FDA or other regulatory authority inspection of clinical trial sites to assess compliance with GCP requirements; and
- FDA review and approval of the NDA or other regulatory authority review and approval of a marketing authorization application.

The development, testing and approval process requires substantial time, effort and financial resources and bears significant, inherent risk that the individual products will not exhibit the relevant safety, effectiveness, or quality characteristics. The approval process may be more or less rigorous from country to country, and the time required for approval may be longer or shorter than that required in the United States. Approval in one country does not assure that a product will be approved in another country. We cannot be certain that any approvals for our product candidates will be granted on a timely basis, or with the specific terms that we desire, if at all.

An IND is a request for authorization from the FDA to administer an investigational drug product to humans. FDA's primary objectives in reviewing an IND are, in all phases of the investigation, to assure the safety and rights of subjects, and, in Phase 2 and 3, to help assure that the quality of the scientific evaluation of drugs is adequate to permit an evaluation of the drug's effectiveness and safety. The central focus of an IND submission is on the general investigational plan and the protocol(s) for clinical trials. The IND also includes results of animal studies or other human studies, as appropriate, as well as manufacturing information, analytical data and any available clinical data or literature to support the use of the investigational new drug. An IND must become effective before human clinical trials may begin. An IND will automatically become effective 30 days after receipt by the FDA, unless before that time the FDA raises concerns or questions related to the proposed clinical trials. In such a case, the IND may be placed on clinical hold and the IND sponsor and the FDA must resolve any outstanding concerns or questions before clinical trials can begin. The FDA also may impose a clinical hold after a trial has started. Accordingly, submission of an IND may or may not result in the FDA allowing clinical trials to commence.

Clinical trials involve the administration of the investigational drug to human subjects under the supervision of qualified investigators in accordance with GCP, which include the requirement that all research subjects provide their informed consent for their participation in any clinical trial. Clinical trials are conducted under protocols detailing, among other things, the objectives of the study, the inclusion and exclusion criteria, the parameters to be used in monitoring safety, and the efficacy criteria to be evaluated. A protocol for each clinical trial and any subsequent protocol amendments must be submitted to the FDA as part of the IND, or to the governing authorities on a country by country basis. Additionally, approval must also be obtained from each clinical trial site's institutional review board, or IRB, or ethics committee before the trials may be initiated, and the IRB or ethics committee must monitor the study until completed.

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

- Phase 1. The drug initially is introduced into a small number of patients or healthy human volunteers and information is collected pertaining to the drug's safety, dosage tolerance, absorption, metabolism, distribution and elimination. These trials are designed to determine the metabolism and pharmacologic actions, side effects with increasing doses and if possible, early evidence of effectiveness. If favorable, additional, larger Phase 2 studies may be initiated.
- Phase 2. These trials include controlled clinical trials initiated in a limited patient population to identify possible adverse effects and safety risks, to preliminarily evaluate the effectiveness of the drug candidate for a particular indication in patients with the disease or condition under study, and to determine common short-term side effects and risks associated with the drug. If data are satisfactory, the sponsor may commence large-scale trials to confirm the compound's efficacy and safety.
- Phase 3. Clinical trials are expanded and controlled trials undertaken to further evaluate dosage, clinical efficacy and safety in an expanded patient population at geographically dispersed clinical trial sites. These clinical trials are intended to gather additional information about effectiveness and safety that is needed to evaluate the overall benefit-risk profile of the drug candidate and provide an adequate basis for physician labeling and regulatory approval.
- Regulatory agencies may also require, or companies may pursue, additional clinical trials after a product is approved.

During all phases of clinical development, regulatory agencies require extensive monitoring and auditing of all clinical activities, clinical data, and clinical study investigators. Progress reports related to clinical trials must be submitted at least annually to the FDA and participating IRBs, and other governing authorities. More frequent IND safety reports must be submitted to the FDA and other governing health authorities and to investigators for serious and unexpected suspected adverse events, findings from animal or in

vitro testing or other studies that suggest a significant risk to humans exposed to the drug, and any clinically important increase in the rate of a serious suspected adverse reaction over that listed in the protocol or investigator brochure. The sponsor must submit an IND safety report within 15 calendar days after the sponsor determines that the information qualifies for reporting. The sponsor also must notify the FDA of any unexpected fatal or life-threatening suspected adverse reaction within seven calendar days after the sponsor's initial receipt of the information. Clinical trials may not be completed successfully within a specified period, if at all. The FDA or other governing authorities or the sponsor may suspend a clinical trial at any time for a variety of reasons, including a finding that human subjects are being exposed to an unacceptable health risk or that the investigational product apparently lacks efficacy. Similarly, an IRB or EC can suspend or terminate approval of a clinical trial at its institution if the clinical trial is not being conducted in accordance with applicable requirements or if the drug candidate has been associated with unexpected serious harm to healthy volunteers or patients. Additionally, some clinical trials are overseen by an independent group of qualified experts organized by the clinical trial sponsor, known as a data monitoring committee, or DMC. The DMC reviews safety information and provides recommendations to the sponsor for whether a trial may move forward at designated check points based on access to certain data from the study. As the sponsor, we may also suspend or terminate a clinical trial based on evolving business objectives and/or competitive climate.

At times during the development of a new drug product, sponsors are given opportunities to meet with the FDA. This commonly occurs prior to submission of an IND, at the end of Phase 2 trials, and before an NDA is submitted. Meetings at other times may also be requested. These meetings provide an opportunity for the sponsor to share information about the data gathered to date, for the FDA to provide advice, and for the sponsor and the FDA to reach agreement on the next phase of development. Concurrent with clinical trials, companies usually complete additional animal studies and develop additional information about the chemistry and physical characteristics of the drug candidate and 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 drug candidate, and the manufacturer must develop methods for confirming the identity, quality, purity and potency of the final products. Additionally, appropriate packaging must be selected and tested, and stability trials must be conducted to demonstrate that the drug candidate does not undergo unacceptable deterioration over its shelf-life and distribution pathway.

Disclosure of Clinical Trial Information

Sponsors of clinical drug trials (other than Phase 1 trials) are required to register and disclose certain clinical trial information. Information related to the product, comparator, patient population, phase of investigation, trial sites and investigators and other aspects of the clinical trial is made public as part of the registration. Sponsors are also obligated to disclose the results of their clinical trials after completion. Disclosure of the results of certain trials may be delayed until the new product or new indication being studied has been approved. However, there are evolving rules and increasing requirements for publication of trial-related information, and it is possible that data and other information from trials involving drugs that never garner approval could in the future be required to be disclosed. In addition, publication policies of major medical journals mandate certain registration and disclosures as a pre-condition for potential publication, even when this is not presently mandated as a matter of law. Competitors may use this publicly available information to gain knowledge regarding the progress of development programs.

New Drug Application Review and Approval Processes

The results of drug candidate development, preclinical studies and clinical trials, along with descriptions of the manufacturing process, analytical tests conducted on the drug candidate, proposed labeling and other relevant information are submitted to the FDA as part of an NDA, requesting approval to market the drug candidate for one or more proposed indications. 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 and effectiveness of the investigational drug product to the satisfaction of the FDA.

The cost of preparing and submitting an NDA is substantial. Under federal law, NDAs are subject to substantial application user fees and the sponsor of an approved NDA is also subject to an annual prescription drug product program fees. Under the Prescription Drug User Fee Act, or PDUFA, as amended, each NDA must be accompanied by a user fee. The FDA adjusts the PDUFA user fees on an annual basis. According to the FDA's fee schedule, the user fee for each NDA application requiring clinical data is $2,588,478. For fiscal year 2018, PDUFA also imposes an annual prescription drug product program fee of $309,915. Fee waivers or reductions are available in certain circumstances, including a waiver of the application fee for the first application filed by a small business. Additionally, no user fees are assessed on NDAs for products designated as orphan drugs, unless the product also includes a non-orphan indication.

The FDA reviews each NDA to ensure that it is sufficiently complete for substantive review before it may be filed. Once the submission is accepted for filing, the FDA begins an in-depth review. The FDA's goal is to review applications within ten months of the filing date or, if the application relates to an unmet medical need in a serious or life-threatening indication, six months from the filing date. The review process is often significantly extended by FDA requests for additional information or clarification. The FDA reviews an NDA to determine, among other things, whether a drug candidate is safe and effective for its intended use and indication for use and whether its manufacturing is cGMP-compliant. The FDA may refer the NDA to an advisory committee consisting of a panel of external experts for review and recommendation as to whether the NDA should be approved and under what conditions. The FDA is not bound by the recommendation of an advisory committee, but it typically follows such recommendations.

After the FDA evaluates the NDA and conducts inspections of manufacturing facilities where the drug product and/or its active pharmaceutical ingredient will be produced, it may issue an approval letter or a Complete Response Letter. An approval letter authorizes commercial marketing of the drug with specific prescribing information for specific indications. A Complete Response Letter indicates that the review cycle of the application is complete, and the application is not ready for approval. A Complete Response Letter identifies deficiencies that may be minor, for example, requiring labeling changes, or major, for example, requiring additional clinical trial(s), and/or other significant, expensive and time-consuming requirements related to clinical trials, preclinical studies or manufacturing. Even if such additional information is submitted, the FDA may ultimately decide that the NDA does not satisfy the criteria for approval. Data obtained from clinical trials are not always conclusive and the FDA may interpret data differently than we interpret the same data.

If a product receives regulatory approval, the approval may be limited to specific diseases, dosages, or indications for use, which could restrict the commercial value of the product. Further, the FDA may require that certain contraindications, warnings or precautions be included in the product labeling. In addition, the FDA may require post-approval trials, sometimes referred to as Phase 4 clinical trials, to further assess a drug's safety and effectiveness after NDA approval and may require testing and surveillance programs to monitor the safety of approved products that have been commercialized. The FDA could also approve the NDA with a Risk Evaluation and Mitigation Strategy, or REMS, plan to mitigate risks, which could include medication guides, physician communication plans, or elements to assure safe use, such as restricted distribution methods, patient registries and other risk minimization tools.

Expedited Development and Review Programs

The FDA has various programs, including fast track, priority review, accelerated approval, and breakthrough therapy designation, that are intended to increase agency interactions, expedite or facilitate the process for reviewing drug candidates, and/or provide for initial approval on the basis of surrogate endpoints. Even if a drug candidate qualifies for one or more of these programs, the FDA may later decide that the drug candidate no longer meets the conditions for qualification.

The Fast Track program is intended to expedite or facilitate the process for reviewing new drugs that are intended to treat a serious or life-threatening disease or condition and demonstrate the potential to address unmet medical needs for the disease or condition. Fast Track designation applies to the combination of the product and the specific indication for which it is being studied. The sponsor of a new drug may request the FDA to designate the drug as a Fast Track product at any time during the clinical development of the product. Unique to a Fast Track product, the FDA may consider for review sections of the marketing application on a rolling basis before the complete application is submitted, if the sponsor provides a schedule for the submission of the sections of the application, the FDA agrees to accept sections of the application and determines that the schedule is acceptable, and the sponsor pays any required user fees upon submission of the first section of the application.

Any product submitted to the FDA for marketing, including under a Fast Track program, may be eligible for other types of FDA programs intended to expedite development and review, such as priority review and accelerated approval. Any product is eligible for priority review if it has the potential to provide safe and effective therapy where no satisfactory alternative therapy exists or a significant improvement in the treatment, diagnosis or prevention of a disease compared to marketed products. The FDA will attempt to direct additional resources to the evaluation of an application for a new drug designated for priority review in an effort to facilitate the review. Additionally, a product may be eligible for accelerated approval. Drug candidates studied for their safety and effectiveness in treating serious or life-threatening illnesses and that provide meaningful therapeutic benefit over existing treatments may receive accelerated approval, which means that they may be approved on the basis of adequate and well-controlled clinical studies establishing that the product has an effect on a surrogate endpoint that is reasonably likely to predict a clinical benefit, or on the basis of an effect on a clinical endpoint that can be measured earlier than irreversible morbidity or mortality, 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. As a condition of approval, the FDA may require that a sponsor of a drug receiving accelerated approval perform adequate and well-controlled post-marketing clinical studies. Failure to conduct required post-approval trials, or the inability to confirm a clinical benefit during post-marketing trials, may allow the FDA to withdraw the drug from the market on an expedited basis. In addition, the FDA presently requires as a condition for accelerated approval pre-approval of promotional materials, which could adversely impact the timing of the commercial launch of the product. Fast Track designation, priority review and accelerated approval do not change the standards for approval but may expedite the development or approval process.

A drug can be designated as a breakthrough therapy if it is intended, alone or in combination with one or more other drugs, to treat a serious or life-threatening disease or condition and preliminary clinical evidence indicates that it may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. A sponsor may request that a drug be designated as a breakthrough therapy at any time during the clinical development of the product. If so designated, FDA shall act to expedite the development and review of the product's marketing application, including by meeting with the sponsor throughout the product's development, providing timely advice to the sponsor to ensure that the development program to gather preclinical and clinical data is as efficient as practicable, involving senior managers and experienced review staff in a cross-disciplinary review, assigning a cross-disciplinary project lead for the FDA review team to facilitate an efficient review of the development program and to serve as a scientific liaison between the review team and the sponsor, and taking steps to ensure that the design of the clinical trials is as efficient as practicable.

Post-Approval Requirements

Any products for which we may receive future FDA approval are subject to continuing regulation by the FDA, including, among other things, record-keeping requirements, reporting and analysis of adverse experiences with the product, providing the FDA with updated safety, efficacy and quality information, product sampling and distribution requirements, maintaining up-to-date labels, warnings, and contraindications, and complying with promotion and advertising requirements. Products may be promoted only for the approved indications and in accordance with the approved label; products cannot be promoted for unapproved, or off-label, uses, although physicians may prescribe drugs for off-label uses in accordance with the practice of medicine. Manufacturers must continue to comply with GMP requirements, which are extensive and require considerable time, resources and ongoing investment to ensure compliance. In addition, changes to manufacturing processes often require prior FDA approval before being implemented and other types of changes to the approved product, such as adding new indications and additional labeling claims, are also subject to further FDA review and approval. In addition, the FDA may require testing and surveillance programs to monitor the effect of approved products that have been commercialized, and the FDA has the power to prevent or limit further marketing of a product based on the results of these post-marketing programs. Manufacturers and other entities involved in the manufacturing and distribution of approved products are required to register their establishments with the FDA and certain state agencies and are subject to periodic inspections for compliance with cGMP and other laws. FDA and state inspections may identify compliance issues at manufacturing that may disrupt production or distribution or may require substantial resources to correct.

Once an approval is granted, the FDA may withdraw the approval if compliance with regulatory standards is not maintained or if problems occur after the product reaches the market, such as adverse events, the existence or severity of which was unknown when the product was approved. Later discovery of previously unknown problems with a product may result in restrictions on the product or complete withdrawal from the market. Further, the failure to maintain compliance with regulatory requirements may result in administrative or judicial actions, such as fines, warning letters, holds on clinical trials, voluntary product recalls, product seizures, product detention or refusal to permit the import or export of products, refusal to approve pending applications or supplements, restrictions on marketing or manufacturing, injunctions or civil or criminal payments or penalties.

From time to time, new legislation is enacted that changes the statutory provisions governing the approval, manufacturing, and marketing of products regulated by the FDA. In addition, FDA regulations and guidance may be revised or reinterpreted by the agency in ways that may significantly affect our business and our products. It is impossible to predict whether further legislative or regulatory or policy changes will occur or be implemented and what the impact of such changes, if any, may be.

Patent Term Restoration and Marketing Exclusivity

Depending upon the timing, duration, and specifics of FDA approval of the use of our drug candidates, some of our U.S. patents may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984, referred to as the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent term to be extended up to five years as compensation for patent term effectively lost due to the FDA's pre-market approval requirements. However, patent term restoration cannot extend the remaining term of a patent beyond a total of 14 years from the product's approval date. The patent term restoration period is generally one-half the time between the effective date of an IND and the submission date of an NDA, plus the time between the submission date of an NDA and the approval of that application, except that the review period is reduced by any time during which the applicant failed to exercise due diligence. Only one patent applicable to an approved drug is eligible for the extension. Extensions are not granted as a matter of right and the extension must be applied for prior to expiration of the patent and within a 60-day period from the date the product is first approved for commercial marketing. The United States Patent and Trademark Office, in consultation with the FDA, reviews and approves the application for any patent term extension or restoration. Where a product contains multiple active ingredients, if any one active ingredient has not been previously approved, it can form the basis of an extension of patent term provided the patent claims that ingredient or the combination.

In the future, we may apply for patent term restoration for some of our presently owned patents to add patent life beyond their current expiration date, depending on the expected length of clinical trials and other factors involved in the submission of the relevant NDA; however, there can be no assurance that any such extension will be granted to us.

Market exclusivity provisions under the FDCA also can delay the submission or the approval of certain applications. The specific scope varies, but fundamentally the FDCA provides a five-year period of non-patent marketing exclusivity within the United States to the first applicant to gain approval of an NDA for a new chemical entity never previously approved by the FDA either alone or in combination. A drug is a new chemical entity if the FDA has not previously approved any other new drug containing the same active moiety, which is the compound responsible for the action of the drug substance. During the exclusivity period, the FDA may not accept for review an abbreviated new drug application, or ANDA, or a 505(b)(2) NDA submitted by another company for another version of such drug where the applicant does not own or have a legal right of reference to all the data required for approval. However, an application may be submitted after four years if it contains a certification of patent invalidity or non-infringement. The FDCA also provides three years of marketing exclusivity for an NDA, 505(b)(2) NDA, or supplement to an existing NDA if new clinical investigations, other than bioavailability trials, that were conducted or sponsored by the applicant are deemed by the FDA to be essential to the approval of the application, for example, for new indications, dosages, or strengths of an existing drug. This three-year exclusivity covers only the conditions associated with the new clinical investigations and does not prohibit the FDA from approving ANDAs for drugs containing the original active agent. Five-year and three-year exclusivity will not delay the submission or approval of a full NDA. However, an applicant submitting a full NDA would be required to conduct or obtain a right of reference to all of the preclinical studies and adequate and well-controlled clinical trials necessary to demonstrate safety and effectiveness.

Pediatric Information and Exclusivity

Pediatric exclusivity is another type of regulatory market exclusivity in the United States. Pediatric exclusivity, if granted, adds six months to existing exclusivity periods and patent terms. This six-month exclusivity, which runs from the end of other exclusivity protection or patent term, may be granted based on the voluntary completion of a pediatric trial in accordance with an FDA-issued "Written Request" for such a trial. The FDA issues a written request for pediatric clinical trials prior to approval of a NDA only where it determines that information relating to the use of a drug in a pediatric population, or part of the pediatric population, may produce health benefits in that population.

Under the FDCA, NDAs and certain supplements to NDAs must contain data adequate to assess the safety and effectiveness of the drug for the claimed indications in all relevant pediatric subpopulations and to support dosing and administration for each pediatric subpopulation for which the drug is safe and effective. The FDCA requires that a sponsor who is planning to submit a marketing application for a drug or biological product that includes a new active ingredient, new indication, new dosage form, new dosing regimen or new route of administration submit an initial Pediatric Study Plan, or PSP, unless the drug has been granted orphan designation for the proposed indication at the time the initial PSP is required, within 60 days of an end-of-phase 2 meeting or as may be agreed between the sponsor and the FDA. The initial PSP must include an outline of the pediatric study or studies that the sponsor plans to conduct, including study objectives and design, age groups, relevant endpoints and statistical approach, or a justification for not including such detailed information, and any request for a deferral of pediatric assessments or a full or partial waiver of the requirement to provide data from pediatric studies along with supporting information. The FDA and the sponsor must reach agreement on the PSP. A sponsor can submit amendments to an agreed-upon initial PSP at any time if changes to the pediatric plan need to be considered based on data collected from preclinical studies, early phase clinical trials, and/or other clinical development programs.

Orphan Drug Designation and Exclusivity

Under the Orphan Drug Act, the FDA may grant orphan drug designation to drug candidates intended to treat a rare disease or condition, which is generally a disease or condition that affects fewer than 200,000 individuals in the United States, or more than 200,000 individuals in the United States and for which there is no reasonable expectation that costs of research and development of the drug for the indication can be recovered by sales of the drug in the United States. Orphan drug designation must be requested before submitting an NDA. After the FDA grants orphan drug designation, the identity of the therapeutic agent and its potential orphan use are disclosed publicly by the FDA. Orphan drug designation does not convey any advantage in or shorten the duration of the regulatory review and approval process.

If a drug candidate that has orphan drug designation subsequently receives the first FDA approval for the disease for which it has such designation, the product is entitled to orphan drug exclusivity, which means that the FDA may not approve any other applications to market the same drug for the same indication for seven years, except in very limited circumstances, such as if the second applicant demonstrates the clinical superiority of its product or the manufacturer of the product with exclusivity is unable to assure sufficient quantities of the product. Orphan drug exclusivity does not prevent the FDA from approving a different drug for the same disease or condition, or the same drug for a different disease or condition. Among the other benefits of orphan drug designation are tax credits for certain research and a waiver of the NDA application user fee. Orphan drug exclusivity could block the approval of our drug candidates for seven years if a competitor obtains approval of the same product as defined by the FDA or if our drug candidate is determined to be contained within the competitor's product for the same indication or disease.

As in the United States, we may apply for designation of a drug candidate as an orphan drug for the treatment of a specific indication in the European Union before the application for marketing authorization is made. In the EU, the European Commission, after reviewing the opinion of the EMA's Committee for Orphan Medicinal Products grants orphan drug designation to promote the development of products that are intended for the diagnosis, prevention or treatment of life-threatening or chronically debilitating conditions affecting not more than 5 in 10,000 persons in the EU Community (or where it is unlikely that the development of the medicine would generate sufficient return to justify the investment) and for which no satisfactory method of diagnosis, prevention, or treatment has been authorized (or, if a method exists, the product would be a significant benefit to those affected). Orphan drug designation in the EU entitles the manufacturer to financial incentives such as reduction of fees or fee waivers and up to 10 years of market exclusivity for the approved indication unless another applicant can show that its product is safer, more effective or otherwise clinically superior to the orphan designated product. This period may be reduced to six years if the orphan drug designation criteria are no longer met, including where it is shown that the product is sufficiently profitable not to justify maintenance of market exclusivity. Orphan drug designation must be requested before submitting an application for marketing approval. Orphan drug designation does not convey any advantage in, or shorten the duration of, the regulatory review and approval process.

The FDA and foreign regulators expect holders of exclusivity for orphan drugs to assure the availability of sufficient quantities of their orphan drugs to meet the needs of patients. Failure to do so could result in the withdrawal of marketing exclusivity for the orphan drug.

Pharmaceutical Coverage, Pricing, and Reimbursement

United States

Significant uncertainty exists as to the coverage and reimbursement status of any products for which we obtain regulatory approval. 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 healthcare costs. Patients are unlikely to use our products unless coverage is provided, and reimbursement is adequate to cover a significant portion of the cost of our products. Sales of any products for which we receive regulatory approval for commercial sale will therefore depend, in part, on the availability of coverage and adequate reimbursement from third-party payors. Third-party payors include government authorities, managed care providers, private health insurers and other organizations.

Even if the FDA approves NDAs for our drug candidates, sales of our products will depend, in part, on the availability of coverage and reimbursement by third-party payors, such as government health programs, commercial or private insurance, and managed care organizations. The process for determining whether a payor will provide coverage for a drug product may be separate from the process for setting the reimbursement rate that the payor will pay for the drug product once coverage is approved. 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 FDA-approved drugs for a particular indication. A decision by a third-party payor not to cover our product candidates could reduce physician utilization of our products once approved and have a material adverse effect on our sales, results of operations and financial condition. Moreover, a payor's decision to provide coverage for a product does not imply that an adequate reimbursement rate will be approved. Adequate third-party reimbursement may not be available to enable us to maintain price levels sufficient to realize an appropriate return on our investment in product development. Additionally, coverage and reimbursement for new products can differ significantly from payor to payor. One third-party payor's decision to cover a particular product or service does not ensure that other payors will also provide coverage for the product or service or will provide coverage at an adequate reimbursement rate. As a result, the coverage determination process will require us to provide scientific and clinical support for the use of our products to each payor separately and will be a time-consuming process.

The marketability of any products for which we receive regulatory approval for commercial sale may suffer if the government and third-party payors fail to provide adequate coverage and reimbursement. In addition, an emphasis on cost containment measures in the United States has increased and we expect will continue to increase the pressure on pharmaceutical pricing. Third-party payors are increasingly challenging the prices charged for products and services, examining the medical necessity and reviewing the cost-effectiveness of drugs, medical devices and medical services, in addition to questioning safety and efficacy. If these third-party payors do not consider our products to be cost-effective compared to other available therapies, they may not cover our products after FDA approval or, if they do, the level of payment may not be sufficient to allow us to sell our products at a profit. 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 we receive regulatory approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

European Union

In Europe and many other foreign countries, the success of our drug candidates we may develop depends largely on obtaining and maintaining government reimbursement, because in many foreign countries patients are unlikely to use prescription pharmaceutical products that are not reimbursed by their governments. Negotiating reimbursement rates in foreign countries can delay the commercialization of a pharmaceutical product and generally results in a reimbursement rate that is lower than the net price that companies can obtain for the same product in the United States.

In some countries, such as Germany, commercial sales of a product can begin while the reimbursement rate that a company will receive in future periods is under discussion. In other countries, a company must complete the reimbursement discussions prior to the commencement of commercial sales of the pharmaceutical product. The requirements governing drug pricing vary widely from country to country. For example, the European Union provides options for its member states to restrict the range of drugs for which their national health insurance systems provide reimbursement and to control the prices of drugs for human use. A member state may approve a specific price for the drug or it may instead adopt a system of direct or indirect controls on the profitability of the company placing the drug on the market. Recently, many countries in the European Union have increased the number of discounts required on pharmaceuticals and these efforts could continue as countries attempt to manage healthcare expenditures, especially in light of the severe fiscal and debt crises experienced by many countries in the European Union. There can be no assurance that any country that has price controls or reimbursement limitations for pharmaceutical products will allow favorable reimbursement and pricing arrangements for any of our products, if approved in those countries.

Other Healthcare Laws and Compliance Requirements

In addition to FDA restrictions on marketing of pharmaceutical products, pharmaceutical companies also are subject to various federal and state laws pertaining to healthcare fraud and abuse, including anti-kickback laws and false claims laws, and the reporting of payments to physicians and teaching hospitals. In addition, we may be subject to patient privacy regulation by both the federal government and the states in which we conduct our business. If our operations are found to be in violation of any of such laws or any other governmental regulations that apply to us, we may be subject to penalties, including, without limitation, administrative, civil and criminal penalties, damages, fines, disgorgement, contractual damages, reputational harm, diminished profits and future earnings, the curtailment or restructuring of our operations, exclusion from participation in federal and state healthcare programs and individual imprisonment, any of which could adversely affect our ability to operate our business and our financial results.

In March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, collectively, ACA, was enacted, which includes measures that have significantly changed the way health care is financed by both governmental and private insurers. Among the provisions of ACA of greatest importance to the pharmaceutical industry are the following:

The Medicaid Drug Rebate Program requires pharmaceutical manufacturers to enter into and have in effect a national rebate agreement with the Secretary of the Department of Health and Human Services, a condition for states to receive federal matching funds for the manufacturer's outpatient drugs furnished to Medicaid patients. Effective in 2010, ACA made several changes to the Medicaid Drug Rebate Program, including increasing pharmaceutical manufacturers' rebate liability by raising the minimum basic Medicaid rebate on most branded prescription drugs and biologic products from 15.1% of average manufacturer price, or AMP, to 23.1% of AMP and adding a new rebate calculation for "line extensions" (i.e., new formulations, such as extended release formulations) of solid oral dosage forms of branded products, as well as potentially impacting their rebate liability by modifying the statutory definition of AMP. ACA also expanded the universe of Medicaid utilization subject to drug rebates by requiring pharmaceutical manufacturers to pay rebates on Medicaid managed care utilization as of 2010 and by expanding the population potentially eligible for Medicaid drug benefits. In addition, ACA provides for the public availability of retail survey prices and certain weighted average AMPs under the Medicaid program. The implementation of this requirement by the Centers for Medicare and Medicaid Services, or CMS, may also provide for the public availability of pharmacy acquisition of cost data, which could negatively impact our sales.

- In order for a pharmaceutical product to receive federal reimbursement under the Medicare Part B and Medicaid programs or to be sold directly to U.S. government agencies, the manufacturer must extend discounts to entities eligible to participate in the 340B drug pricing program. The required 340B discount on a given product is calculated based on the AMP and Medicaid rebate amounts reported by the manufacturer. Effective in 2010, ACA expanded the types of entities eligible to receive discounted 340B pricing, although, under the present state of the law, with the exception of children's hospitals, these newly eligible entities will not be eligible to receive discounted 340B pricing on orphan drugs when used for the orphan indication. In addition, as 340B drug pricing is determined based on AMP and Medicaid rebate data, the revisions to the Medicaid rebate formula and AMP definition described above could cause the required 340B discount to increase.

- Effective in 2011, ACA imposed a requirement on manufacturers of branded drugs and biologic products to provide a discount off the negotiated price of branded drugs dispensed to Medicare Part D patients in the coverage gap (i.e., "donut hole").
- Effective in 2011, ACA imposed an annual, nondeductible fee on any entity that manufactures or imports certain branded prescription drugs and biologic products, apportioned among these entities according to their market share in certain government healthcare programs, although this fee would not apply to sales of certain products approved exclusively for orphan indications.
- As part of efforts to further transparency of payments made by pharmaceutical companies to physicians, ACA required manufacturers to track certain financial arrangements with physicians and teaching hospitals, including any "transfer of value" made or distributed to such entities, as well as any investment interests held by physicians and their immediate family members. Manufacturers were required to begin reporting this information to CMS beginning in 2014. Annual reporting is required, and records of payments are publicly available for review on the CMS website.
- As of 2010, a new Patient-Centered Outcomes Research Institute was established pursuant to ACA to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research. The research conducted by the Patient-Centered Outcomes Research Institute may affect the market for certain pharmaceutical products.
- ACA created the Independent Payment Advisory Board, or IPAB, which has authority to recommend certain changes to the Medicare program to reduce expenditures by the program that could result in reduced payments for prescription drugs. However, the IPAB implementation has been not been clearly defined. ACA provided that under certain circumstances, IPAB recommendations will become law unless Congress enacts legislation that will achieve the same or greater Medicare cost savings.
- ACA established the Center for Medicare and Medicaid Innovation within CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug spending. Funding has been allocated to support the mission of the Center for Medicare and Medicaid Innovation from 2011 to 2019.

Anti-Kickback Laws

U.S. federal laws, including the federal Anti-Kickback Statute, prohibit fraud and abuse involving state and federal healthcare programs, such as Medicare and Medicaid. These laws are interpreted broadly and enforced aggressively by various federal agencies, including CMS, the Department of Justice, and the Office of Inspector General for the United States Department of Health and Human Services, or HHS, and various state agencies. These anti-kickback laws prohibit, among other things, any person from knowingly and willfully offering, paying, soliciting, receiving, or providing remuneration, directly or indirectly, in exchange for or to induce either the referral of an individual, or the furnishing, arranging for, or recommending of an item or service that is reimbursable, in whole or in part, by a federal healthcare program. Remuneration is broadly defined to include anything of value, such as cash payments, gifts or gift certificates, discounts, or the furnishing of services, supplies, or equipment. The Anti-Kickback Statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on the one hand and prescribers, purchasers and formulary managers on the other. The anti-kickback laws are broad and prohibit many arrangements and practices that are lawful in businesses outside of the healthcare industry. A person or entity need not have actual knowledge of the federal Anti-Kickback Statute or specific intent to violate it in order to have committed a violation.

The penalties for violating the anti-kickback laws can be severe. The sanctions include criminal and civil penalties, and possible exclusion from the federal healthcare programs. Many states have adopted laws similar to the federal anti-kickback laws, and some apply to items and services reimbursable by any payor, including third-party payors.

Federal and State Prohibitions on False Claims

The federal False Claims Act imposes liability on any person or entity that, among other things, knowingly presents, or causes to be presented, a false, fictitious or fraudulent claim for payment to, or approval by, the federal government or knowingly making, using, or causing to be made or used a false record or statement material to a false or fraudulent claim to the federal government. Under the False Claims Act, a person acts knowingly if he has actual knowledge of the information or acts in deliberate ignorance or in reckless disregard of the truth or falsity of the information. Although we would not submit claims directly to government payors, manufacturers can be held liable under the False Claims Act if they are deemed to "cause" the submission of false or fraudulent claims by, for example, providing inaccurate billing or coding information to customers or promoting a product off-label. In addition, our future activities relating to the reporting of wholesaler or estimated retail prices for our products, the reporting of prices used to calculate Medicaid rebate information and other information affecting federal, state, and third-party reimbursement for our products, and the sale and marketing of our products, are subject to scrutiny under this law.

Actions under the False Claims Act may be brought by the Attorney General or as a qui tam action by a private individual on behalf of the federal government who shares in any amounts paid by the defendant to the government in connection with the action. The number of filings under these provisions has increased significantly in recent years. Conduct that violates the False Claims Act may also lead to exclusion from the federal healthcare programs. Further, violations of the False Claims Act can result in very significant monetary penalties and treble damages. In addition, the civil monetary penalties statute imposes penalties against any person who is determined to have presented or caused to be presented a claim to a federal health program that the person knows or should know is for an item or service that was not provided as claimed or is false or fraudulent. Many states have enacted similar laws modeled after the False Claims Act that apply to items and services reimbursed under Medicaid and other state healthcare programs, and, in several states, such laws apply to claims submitted to all payors. Given the significant size of actual and potential settlements, it is expected that the government authorities will continue to devote substantial resources to investigating healthcare providers' and manufacturers' compliance with applicable fraud and abuse laws.

Federal Prohibitions on Healthcare Fraud and False Statements Related to Healthcare Matters

The federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, created new federal criminal statutes that prohibit, among other actions, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, including private third-party payors, knowingly and willfully embezzling or stealing from a healthcare benefit program, willfully obstructing a criminal investigation of a healthcare offense, and knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services. Similar to the U.S. federal Anti-Kickback Statute, ACA broadened the reach of certain criminal healthcare fraud statutes created under HIPAA by amending the intent requirement such that a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation.

Health Insurance Portability and Accountability Act

We may also be subject to data privacy and security regulation by both the federal government and the states in which we conduct our business. HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, or HITECH, and their respective implementing regulations, including the final omnibus rule published on January 26, 2013, impose specified requirements relating to the privacy, security and transmission of individually identifiable health information. Among other things, HITECH makes HIPAA's privacy and security standards directly applicable to "business associates," defined as independent contractors or agents of covered entities that create, receive, maintain or transmit protected health information in connection with providing a service for or on behalf of a covered entity. HITECH also increased the civil and criminal penalties that may be imposed against covered entities, business associates and possibly other persons, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorney's fees and costs associated with pursuing federal civil actions. In addition, state laws govern the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same requirements, thus complicating compliance efforts.

Furthermore, international laws, such as the EU Data Privacy Directive (95/46/EC) and Swiss Federal Act on Data Protection, regulate the processing of personal data within Europe and between European countries and the United States. Failure to provide adequate privacy protections and maintain compliance with safe harbor mechanisms could jeopardize business transactions across borders and result in significant penalties.

Physician Payments Sunshine Act

There has been a recent trend of increased federal and state regulation of payments made to physicians and other healthcare providers. The Physician Payments Sunshine Act requires most pharmaceutical manufacturers to report annually to the Secretary of HHS payments or "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. Over the next several years, we will need to dedicate significant resources to establish and maintain systems and processes in order to comply with these regulations. Failure to comply with the reporting requirements can result in significant civil monetary penalties of up to an aggregate of $150,000 per year and up to an aggregate of $1.0 million per year for "knowing failures." Covered manufacturers must submit reports concerning payments and ownership and investment interests for a calendar year by the 90th day of each subsequent calendar year. In addition, certain states require implementation of compliance programs and compliance with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government, impose restrictions on marketing practices, and/or tracking and reporting of gifts, compensation and other remuneration or items of value provided to physicians and other healthcare professionals and entities. Similar laws have been enacted or are under consideration in foreign jurisdictions, including France which has adopted the Loi Bertrand, or French Sunshine Act, which became effective in 2013, and Belgium which enacted their Sunshine Act in 2016.

Non-U.S. Healthcare Laws

To the extent that any of our product candidates, once approved, are sold in a foreign country, we may be subject to similar foreign laws and regulations, which may include, for instance, applicable post-marketing requirements, including safety surveillance, anti-fraud and abuse laws, and implementation of corporate compliance programs and reporting of payments or other transfers of value to healthcare professionals. In addition to U.S. regulations, we are subject to regulations of other countries governing clinical trials and distribution of our products outside of the United States. Regardless of FDA status for a product, we must obtain approval by the comparable regulatory authorities of countries outside of the U.S. before we can commence clinical trials in such countries. The approval process and requirements governing the conduct of clinical trials vary greatly from place to place, and the time may be longer or shorter than that required for FDA approval.

Healthcare Reform

A primary trend in the U.S. healthcare industry and elsewhere is cost containment. Government authorities and other third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medical products. By way of example, in the United States, the Medicare Prescription Drug Improvement and Modernization Act of 2003, or MMA, changed the way Medicare covers and pays for pharmaceutical products. The legislation expanded Medicare coverage for outpatient drug purchases by those covered by Medicare under a new Part D and introduced a new reimbursement methodology based on average sales prices for Medicare Part B physician-administered drugs. As a result of this legislation and the expansion of federal coverage of drug products, there is additional pressure to contain and reduce costs. While the MMA applies only to drug benefits for Medicare beneficiaries, private payors often follow Medicare coverage policy and payment limitations in setting their own reimbursement rates, and any reduction in reimbursement that results from the MMA may result in a similar reduction in payments from private payors. These cost reduction initiatives and other provisions of the MMA could decrease the coverage and reimbursement that we receive for any approved products and could seriously harm our business.

In addition, in March 2010, ACA was enacted, which, among other things, increased the minimum Medicaid rebates owed by most manufacturers under the Medicaid Drug Rebate Program, 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, extended the Medicaid Drug Rebate Program to utilization of prescriptions of individuals enrolled in Medicaid managed care plans, imposed mandatory discounts for certain Medicare Part D beneficiaries, and subjected drug manufacturers to new annual fees based on pharmaceutical companies' share of sales to federal healthcare programs.

On August 2, 2011, the Budget Control Act of 2011 created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This included aggregate reductions of Medicare payments to providers of 2% per fiscal year, which went into effect on April 1, 2013 and will stay in effect through 2025 unless additional Congressional action is taken. On January 2, 2013, the American Tax Payer Relief Act was signed into law, which, among other things, further reduced Medicare payments to several providers, including hospitals.

In January 2017, Congress voted to adopt a budget resolution for fiscal year 2017, that while not a law, is widely viewed as the first step toward the passage of legislation that would repeal certain aspects of the ACA. The 2017 Tax Reform Act includes a provision repealing the individual mandate, effective January 1, 2019. Further, on January 20, 2017, U.S. President Donald Trump signed an Executive Order directing 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 burden on states or a cost, fee, tax, penalty or regulatory burden on individuals, healthcare providers, health insurers, or manufacturers of pharmaceuticals or medical devices. On October 13, 2017, President Trump signed an Executive Order terminating the cost-sharing subsidies that reimburse the 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. Further, on June 14, 2018, the 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.

In July 2018, CMS published a final rule permitting further collections and payments to and from certain ACA qualified health plans and health insurance issuers under the ACA risk adjustment program in response to the outcome of federal district court litigation regarding the method CMS uses to determine this risk adjustment. In addition, CMS has recently published a final rule that would give states greater flexibility, starting in 2020, 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. On December 14, 2018, a U.S. District Court Judge in the Northern District of Texas, or the Texas District Court Judge, ruled that the individual mandate is a critical and inseverable feature of the Affordable Care Act, and therefore, because it was repealed as part of the Tax Cuts and Jobs Act of 2017, the remaining provisions of the Affordable Care Act are invalid as well. The

Trump Administration and CMS have both stated that the ruling will have no immediate effect, and on December 30, 2018 the Texas District Court Judge issued an order staying the judgment pending appeal.

Thus, there may be further action to repeal, replace, or modify the ACA. While any further legislative and regulatory changes will likely take time to develop and may or may not have an impact on the regulatory regime to which we are subject, we cannot predict the ultimate content, timing or effect of any healthcare reform legislation or the impact of potential legislation on us.

Employees

As of December 31, 2018, we had 165 full-time employees. Our employees are not represented by labor unions or covered by collective bargaining agreements. We consider our relationship with our employees to be good.

Facilities

We currently lease and occupy approximately 70,500 square feet of office and lab space in three separate facilities in South San Francisco, California. We lease 34,400 square feet of office space in South San Francisco, California under a lease that expires in January 2020. We lease an additional 14,000 square feet in South San Francisco, California. In October 2018, we entered into a 15-month lease for 22,100 of office space in South San Francisco, which we occupied in February 2019.

In September 2018, we entered into a lease agreement to serve as our single headquarters beginning early 2020 in Brisbane, California, encompassing 129,800 square feet of office and laboratory space.

Legal Proceedings

We are not a party to any material legal proceedings at this time. From time to time, we may be subject to various legal proceedings and claims that arise in the ordinary course of our business activities. Although the results of litigation and claims cannot be predicted with certainty, as of the date of this report, we do not believe we are party to any claim or litigation the outcome of which, if determined adversely to us, would individually or in the aggregate be reasonably expected to have a material adverse effect on our business. Regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors.

Corporate Information

We were incorporated in the state of Delaware in 2012. Our principal executive offices are located at 333 Allerton Avenue, South San Francisco, CA 94080, and our telephone number is (650) 741-0900. Our website address is *www.myokardia.com*. We do not incorporate the information on or accessible through our website into this Annual Report on Form 10-K, and you should not consider any information on, or that can be accessed through, our website a part of this Annual Report on Form 10-K.

We use various trademarks and trade names in our business, including without limitation our corporate name and logo. All other trademarks or trade names, including without limitation corporate names and logos, referred to in this report are the property of their respective owners. Solely for convenience, the trademarks and trade names in this report may be referred to without the ® and ™ symbols, but such references should not be construed as any indicator that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto.

We qualified as an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, as amended, or the JOBS Act, through December 31, 2018. As an emerging growth company, we took advantage of specified reduced disclosure and other requirements that are otherwise applicable generally to public companies.

Information About Segments and Geographic Areas

In accordance with The Financial Accounting Standards Board, or FASB, Accounting Standards Codification, or ASC, Topic 280, Segment Reporting, we have determined that we operate and manage our business as one reportable and operating segment. Decisions regarding our overall operating performance and allocation of our resources are assessed on a consolidated basis. Our operations and assets are predominantly located in the United States.

Available Information

We post our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and any exhibits or amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended,

on the Investors & Media section of our public website (www.myokardia.com, accessible to you free of charge,) as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. In addition, you can read our SEC filings over the Internet at the SEC's website at www.sec.gov. The contents of these websites are not incorporated into this Annual Report on Form 10-K. Further, our references to the URLs for these websites are intended to be inactive textual references only.

ITEM 1A. RISK FACTORS

You should consider carefully the following risk factors, together with all the other information in this report, including our consolidated financial statements and notes thereto, and in our other public filings with the SEC. The occurrence of any of the following risks could harm our business, financial condition, results of operations and/or growth prospects or cause our actual results to differ materially from those contained in forward-looking statements we have made in this report and those we may make from time to time. You should consider all of the risk factors described when evaluating our business.

Risks Related to Our Limited Operating History, Financial Condition and Capital Requirements

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. We were incorporated and commenced operations in June 2012. Our operations to date have been limited to organizing and staffing our company, business planning, raising capital, developing our technology, creating and expanding on our precision medicine platform, identifying potential product candidates, undertaking preclinical studies for our programs, completing our ongoing clinical trials for our most advanced product candidate, mavacamten, planning further clinical development of mavacamten and completing our ongoing clinical development of our second product candidate, MYK-491. We have not yet demonstrated our ability to successfully complete the clinical development of a product candidate, including the completion of any clinical trials designed to support the registration of a product candidate, obtain marketing approvals, manufacture a commercial scale medicine, or arrange for a third party to do so on our behalf, or conduct sales and marketing activities necessary for successful commercialization. Typically, it takes many years to develop a new medicine from the time it is discovered to when it is available for treating patients. 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 will need to transition from a company with a research and development focus to a company capable of supporting larger scale clinical development and commercial activities. If we are not successful in such a transition, our business, results and financial condition will be harmed.

We have a history of significant losses and may not achieve or sustain profitability and, as a result, you may lose all or part of your investment.

Our initial product candidates, mavacamten and MYK-491, are in various stages of clinical testing and we must successfully complete our ongoing clinical trials and conduct significant additional clinical trials for MYK-491 before we can seek the regulatory approvals necessary to begin commercial sales of these or any other product candidates we may develop. We have incurred operating losses in each year since our inception due to costs incurred in connection with our research and development activities and general and administrative costs associated with our operations. Our net loss for the years ended December 31, 2018 and 2017 was $67.7 million and $57.0 million, respectively. As of December 31, 2018, we had an accumulated deficit of $202.6 million. We expect to incur increasing losses for several years as we continue our research activities and conduct development of, and seek regulatory approvals for, our initial product candidates, and commercialize any approved drugs. If our product candidates fail in clinical trials or do not gain regulatory approval, or if our product candidates do not achieve market acceptance, we will not be profitable. If we fail to become and remain profitable, or if we are unable to fund our continuing losses, you could lose all or part of your investment.

We have never generated any revenue from product sales and may never be profitable.

Our ability to generate revenue and achieve profitability depends on our ability, alone or with strategic collaborators, to successfully complete the development of, and obtain the regulatory approvals necessary to commercialize, our product candidates. We do not anticipate generating revenues from product sales for the foreseeable future, if ever. Our ability to generate future revenue from product sales depends heavily on our success in:

- completing research and preclinical and clinical development of our product candidates;
- seeking and obtaining regulatory approvals to market product candidates for which we complete clinical trials;

- developing a sustainable, scalable, reproducible and transferable manufacturing process for our product candidates;
- establishing and maintaining supply and manufacturing relationships with third parties that can provide adequate (in amount and quality) products and services to support clinical development and the market demand, if any, for our product candidates, if approved;
- launching and commercializing product candidates for which we obtain regulatory approval, either through a collaboration or, if launched independently, by establishing a sales force, marketing and distribution infrastructure;
- obtaining market acceptance of our product candidates and the use of precision medicine as a viable treatment option for cardiovascular diseases;
- addressing any competing technological and market developments;
- implementing additional internal systems and infrastructure, as needed;
- identifying and validating new product candidates from our platform;
- maintaining, protecting and expanding our portfolio of intellectual property rights, including patents, trade secrets and know-how; and
- attracting, hiring and retaining qualified personnel who are suitable to our culture and mission.

Even if one or more of the product candidates that we are developing is approved for commercial sale, we anticipate incurring significant costs associated with commercializing any approved product candidate. Our expenses could increase beyond our expectations if we are required by the U.S. Food and Drug Administration (the "FDA"), the European Medicines Agency (the "EMA") or other regulatory agencies, domestic or foreign, to perform clinical trials and other studies in addition to those that we currently anticipate. Even if we are able to generate revenues from the sale of any approved products, we may not become profitable and may need to obtain additional funding to continue operations.

We will need to raise additional funding, which may not be available on acceptable terms, or at all. Failure to obtain this necessary capital when needed may force us to delay, limit or terminate our product development efforts or other operations.

We are currently advancing mavacamten and MYK-491, our initial product candidates, through clinical development, and conducting preclinical discovery and development activities in our other programs. Drug development is expensive, and we expect our research and development expenses to increase substantially in connection with our ongoing activities, particularly as we advance our product candidates in clinical trials.

As of December 31, 2018, our cash and cash equivalents, including short and long-term investments, totaled $394.8 million. We intend to use our cash and cash equivalents to fund the advancement of our mavacamten clinical development program, including our ongoing Phase 3 clinical trial in symptomatic oHCM patients, our ongoing Phase 2 trial in symptomatic nHCM patients and our planned additional clinical trials of mavacamten, the progression of MYK-491 through clinical proof-of-concept, our ongoing preclinical, discovery and research programs and the expansion of our platform, as well as for working capital and general corporate purposes. However, our operating plan may change as a result of many factors currently unknown to us, and we may need to seek additional funds sooner than planned, through public or private equity or debt financings, government or other third-party funding, marketing and distribution arrangements and other collaborations, strategic and licensing arrangements or a combination of these approaches. In any event, we will require additional capital to obtain regulatory approval for, and to commercialize, mavacamten, or any other product candidates we may identify and develop. Even if we believe we have sufficient funds for our current or future operating plans, we may seek additional capital if market conditions are favorable or if we have specific strategic considerations.

Our funding requirements and the timing of our need for additional capital are subject to change based on a number of factors, including:

- the rate of progress and the cost of our ongoing and planned clinical trials of mavacamten and MYK-491;
- the number of product candidates that we intend to develop using our precision medicine platform;

- the costs of research and preclinical studies to support the advancement of other product candidates into clinical development;
- the timing of, and costs involved in, seeking and obtaining approvals from the FDA and comparable foreign regulatory authorities, including the potential by the FDA or comparable regulatory authorities to require that we perform more studies than those that we currently expect;
- the costs of preparing to manufacture mavacamten on a commercial scale, and to manufacture MYK-491 for further clinical development;
- the costs of commercialization activities if mavacamten or any future product candidate is approved, including the formation of a sales force;
- the degree and rate of market acceptance of any products launched by us or our partners;
- the costs of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights;
- our need and ability to hire additional personnel;
- our ability to enter into additional collaboration, licensing, commercialization or other arrangements and the terms and timing of such arrangements; and
- the emergence of competing technologies or other adverse market developments.

Any additional fundraising efforts may divert our management from their day-to-day activities, which may adversely affect our ability to develop and commercialize our product candidates. In addition, we cannot guarantee that future financing will be available in sufficient amounts or on terms acceptable to us, if at all. Moreover, the terms of any financing may adversely affect the holdings or the rights of our stockholders and the issuance of additional securities, whether equity or debt, by us, or the possibility of such issuance, may cause the market price of our shares to decline. The sale of additional equity or convertible securities would dilute all of our stockholders. The incurrence of indebtedness would result in increased fixed payment obligations and we may be required to agree to certain restrictive covenants, such as limitations on our ability to incur additional debt, limitations on our ability to acquire, sell or license intellectual property rights and other operating restrictions that could adversely impact our ability to conduct our business. We could also be required to seek funds through arrangements with collaborative partners or otherwise at a different stage than otherwise would be desirable and we may be required to relinquish rights to some of our technologies or product candidates or otherwise agree to terms unfavorable to us, any of which may have a material adverse effect on our business, operating results and prospects.

If we are unable to obtain funding on a timely basis, we may be required to significantly curtail, delay or discontinue one or more of our research or development programs or the commercialization of any product candidates or be unable to expand our operations or otherwise capitalize on our business opportunities, as desired, which could materially and adversely affect our business, financial condition and results of operations.

Our reported financial results may be adversely affected by changes in accounting principles generally accepted in the U.S.

We prepare our financial statements in conformity with accounting principles generally accepted in the U.S. These accounting principles are subject to interpretation by the Financial Accounting Standards Board ("FASB") and the Securities and Exchange Commission ("SEC"). A change in these policies or interpretations could have a significant effect on our reported financial results, may retroactively affect previously reported results, could cause unexpected financial reporting fluctuations, and may require us to make costly changes to our operational processes and accounting systems. In May 2014, the FASB issued ASU 2014-09, Revenue from Contracts with Customers which supersedes nearly all existing U.S. GAAP revenue recognition guidance. The new standard and its amendments were effective January 1, 2018, and was implemented utilizing the full retrospective method, which requires revision of financial results for all periods presented. As a result, all consolidated results of operations and consolidated balance sheets were revised in the Company's Form 10-K for the years ended December 31, 2017 and 2016. See "Note 2 – Summary of Significant Accounting Policies" for additional discussion of the accounting changes.

Risks Related to Our Precision Medicine Platform and the Discovery and Development of Our Product Candidates

The precision medicine approach we are taking to discover and develop drugs for diseases of systolic or diastolic dysfunction is novel and may never lead to marketable products.

We have concentrated our therapeutic product research and development efforts on the application of precision medicine to the treatment of heritable cardiovascular diseases, and our future success depends on the successful development of products based on our precision medicine platform and the continued development of this platform. We believe we are the first company to apply precision medicine to the treatment of cardiovascular disease, and neither we nor any other company has received regulatory approval to market

therapeutics specifically targeting any form of heart failure or heritable cardiomyopathy. The scientific discoveries that form the basis for our efforts to discover and develop product candidates are novel, and the scientific evidence to support the feasibility of developing product candidates based on these discoveries is both preliminary and limited. If we do not successfully develop and commercialize product candidates based upon our technological approach, we will not become profitable and the value of our common stock may decline.

Further, our focus solely on precision medicine for the development of drugs for diseases of cardiac muscle contraction as opposed to multiple, more proven technologies for drug development increases the risks associated with the ownership of our common stock. If we are not successful in developing any product candidates using our precision medicine platform, we may be required to change the scope and direction of our product development activities. In that case, we may not be able to identify and implement successfully an alternative product development strategy, which would materially and adversely affect our business, financial condition and results of operations.

We depend heavily on the success of mavacamten and MYK-491, our initial product candidates. Other than mavacamten and MYK-491, all of our other programs are in discovery or preclinical development. Preclinical testing and clinical trials of our product candidates may not be successful. If we are unable to commercialize our product candidates or experience significant delays in doing so, our business will be materially harmed.

We have invested a significant portion of our efforts and financial resources in the identification of our initial product candidates, mavacamten for the treatment of hypertrophic cardiomyopathy ("HCM") and MYK-491 for the treatment of dilated cardiomyopathy ("DCM"). We are currently evaluating mavacamten and MYK-491 in clinical trials, and, if these product candidates fail to demonstrate safety or efficacy in their respective target indications to the satisfaction of the FDA or other comparable regulatory authorities, we will need to identify and rely on other product candidates or target indications, or both, for clinical development. All of our other programs are still in discovery or preclinical development. Our ability to generate revenue from product sales, which we do not expect will occur for years, if ever, will depend heavily on the successful development and eventual commercialization of mavacamten, MYK-491 or other product candidates that we may identify from our precision medicine platform.

The success of mavacamten, MYK-491 and any other product candidates that we discover and develop will depend on many factors, including the following:

- timely and successful initiation of, enrollment in, and completion of, clinical trials, including our Phase 2 and Phase 3 clinical trials of mavacamten in HCM, our Phase 2a clinical trial of MYK-491 in DCM and any additional clinical trials of these product candidates;
- achieving positive safety and efficacy data and desirable medicinal properties for our product candidates for the intended indications;
- our ability to receive, and the timing of receipt of, any marketing approvals from applicable regulatory authorities;
- establishing and maintaining manufacturing capabilities or making arrangements with third-party manufacturers for the manufacture of our product candidates for clinical trials and, if approved, for commercialization;
- obtaining and maintaining patent and trade secret protection and non-patent exclusivity for our product candidates;
- launching commercial sales of our products, if and when approved, whether alone or in collaboration with others;
- acceptance of our products, if and when approved, by patients, the medical community and third-party payors;
- effectively competing with other therapies;
- a continued acceptable safety profile of our products following approval; and
- enforcing and defending intellectual property rights and claims.

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 our product candidates, which would materially harm our business.

Preclinical and clinical drug development involves a lengthy and expensive process with an uncertain outcome, and observations and results from earlier studies and trials may not be applicable or predictive in future clinical trials.

Preclinical and clinical testing is expensive and can take many years to complete, and its outcome is inherently uncertain. Failure can occur at any time during the preclinical development or clinical trial process. The results of preclinical studies and early clinical trials of our product candidates may not be predictive of the results of later-stage clinical trials. For example, although our preclinical observations and data generated from our Phase 1 and Phase 2 clinical trials of mavacamten support our hypothesis that mavacamten has the potential to reduce cardiac muscle contractility and our belief that such data have demonstrated clinical proof of mechanism in both HCM patients and healthy volunteers, we have not completed placebo controlled clinical trials of mavacamten in larger populations using the current dosing strategy, inclusion/exclusion criteria, and endpoints of EXPLORER-HCM. In addition, our precision medicine platform is based on a translational medicine approach. Translational medicine, or the application of basic scientific findings to develop therapeutics that promote human health, is subject to a number of inherent risks. In particular, scientific hypotheses formed from preclinical or early clinical observations may prove to be incorrect, and the data generated in animal models or observed in limited patient populations may be of limited value, and may not be applicable in clinical trials conducted under the controlled conditions required by applicable regulatory requirements and our protocols. The initial clinical data from our Phase 1 and Phase 2 clinical trials of mavacamten, as well as our Phase 1 clinical trial of MYK-491, are preliminary in nature, and the clinical development of mavacamten and MYK-491 is not complete. Early positive data may not be repeated or observed in ongoing or future trials involving our product candidates. Product candidates in later stages of clinical trials may fail to show the desired safety and efficacy traits despite having progressed through preclinical studies and initial clinical trials. There is a high failure rate for drugs and biologics proceeding through clinical trials, particularly in the field of cardiovascular medicine. A number of companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in clinical development even after achieving promising results in earlier studies, and any such setbacks in our clinical development could have a material adverse effect on our business and operating results.

We may encounter substantial delays in our clinical trials or we may fail to demonstrate safety and efficacy to the satisfaction of applicable regulatory authorities.

Before obtaining marketing approval from regulatory authorities for the sale of our product candidates, we must conduct extensive clinical trials to demonstrate the safety and efficacy of the product candidates in humans. Clinical testing is expensive, time-consuming and uncertain as to outcome. We cannot guarantee that any clinical trials will be conducted as planned or completed on schedule, if at all. A failure of one or more clinical trials can occur at any stage of testing. We may experience delays in our ongoing clinical trials and we do not know whether planned clinical trials will begin on time, need to be redesigned, enroll patients on time or be completed on schedule, if at all. Additionally, although we believe that our precision medicine approach should eliminate the need for mavacamten to undergo the large outcomes-based studies that are often required for cardiovascular drugs as a condition to regulatory approval by the FDA or other regulatory authorities, regulatory authorities may nevertheless require us to conduct additional trials or generate additional data, including potential trials studying the interaction of our product candidates with other therapeutics commonly administered in the patient populations we are seeking to treat, which would increase the time and cost of our clinical development process. Furthermore, we will need to conduct larger clinical trials, and the FDA may subsequently require us to evaluate a larger number of patients than we presently anticipate, or to assess other endpoints besides those presently contemplated, in order to support regulatory approval.

Clinical trials can be delayed for a variety of reasons, including:

- delays in reaching a consensus with regulatory agencies on trial design;
- delays in reaching agreement on acceptable terms with prospective CROs and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and clinical trial sites;
- delays in obtaining required Institutional Review Board ("IRB") approval at each clinical trial site;
- delays in recruiting suitable patients to participate in our clinical trials;
- imposition of a clinical hold by regulatory agencies, including after an inspection of our clinical trial operations or trial sites;
- failure by our CROs, other third parties or us to adhere to clinical trial requirements;
- failure by us or our CROs or other third-party contractors to perform clinical trials in accordance with the FDA's good clinical practice ("GCP") requirements or applicable regulatory guidelines in other countries;
- delays in the testing, validation, manufacturing and delivery of our product candidates to the clinical sites;
- delays in having patients complete participation in a study or return for post-treatment follow-up;

- clinical trial sites deviating from a trial protocol or dropping out of a trial;
- clinical trial subjects failing to comply with the trial regimen or dropping out of a trial;
- adding new clinical trial sites;
- failure to manufacture or supply sufficient quantities of product candidates for use in clinical trials;
- occurrence of serious adverse events associated with the product candidate that are viewed to outweigh its potential benefits; or
- changes in regulatory requirements and guidance that require amending or submitting new clinical protocols.

We could encounter delays if a clinical trial is suspended or terminated by us, by the IRBs of the institutions in which such trials are being conducted, or suspension or termination is recommended by the Data Safety Monitoring Board for such trial or by the FDA or other regulatory authorities. Such authorities may impose such a suspension or termination due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols, inspection of the clinical trial operations or trial site by the FDA or other regulatory authorities resulting in the imposition of a clinical hold, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from using a drug, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical trial.

Moreover, principal investigators for our clinical trials may serve as scientific advisors or consultants to us from time to time and receive compensation in connection with such services. Under certain circumstances, we may be required to report some of these relationships to the FDA or other regulatory authorities. The FDA or other regulatory authorities may conclude that a financial relationship between us and a principal investigator has created a conflict of interest or otherwise affected interpretation of the study. The FDA or other regulatory authorities may therefore question the integrity of the data generated at the applicable clinical trial site and the utility of the clinical trial itself may be jeopardized. This could result in a delay in approval, or rejection, of our marketing applications by the FDA or other regulatory authorities, as the case may be, and may ultimately lead to the denial of marketing approval of one or more of our product candidates.

Any inability to successfully complete preclinical and clinical development could result in additional costs to us or impair our ability to generate revenues from product sales, regulatory and commercialization milestones and royalties. In addition, if we make manufacturing or formulation changes to our product candidates, we may need to conduct additional studies to bridge our modified product candidates to earlier versions. Clinical trial delays could also shorten any periods during which we may have the exclusive right to commercialize our product candidates or allow our competitors to bring products to market before we do, which could impair our ability to successfully commercialize our product candidates and may harm our business and results of operations. In addition, many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of our product candidates.

If the results of our clinical trials are inconclusive or if there are safety concerns or adverse events associated with our product candidates, we may:

- be delayed in obtaining marketing approval for our product candidates, if 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 restrictions on use or distribution of the drug;
- require safety warnings in the label and/or require risk management plan post-approval;
- be required to perform additional clinical trials to support approval or be subject to additional post-marketing testing requirements;
- have regulatory authorities withdraw their approval of the product or impose restrictions on its distribution in the form of a modified risk evaluation and mitigation strategy (“REMS”);
- be subject to the addition of labeling statements, such as warnings or contraindications;
- be sued; or
- experience damage to our reputation.

We may find it difficult to enroll patients in our clinical trials, which could delay or prevent clinical trials of our product candidates.

Identifying and qualifying patients to participate in clinical trials of our product candidates is critical to our success. The timing to commence and complete our clinical trials depends on the speed at which we can recruit patients to participate in testing our product candidates. If patients are unwilling to participate in our clinical trials because of a lack of familiarity with our approach to the treatment of cardiovascular diseases, negative publicity from adverse events in biotechnology or the fields of precision medicine or cardiovascular disease or for other reasons, including competitive clinical trials for similar patient populations, our timelines for recruiting patients, conducting clinical trials and obtaining regulatory approval of potential products may be delayed. These delays could result in increased costs, delays in advancing our product development, delays in testing the effectiveness of our technology or termination of our clinical trials altogether.

We may not be able to identify, recruit and enroll a sufficient number of patients, or those with required or desired characteristics to achieve diversity in a study, to complete our clinical trials in a timely manner. Patient enrollment is affected by factors including:

- severity of the disease under investigation;
- design of the clinical trial protocol;
- size and nature of the patient population;
- eligibility criteria for the clinical trial in question;
- perceived risks and benefits of the product candidate under study in relation to other available therapies, including any new drugs that may be approved for the indications we are investigating;
- proximity and availability of clinical trial sites for prospective patients;
- availability of competing therapies and clinical trials;
- efforts to facilitate timely enrollment in clinical trials;
- patient referral practices of physicians; and
- ability to monitor patients adequately during and after treatment.

In particular, each of the conditions in which we plan to evaluate our current product candidates is a rare genetic disorder or segmented patient population with limited patient pools from which to draw for clinical trials. To date, the HCM and DCM patient populations have not been extensively evaluated in clinical trials. As a result, enrollment in our ongoing and planned clinical trials is difficult to predict and may take longer or cost more than we anticipate.

We plan to seek initial marketing approval in the United States. We may not be able to initiate or continue clinical trials if we cannot enroll a sufficient number of eligible patients to participate in the clinical trials required by the FDA or other regulatory agencies. Our ability to successfully initiate, enroll and complete a clinical trial in any foreign country is subject to numerous risks unique to conducting business in foreign countries, including:

- difficulty in establishing or managing relationships with CROs and physicians;
- different standards for the conduct of clinical trials;
- our inability to locate qualified local consultants, physicians and partners; and
- the potential burden of complying with a variety of foreign laws, medical standards and regulatory requirements, including the regulation of pharmaceutical and biotechnology products and treatment.

If we have difficulty enrolling a sufficient number of patients to conduct our clinical trials as planned, we may need to delay, limit or terminate ongoing or planned clinical trials, any of which would have an adverse effect on our business.

We may not be successful in our efforts to identify or discover potential product candidates.

The success of our business depends primarily upon our ability to identify, develop and commercialize therapeutics for the treatment of genetic cardiovascular diseases based on our precision medicine approach. A key element of our strategy is to use our precision medicine platform to identify and study compounds that can be used to correct or offset the abnormal contraction caused by HCM and DCM. Our research programs may initially show promise in identifying potential product candidates, yet fail to yield product candidates for clinical development for a number of reasons, including:

- the research methodology used may not be successful in identifying appropriate biomarkers or potential product candidates;
- our initial hypotheses based on our preclinical or early clinical observations may not be supported by later clinical results;
- potential product candidates may, on further study, be shown to have harmful side effects or may have other characteristics that may make the products unmarketable or unlikely to receive marketing approval; or
- research programs to identify new product candidates require substantial technical, financial and human resources. We may choose to focus our efforts and resources on a potential product candidate that ultimately proves to be unsuccessful.

If we are unable to identify suitable compounds for preclinical and clinical development, we may be forced to abandon our development efforts for a research program or programs and we will not be able to obtain product revenues in future periods, which likely would result in significant harm to our financial position and adversely impact our stock price.

Any of our product candidates may cause adverse effects or have other properties that could delay or prevent their regulatory approval, limit the scope of any approved label or market acceptance or result in other significant negative consequences following marketing approval, if any.

Adverse events or other unintended side effects or safety signals caused by our product candidates could cause us, IRBs or ethics committees, clinical trial sites or regulatory authorities to interrupt, delay or halt clinical trials and could result in the denial of regulatory approval. For example, through additional studies, we may determine that although mavacamten has been shown to be specific to striated muscle, which includes both skeletal and cardiac muscle, and selective for cardiac muscle, it may target myosin in skeletal muscle, which could result in unintended adverse effects. We have observed adverse events in our clinical trials of mavacamten. Results of our ongoing and planned trials could reveal a high and unacceptable severity and prevalence of these or other adverse events in subjects treated with our product candidates. Additionally, if the adverse events we have observed are deemed to be unacceptable or other unacceptable side effects or safety signals are observed in any ongoing or subsequent preclinical studies or clinical trials of our product candidates, our trials could be suspended or terminated and the FDA or comparable foreign regulatory authorities could order us to cease further development of or deny approval of our product candidates for any or all targeted indications. Any adverse effects encountered in our preclinical studies or clinical trials, whether or not drug-related, could affect patient recruitment or the ability of enrolled patients to complete the trial or result in potential product liability claims. Additionally, adverse effects may represent safety signals that could influence the benefit-risk assessment for further development or commercialization of a product candidate and may warrant further clinical or nonclinical investigation, consultation with health authorities, changes to product labeling or guidelines for its safe use, or other scientific or regulatory actions. Any of these occurrences may harm our business, financial condition and prospects significantly.

Further, if any of our future products, if and when approved for commercial sale, cause serious or unexpected adverse events, a number of potentially significant negative consequences could result, including:

- regulatory authorities may withdraw their approval of the product or impose restrictions on its distribution in the form of a REMS or provide a medication guide outlining the risks of such side effects for distribution to patients;
- regulatory authorities may require the addition of labeling statements, such as warnings or contraindications;
- we may be required to change the way the product is administered or conduct additional clinical trials;
- we could be sued and held liable for harm caused to patients; or
- our reputation may suffer.

Any of these events could prevent us or our partners from achieving or maintaining market acceptance of the affected product and could substantially increase the costs of commercializing our future products and impair our ability to generate revenues from the commercialization of these products.

Risks Related to Government Regulation

We currently do not have regulatory approval to market any of our product candidates. The regulatory approval processes of the FDA and comparable foreign authorities are lengthy, time consuming and inherently unpredictable, and if we are ultimately unable to obtain regulatory approval for our product candidates, our business will be substantially harmed.

The time required to obtain approval by the FDA, EMA and comparable foreign authorities is unpredictable but typically takes many years following the commencement of clinical trials and depends upon numerous factors, including the substantial discretion of the regulatory authorities. In addition, approval policies, regulations, or the type and amount of clinical data necessary to gain approval may change during the course of a product candidate's clinical development and may vary among jurisdictions. We have not obtained regulatory approval for any product candidate and it is possible that none of our existing product candidates or any product candidates we may seek to develop in the future will ever obtain regulatory approval.

Our product candidates could fail to receive regulatory approval for many reasons, including the following:

- the FDA or comparable foreign regulatory authorities may disagree with the design or implementation of our clinical trials;
- we may be unable to demonstrate to the satisfaction of the FDA or comparable foreign regulatory authorities that a product candidate is safe and effective for its proposed indication;
- the results of clinical trials may not meet the level of statistical significance required by the FDA or comparable foreign regulatory authorities for approval;
- we may be unable to demonstrate that a product candidate's clinical and other benefits outweigh its safety risks;
- the FDA or comparable foreign regulatory authorities may disagree with our interpretation of data from preclinical studies or clinical trials;
- the data collected from clinical trials of our product candidates may not be sufficient to support the submission of a New Drug Application ("NDA") or other submission or to obtain regulatory approval in the United States or elsewhere;
- the FDA or comparable foreign regulatory authorities may find deficiencies with or fail to approve the manufacturing processes or facilities of third-party manufacturers with which we contract for clinical and commercial supplies; or
- the approval policies or regulations of the FDA or comparable foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval.

This lengthy approval process as well as the unpredictability of future clinical trial results may result in our failing to obtain regulatory approval to market mavacamten, MYK-491 or any other product candidate we may develop, which would significantly harm our business, results of operations and prospects.

In addition, even if we were to obtain approval, regulatory authorities may approve any of our product candidates for fewer or more limited indications than we request, may not approve the price we intend to charge for our products, may grant approval contingent on the performance of costly post-marketing clinical trials, or may approve a product candidate with a label that does not include the labeling claims necessary or desirable for the successful commercialization of that product candidate. Any of the foregoing scenarios could materially harm the commercial prospects for our product candidates.

Even if we complete the necessary preclinical studies and clinical trials, we cannot predict when or if we will obtain regulatory approval to commercialize a product candidate or the approval may be for a more limited indication than we expect.

We cannot commercialize a product until the appropriate regulatory authorities have reviewed and approved the product candidate. Even if our product candidates demonstrate safety and efficacy in clinical trials, the regulatory agencies may not complete their review processes in a timely manner, or we may not be able to obtain regulatory approval. Additional delays may result if an FDA Advisory Committee or other regulatory authority recommends non-approval or restrictions on approval. In addition, we may experience delays or rejections based upon additional government regulation from future legislation or administrative action, or changes in regulatory agency policy during the period of product development, clinical trials and the review process. Regulatory agencies also may approve a treatment candidate for fewer or more limited indications than requested or may grant approval subject to the performance of post-marketing studies. In addition, regulatory agencies may not approve the labeling claims that are necessary or desirable for the successful commercialization of our treatment candidates. If we are unable to obtain regulatory approval for our product candidates for use in the treatment of heritable cardiomyopathies, our business may suffer.

Failure to obtain marketing approval in international jurisdictions would prevent our products from being marketed in such jurisdictions.

In order to market and sell our products in the European Union and many other jurisdictions, we or our 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. 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 approved for sale in that country. We or these third parties 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, the failure to obtain approval in one jurisdiction may negatively impact our ability to obtain approval in other jurisdictions. We may not be able to file for marketing approvals, and even if we do, we may not obtain necessary approvals to commercialize our medicines in any market.

Even if we receive regulatory approval for any of our product candidates, we will be subject to ongoing obligations and continued regulatory review, which may result in significant additional expense. Additionally, our product candidates, if approved, could be subject to labeling and other restrictions and market withdrawal and we may be subject to penalties if we fail to comply with regulatory requirements or experience unanticipated problems with our products.

Any product candidate for which we obtain marketing approval, along with the manufacturing processes, post-approval clinical data, labeling, advertising and promotional activities for such product, will be subject to extensive and ongoing regulatory requirements and review by the FDA and other regulatory authorities. These requirements include submissions of safety and other post-marketing information and reports, registration and listing requirements, current Good Manufacturing Practice ("cGMP") requirements relating to quality control, quality assurance and corresponding maintenance of records and documents, and requirements regarding the distribution of samples to physicians and recordkeeping. For example, the holder of an approved NDA is obligated to monitor and report adverse events and any failure of a product to meet the specifications in the NDA. The holder of an approved NDA must also submit new or supplemental applications and obtain FDA approval for certain changes to the approved product, product labeling or manufacturing process.

In addition, product manufacturers and their facilities are subject to payment of user fees and continual review and periodic inspections by the FDA and other regulatory authorities for compliance with cGMP and adherence to commitments made in the NDA and other marketing authorizations.

Even if marketing approval of a product candidate is granted, the approval may be subject to limitations on the indicated uses for which the product may be marketed or to the conditions of approval, or contain requirements for costly post-marketing testing and surveillance to monitor the safety or efficacy of the medicine.

The FDA closely regulates the post-approval marketing and promotion of medicines to ensure that they are marketed only for the approved indications and in accordance with the provisions of the approved labeling. The FDA imposes stringent restrictions on manufacturers' communications regarding off-label use and if we do not market our medicines for their approved indications, we may be subject to enforcement action for off-label marketing.

In addition, later discovery of previously unknown problems with our medicines, manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in various negative consequences, including:

- restrictions on the labeling, marketing or manufacturing of the product;
- restrictions on distribution or use of the product;
- requirements to conduct post-marketing clinical trials or holds on ongoing or planned clinical trials;
- warning or untitled letters;
- withdrawal of the medicines from the market;
- refusal by the FDA or comparable foreign regulatory authorities to approve pending applications or supplements to approved applications that we submit;
- mandatory or voluntary recalls;
- fines, restitution or disgorgement of profits or revenue;

- suspension or withdrawal of marketing approvals;
- refusal to permit the import or export of our medicines;
- product seizure or detention; and
- injunctions or the imposition of civil or criminal penalties.

The FDA's policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. 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, which would adversely affect our business, prospects and ability to achieve or sustain profitability.

Any government investigation of alleged violations of law could require us to expend significant time and resources in response and could generate negative publicity. The occurrence of any event or penalty described above may inhibit our ability to commercialize our product candidates and generate revenues.

We may seek one or more special designations from regulatory authorities for our product candidates, including Breakthrough Therapy Designation, Fast Track Designation or Orphan Drug Designation. These designations may not lead to a faster development or regulatory review or approval process, and it does not increase the likelihood that our product candidates will receive marketing approval.

We may seek one or more special designations from regulatory authorities for our product candidates, including Breakthrough Therapy Designation, Fast Track Designation or Orphan Drug Designation.

A breakthrough therapy is defined as a product that is intended, 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 important endpoints, such as substantial treatment effects observed early in clinical development. For products that have been designated as breakthrough therapies, interaction and communication between the FDA and the sponsor of the trial can help to identify the most efficient path for clinical development while minimizing the number of patients placed in ineffective control regimens. Products designated as breakthrough therapies by the FDA can also be eligible for accelerated approval. If a product is intended for the treatment of a serious or life-threatening condition and the product demonstrates the potential to address unmet medical needs for this condition, the product sponsor may apply for Fast Track Designation.

The FDA has broad discretion whether or not to grant these designations, so even if we believe a particular product candidate is eligible for a particular designation, we cannot assure you that the FDA would decide to grant it. Accordingly, even if we believe one of our product candidates meets the criteria for a designation, the FDA may disagree and instead determine not to make such designation. In any event, the receipt of a particular designation for a product candidate may not result in a faster development process, review or approval compared to products considered for approval under conventional FDA procedures and does not assure ultimate approval by the FDA. In addition, even if one or more of our product candidates qualify as breakthrough therapies, the FDA may later decide that the products no longer meet the conditions for qualification and rescind the breakthrough designation. Further, the FDA may withdraw Fast Track Designation if it believes that the designation is no longer supported by data from a clinical development program.

Regulatory authorities in some jurisdictions, including the United States and Europe, may designate drugs for relatively small patient populations as orphan drugs. Under the Orphan Drug Act, the FDA may designate a drug as an orphan drug if it is a drug intended to treat a rare disease or condition, which is generally defined as a patient population of fewer than 200,000 individuals annually in the United States, or a patient population greater than 200,000 in the United States where there is no reasonable expectation that the cost of developing the drug will be recovered from sales in the United States. In the United States, Orphan Drug Designation entitles a party to incentives such as tax advantages and user-fee waivers. In April 2016, the FDA granted Orphan Drug Designation for mavacamten for use in the treatment of symptomatic obstructive HCM.

In addition, if a product that has Orphan Drug Designation subsequently receives the first approval for the disease for which it has such designation, the product is entitled to orphan drug exclusivity, which in the United States means that the FDA may not approve any other applications to market the same drug for the same indication for seven years, except in limited circumstances. The exclusivity granted under any Orphan Drug Designations that we have received or may receive may not effectively protect the product candidate from competition. Although we have received Orphan Drug Designation from the FDA for mavacamten for use in the treatment of symptomatic obstructive HCM, we may not be the first to obtain marketing approval of this drug for the orphan-designated indication due to the uncertainties associated with developing pharmaceutical products. In addition, exclusive marketing rights in the United States may be limited if we seek approval for an indication broader than the orphan-designated indication or may

be lost if the FDA later determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantities of the product to meet the needs of patients with the rare disease or condition. Further, even if we obtain orphan drug exclusivity, that exclusivity may not effectively protect the product from competition because different drugs with different active moieties can be approved for the same condition. Even after an orphan drug is approved, the FDA can subsequently approve another drug with the same active moiety for the same condition if the FDA concludes that the later drug is clinically superior, in that it is shown to be safer, more effective or makes a major contribution to patient care. Orphan Drug Designation neither shortens the development time or regulatory review time of a drug nor gives the drug any advantage in the regulatory review or approval process. Any inability to secure or maintain Orphan Drug Designation or the exclusivity benefits of this designation would have an adverse impact on our ability to develop and commercialize our product candidates.

Risks Related to Our Reliance on Third Parties

Since the inception of our collaboration arrangement with Sanofi in August of 2014 and through December 31, 2018 we have been substantially dependent upon Sanofi for the development and eventual commercialization of mavacamten, MYK-224, MYK-491 and any product candidates from our HCM-2 program. As a result of the termination of the arrangement, we may be unable to commercialize certain product candidates.

We have depended upon our license and collaboration agreement with Aventis Inc., a wholly-owned subsidiary of Sanofi S.A., which we refer to as the Collaboration Agreement, for financial and scientific resources related to the clinical development and commercialization of product candidates under our mavacamten, MYK-224, MYK-491 and HCM-2 programs and for the manufacturing of MYK-491. On December 31, 2018, Sanofi notified us that they intend to terminate the collaboration and as a result, reimbursement for our research and development collaboration on mavacamten and MYK-224 ends in the first half of 2019. In addition, Sanofi did not elect to continue with the MYK-491 and HCM-2 programs, and the collaboration with respect to such programs was deemed terminated as of December 31, 2018.

As a result of the termination, any or all of the following are likely to occur:

- the development of our product candidates subject to the Collaboration Agreement could be significantly delayed;
- our cash expenditures will increase significantly if it is necessary for us to hire additional employees and allocate internal resources to the development and commercialization of product candidates that were previously funded, or expected to be funded, by Sanofi;
- we will bear all of the risks and costs related to the further development and commercialization of product candidates that were previously the subject of the Collaboration Agreement;
- in order to fund further development and commercialization, we may need to seek out and establish alternative strategic collaborations with third-party partners, which may not be possible; or
- we may not be able to do so on terms which are acceptable to us, in which case it may be necessary for us to limit the size or scope of one or more of our programs or increase our expenditures and seek additional funding by other means.

Any of these events would have a material adverse effect on our results of operations and financial condition.

We expect to rely on third parties to conduct some or all aspects of our protocol development, research and preclinical and clinical testing, and these third parties may not perform satisfactorily.

We do not expect to independently conduct all aspects of our protocol development, research and preclinical and clinical testing. We currently rely, and expect to continue to rely, on third parties with respect to these items.

Any of these third parties may terminate their engagements with us at any time. If we need to enter into alternative arrangements, it could delay our product development activities. Our reliance on these third parties for research and development activities will reduce our control over these activities but will not relieve us of our responsibility to ensure compliance with all required regulations and study protocols. For product candidates that we develop and commercialize on our own, we will remain responsible for ensuring that each of our preclinical studies and clinical trials are conducted in accordance with the study plan and protocols. We and our third-party contractors and CROs are required to comply with GCP regulations, which are regulations and guidelines enforced by the FDA, the Competent Authorities of the Member States of the European Economic Area ("EEA"), and comparable foreign regulatory authorities for all products in clinical development. Regulatory authorities enforce these GCP requirements through periodic inspections of trial sponsors, principal investigators and trial sites. If we or any of our third-party contractors or CROs fail to comply with applicable GCP requirements, the clinical data generated in our clinical trials may be deemed unreliable and the FDA, EMA or comparable foreign regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. We cannot assure that upon inspection by a given regulatory authority, such regulatory authority will determine that any of our clinical trials complies with GCP regulations. In addition, our clinical trials must be conducted with product produced under cGMP regulations. Our failure to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process.

If these third parties do not successfully carry out their contractual duties, meet expected deadlines or conduct our studies in accordance with regulatory requirements or our stated study plans and protocols, we will be delayed in completing, or may not be able to complete, the preclinical and clinical studies required to support future Investigational New Drug Application (IND) submissions and approval of our product candidates. Any of these events could lead to clinical study delays or failure to obtain regulatory approval, or impact our ability to successfully commercialize future products. Some of these events could be the basis for FDA action, including injunction, request for voluntary recall, seizure or total or partial suspension of production.

We contract with third parties for the manufacture of our product candidates for preclinical and clinical testing and expect to continue to do so for commercialization. This reliance on third parties increases the risk that we will not have sufficient quantities of our product candidates or medicines or that such supply will not be available to us at an acceptable cost, which could delay, prevent or impair our development or commercialization efforts.

We do not have any manufacturing facilities. We currently rely, and expect to continue to rely, on third-party manufacturers for the manufacture of our product candidates for preclinical and clinical testing and for the commercial supply of any of these product candidates for which we or our collaborators obtain marketing approval. To date, we have obtained materials for mavacamten for our clinical trials from third-party manufacturers, and we intend to rely on third-party manufacturers for our planned Phase 2 and Phase 3 clinical development activities for mavacamten and for our Phase 2 clinical trials of MYK-491. Up until the collaboration agreement termination on December 31, 2018, we were relying on Sanofi for our MYK-491 supply. We do not have a long-term supply agreement with the third-party manufacturers, and we purchase our required drug supply on a purchase order basis. We may be unable to establish any agreements with third-party manufacturers or to do so on acceptable terms. We are currently transitioning the supply of MYK-491 away from Sanofi to another manufacturer and may encounter delays in doing so.

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

- the inability to negotiate or maintain manufacturing agreements with third parties under commercially reasonable terms;
- reduced control as a result of using third-party manufacturers for all aspects of manufacturing activities;
- reliance on the third party for regulatory compliance, quality assurance, and safety and pharmacovigilance reporting;
- the possible breach of the manufacturing agreement by the third party;
- the possible termination or nonrenewal of the agreement by the third party at a time that is costly or inconvenient for us; and
- disruptions to the operations of our third-party manufacturers or suppliers caused by conditions unrelated to our business or operations, including the bankruptcy of the manufacturer or supplier.

The facilities used by our contract manufacturers to manufacture any of our future products must be evaluated by the FDA pursuant to inspections that will be conducted after we submit an NDA to the FDA. We do not control the manufacturing process of, and are completely dependent on, our contract manufacturing partners for compliance with the cGMP regulation for manufacture of both active drug substances and finished drug products. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or others, they will not be able to secure and/or maintain regulatory approval for their manufacturing facilities or our marketing applications will not be approved. In addition, we have no control over the ability of our contract manufacturers to maintain adequate quality control, quality assurance and qualified personnel. If the FDA or a comparable foreign regulatory authority finds deficiencies with or does not approve these facilities for the manufacture of our product candidates or if it finds deficiencies or withdraws any such approval in the future, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop, obtain regulatory approval for or market our product candidates, if approved. 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 fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, license revocation, seizures or voluntary recalls of product candidates or medicines, operating restrictions and criminal prosecutions, any of which could significantly and adversely affect supplies of our medicines and harm our business and results of operations.

Any products that we may develop may compete with our other product candidates and products and the products of third parties 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.

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 a redundant supply of 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 our product candidates or medicines may adversely affect our future profit margins and our ability to commercialize any medicines that receive marketing approval on a timely and competitive basis.

Risks Related to Our Intellectual Property

If we are unable to obtain and maintain patent protection for our medicines and technology, or if the scope of the patent protection obtained is not sufficiently broad, our competitors could develop and commercialize medicines and technology similar or identical to ours, and our ability to successfully commercialize our medicines and technology may be adversely affected.

Our commercial success will depend, in part, on our ability to obtain and maintain patent protection in the United States and other countries with respect to our proprietary products and technology. We seek to protect our proprietary position by filing patent applications in the United States and abroad related to our novel technologies and medicines that are important to our business, by pursuing the grant of patents from those applications around the world, and by taking steps to defend those patents if challenged by third parties. It is not uncommon in the pharmaceutical industry for patents covering successful drugs to be challenged for invalidity by third parties before or after grant of such patents by a patent office (e.g., by a pre- or post-grant proceeding in a patent office or a court action). To date, we own three issued United States patents that cover our proprietary technology or product candidates. We cannot be certain that we will secure any additional rights to any issued patents with claims that cover any of our proprietary technology or product candidates.

The patent prosecution process is expensive and time-consuming, and we may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. It is also possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection on or due to the public disclosures of others or ourselves. Although we enter into non-disclosure and confidentiality agreements with parties who have access to patentable aspects of our research and development output, such as our employees, corporate collaborators, outside scientific collaborators, CROs, contract manufacturers, consultants, advisors and other third parties, any of these parties may breach the agreements and disclose such output before a patent application is filed, thereby jeopardizing our ability to seek patent protection.

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 some of our technology and medicines, we also rely on trade secrets, including unpatented know-how, technology and other proprietary information, to maintain our competitive position. With respect to our proprietary scientific insights, screening assays and manufacturing processes, we consider trade secrets and know-how to be our primary intellectual property. Trade secrets and know-how can be difficult to protect. In particular, we anticipate that with respect to our precision medicine platform, these trade secrets and know-how will over time be acquired within the industry through independent development, the publication of journal articles describing methodologies and insights, and the movement of personnel skilled in the art into the pharmaceutical and biotechnology industry.

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, CROs, 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. 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, and discovery to aid in proving trade secret misappropriation may limited in many foreign countries. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor or other third party, we may have no right to prevent them 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 or other third party, our competitive position could be harmed.

Third-party claims of intellectual property infringement may prevent or delay our development and commercialization efforts.

Our commercial success depends in part on our avoiding infringement of the patents and proprietary rights of third parties. There is a substantial amount of litigation, both within and outside the United States, involving patent and other intellectual property rights in the biotechnology and pharmaceutical industries, including court actions for patent infringement or nullification, pre- and post-grant proceedings before the U.S. Patent and Trademark Office, and corresponding proceedings in foreign patent offices. Numerous U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in the fields in which we are pursuing development candidates. As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that our product candidates may be subject to claims of infringement of the patent rights of third parties.

Third parties may assert that we are employing their proprietary technology without authorization. There may be third-party patents or patent applications with claims to materials, formulations, methods of manufacture or methods for treatment related to the use or manufacture of our product candidates. Because patent applications can take many years to issue, there may be currently pending patent applications which may later result in issued patents that our product candidates may infringe. In addition, third parties may obtain patents in the future and claim that use of our technologies infringes upon these patents. If any third-party patents were held by a court of competent jurisdiction to cover the manufacturing process of any of our product candidates, any molecules formed during the manufacturing process or any final product itself, the holders of any such patents may be able to block or delay our ability to commercialize such product candidate unless we obtained a license under the applicable patents, or until such patents expire.

Parties making claims against us may also obtain injunctive or other equitable relief, which could effectively block or delay our ability to further develop and commercialize one or more of our product candidates. Defense of these claims, regardless of their merit, could involve substantial litigation expense and could be a substantial diversion of employee resources from our business. In the event of a successful claim of infringement against us, we may be required to take a number of steps, including but not limited to, paying substantial damages, including treble damages and attorneys' fees for willful infringement, paying lost profits or royalties, redesigning our infringing products or manufacturing process, obtaining one or more licenses from third parties for activities going forward, which may be impossible or require substantial time and monetary expenditure.

Parties making claims against us may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. In addition, any uncertainties resulting from the initiation and continuation of any litigation could have material adverse effect on our ability to raise additional funds or otherwise have a material adverse effect on our business, results of operations, financial condition and prospects.

We may be involved in lawsuits to protect or enforce our patents or the patents of our licensors, which could be expensive, time-consuming and unsuccessful.

Competitors may infringe our patents or the patents of our licensors. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time-consuming. In addition, in an infringement proceeding, a court may decide that a patent of ours or our licensors is not valid, is unenforceable and/or is not infringed, or may refuse to stop the other party from using the technology at issue for many reasons, including but not limited to, a determination that our patents do not cover the technology in question. Interference proceedings provoked by third parties or brought by us may be necessary to determine the priority of inventions with respect to our patents or patent applications or those of our licensors or collaborators. An adverse result in any litigation or patent office proceeding could put one or more of our patents at risk, for example, of being invalidated, deemed unenforceable or interpreted narrowly or could put our patent applications at risk of not issuing.

An unfavorable outcome could require us to cease using a technology or to attempt to license rights to it from the prevailing party. Our business could be harmed if the prevailing party does not offer us a license on commercially reasonable terms. Our defense of our patents and patent applications may fail and, even if successful, may result in substantial costs and distract our management and other employees. We may not be able to prevent, alone or with our licensors, misappropriation of our intellectual property rights, particularly in countries where the laws may not protect those rights as fully as in the United States.

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 could be compromised by disclosure during this type of litigation. There could also be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, these perceptions could have a material adverse effect on the price of our common stock.

We may be subject to claims challenging the inventorship or ownership of our patents and other intellectual property.

We may also be subject to claims that third parties, including but not limited to, former employees and collaborators, have an ownership interest in our patents or other intellectual property. In the future, we may have ownership disputes arising, for example, from conflicting obligations of consultants or others who are involved in developing our product candidates. Litigation may be necessary to defend against these and other claims challenging inventorship or ownership. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as the exclusive ownership of, or the right to use, valuable intellectual property. Such an outcome could have a material adverse effect on our business. Even if we are successful in defending against such claims, litigation or arbitration could result in substantial costs and be a distraction to management and other employees.

Issued patents covering our product candidates could be found invalid or unenforceable if challenged in court.

If we or one of our licensing partners initiated legal proceedings against a third party to enforce a patent covering one of our product candidates or the use or manufacture thereof, the defendant could counterclaim that the patent covering our product candidate is invalid and/or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity and/or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including utility, written description, novelty, non-obviousness or enablement. Additionally, in the United States, a patent can be deemed unenforceable if someone connected with the prosecution of a patent application intentionally withheld materially relevant information from the U.S. Patent and Trademark Office (USPTO), or intentionally mislead the USPTO during prosecution. Third party challenges to the validity and/or enforceability of a patent can occur in courts in the United States or abroad, or in pre- or post-grant proceedings in some foreign patent offices (e.g., but not limited to re-examination, post grant review, inter parties review, or opposition proceedings). Such proceedings could result in revocation or amendment to our patents in such a way that they no longer cover our product candidates. The outcome following legal assertions of invalidity and unenforceability is unpredictable. With respect to the validity question, for example, we cannot be certain that there is no invalidating prior art, of which we and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability of one of our patents for a product candidate, this could substantially affect our ability to protect that product candidate in the country in which the patent issued. Such a loss of patent protection could have a material adverse impact on our business.

We may be subject to claims that our employees, consultants or independent contractors have wrongfully used or disclosed confidential information of third parties or that our employees have wrongfully used or disclosed alleged trade secrets of their former employers.

As is common in the biotechnology and pharmaceutical industry, we employ individuals who were previously employed at universities or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees, consultants and independent contractors do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or our employees, consultants or independent contractors have inadvertently or otherwise used or disclosed intellectual property, including trade secrets or other proprietary information, of any of our employee's former employer or other third parties. Litigation may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages and suffering reputational harm, we may lose valuable intellectual property rights or personnel, which could adversely impact our business. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

Risks Related to Commercialization and the Market for Our Product Candidates

If the market opportunities for our product candidates are smaller than we believe they are or if we are unable to market our products to expanded patient populations, our revenues may be adversely affected and our business may suffer.

We focus our research and product development efforts on treatments for cardiac muscle contraction and our targeted indications are rare genetic diseases. In particular, we estimate that approximately 630,000 people in the United States have a form of HCM, and that approximately 360,000 people in the United States have a form of genetic DCM. Our projections of both the number of people who have these diseases, as well as the subset of people with these diseases who have the potential to benefit from treatment with our product candidates, are based on estimates derived from primary research with physicians and payors, analysis of medical journals and peer-reviewed literature, the work of third-party consultants and other publicly- or non-publicly-available data sources. These estimates may prove to be incorrect and new studies may change the estimated incidence or prevalence of our targeted disease indications. The number of patients in the United States, Europe and elsewhere may turn out to be lower than expected, may not be otherwise amenable to treatment with our products, and new patients may become increasingly difficult to identify or gain access to, all of which would adversely affect our results of operations and our business.

Additionally, because the target patient populations of our product candidates are small, we must be able to successfully identify patients and achieve a significant market share to achieve or maintain profitability and growth. .

Even if any of our product candidates receive marketing approval, they may fail to achieve the degree of market acceptance by physicians, patients, healthcare payors and others in the medical community necessary for commercial success.

If any of our product candidates receive marketing approval, they may nonetheless fail to gain sufficient market acceptance by physicians, patients, healthcare payors and others in the medical community. For example, current cardiovascular disease treatments such as beta blockers, non-dihydropyridine calcium channel blockers and disopyramide are well-established in the medical community, and doctors may continue to rely on these treatments. If our product candidates do not achieve an adequate level of acceptance, we may not generate significant product revenues and we may not become profitable. The degree of market acceptance of our product candidates, if approved for commercial sale, will depend on a number of factors, including:

- efficacy and potential advantages compared to alternative treatments;
- the ability to offer our medicines for sale at competitive prices;
- convenience and ease of administration compared to alternative treatments;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the strength of marketing and distribution support;
- sufficient third-party coverage or reimbursement; and
- the prevalence and severity of any side effects.

Any failure to achieve or maintain sufficient market acceptance of mavacamten, MYK-491 or any of our other product candidates, if approved, could significantly harm our business, prospects, financial condition and results of operations.

If we are unable to establish sales and marketing capabilities or enter into agreements with third parties to market and sell our product candidates, we may be unable to generate any revenues.

We have no experience marketing or selling our product candidates. To successfully commercialize any products that may result from our development programs, we will need to develop these capabilities, either on our own or with others. We may enter into collaborations with other entities to utilize their mature marketing and distribution capabilities, but we may be unable to enter into marketing agreements on favorable terms, if at all. If our future collaborations do not commit sufficient resources to commercialize our future products, if any, and we are unable to develop the necessary marketing capabilities on our own, we will be unable to generate sufficient product revenue to sustain our business. We will be competing with many companies that currently have extensive and well-funded marketing and sales operations. Without an internal team or the support of a third party to perform marketing and sales functions, we may be unable to compete successfully against these more established companies.

The insurance coverage and reimbursement status of newly-approved products targeting small patient populations is uncertain. Failure to obtain or maintain adequate coverage and reimbursement for our product candidates, if approved, could limit our ability to market those products and decrease our ability to generate revenue.

The availability and extent of reimbursement by governmental and private payors is essential for most patients to be able to afford expensive treatments, such as endothelin receptor antagonists used in the treatment of certain cardiovascular diseases. Sales of our product candidates will depend substantially, both domestically and abroad, on the extent to which the costs of our product candidates will be paid by health maintenance, managed care, pharmacy benefit and similar healthcare management organizations, or reimbursed by government health administration authorities, private health coverage insurers and other third-party payors. Additionally, therapies directed at small patient populations, such as our product candidates, may be more expensive, and reimbursement options for these therapies may be more limited. If reimbursement or coverage is not available, or is available only to limited levels, we may not be able to successfully commercialize our product candidates. Even if coverage is provided, the approved reimbursement amount may not be high enough to allow us to establish or maintain pricing sufficient to realize a sufficient return on our investment.

There is significant uncertainty related to the insurance coverage and reimbursement of newly approved products and for products whose targeted patient populations are small. In the United States, the principal decisions about reimbursement for new medicines are typically made by the Centers for Medicare & Medicaid Services (“CMS”), an agency within the U.S. Department of Health and Human Services, as CMS decides whether and to what extent a new medicine will be covered and reimbursed under Medicare. Private payors tend to follow CMS to a substantial degree. It is difficult to predict what CMS or third-party payors will decide with respect to reimbursement and coverage for fundamentally novel products such as ours, as there is no body of established practices and precedents for these new products. Reimbursement agencies in Europe may be more conservative than CMS.

Outside the United States, international operations are generally subject to extensive governmental price controls and other market regulations, and we believe the increasing emphasis on cost-containment initiatives in Europe, Canada, and other countries may put pressure on the pricing and usage of our product candidates. In many countries, the prices of medical products are subject to varying price control mechanisms as part of national health systems. In general, the prices of medicines under such systems are substantially lower than in the United States. Other countries allow companies to fix their own prices for medicines but monitor and control company profits. Additional foreign price controls or other changes in pricing regulation could restrict the amount that we are able to charge for our product candidates. Accordingly, in markets outside the United States, the reimbursement for our products may be reduced compared with the United States and may be insufficient to generate commercially reasonable revenues and profits.

Moreover, increasing efforts by governmental and third-party payors, in the United States and abroad, to cap or reduce healthcare costs may cause such organizations to limit both coverage and the level of reimbursement for new products approved and, as a result, they may not cover or provide adequate payment for our product candidates. We expect to experience pricing pressures in connection with the sale of any of our product candidates, due to the trend toward managed healthcare, the increasing influence of health maintenance organizations and additional legislative changes. The downward pressure on healthcare costs in general, particularly prescription drugs and surgical procedures and other treatments, has become very intense. As a result, increasingly high barriers are being erected to the entry of new products.

Risks Related to Our Business and Industry

We may be subject to healthcare, health information privacy and security laws, regulation and enforcement, and our failure to comply with these laws could harm our results of operations and financial conditions.

Although we do not currently have any products on the market, if we obtain FDA approval for any of our product candidates and begin commercializing those products in the United States, our operations may be directly, or indirectly through our customers and third-party payors, subject to various U.S. federal and state fraud and abuse, patient privacy laws and other healthcare regulatory laws, and to additional healthcare, statutory and regulatory requirements and enforcement by foreign regulatory authorities in jurisdictions in which we conduct our business. Healthcare providers, physicians and others play a primary role in the recommendation and prescription of any products for which we obtain marketing approval. These laws may impact, among other things, our proposed sales, marketing and education programs and constrain the business of financial arrangements and relationships with healthcare providers, physicians and other parties through which we market, sell and distribute our products for which we obtain marketing approval. The laws that may affect our ability to operate include:

- the U.S. federal Anti-Kickback Statute, which prohibits, among other things, persons or entities from knowingly and willfully soliciting, offering, receiving or paying any remuneration (including any kickback, bribe, or certain rebate), directly or indirectly, overtly or covertly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, lease, order or recommendation of, any good, facility, item or service, for which payment may be made, in whole or in part, under U.S. federal and state healthcare programs such as Medicare and Medicaid. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;
- the U.S. federal False Claims Act, which imposes civil penalties, including through civil whistleblower or qui tam actions, against individuals or entities for knowingly presenting, or causing to be presented, to the U.S. federal government, claims for payment or approval that are false or fraudulent or from knowingly making a false statement to avoid, decrease or conceal an obligation to pay money to the U.S. federal government. In addition, the government may assert that a claim including items and services resulting from a violation of the U.S. federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act;
- the U.S. federal Health Insurance Portability and Accountability Act of 1996 ("HIPAA") which imposes criminal and civil liability for knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, or 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, healthcare benefits, items or services; similar to the U.S. federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009 ("HITECH") and its implementing regulations, and as amended again by the final HIPAA omnibus rule, Modifications to the HIPAA Privacy, Security, Enforcement and Breach Notification Rules Under HITECH and the Genetic Information Nondiscrimination Act; Other Modifications to the HIPAA Rules, published in January 2013, which imposes certain obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information without appropriate authorization on covered entities subject to the rule, such as health plans, healthcare clearinghouses and healthcare providers as well as their business associates that perform certain services involving the use or disclosure of individually identifiable health information;

- the U. S. Federal Food, Drug, and Cosmetic Act ("FDCA") which prohibits, among other things, the adulteration or misbranding of drugs, biologics and medical devices;
- the U. S. legislation commonly referred to as the Physician Payments Sunshine Act, enacted as part of the ACA and its implementing regulations, which requires certain manufacturers of drugs, devices, biologics and medical supplies that are reimbursable under Medicare, Medicaid, or the Children's Health Insurance Program to report annually to CMS, information related to payments and other transfers of value to physicians and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members;
- Federal consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm consumers;
- analogous state laws and regulations, including: state anti-kickback and false claims laws, which may apply to our business practices, including but not limited to, research, distribution, sales and marketing arrangements and claims involving healthcare items or services reimbursed by any third-party payor, including private insurers; state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the U.S. federal government, or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; and state laws and regulations that require drug manufacturers to file reports relating to pricing and marketing information, which requires tracking gifts and other remuneration and items of value provided to healthcare professionals and entities, and state 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; and
- European and other foreign law equivalents of each of the laws, including reporting requirements detailing interactions with and payments to healthcare providers.

In addition, regulators globally are also imposing greater monetary fines for privacy violations. For example, in 2016, the European Union adopted a new regulation governing data practices and privacy called the General Data Protection Regulation, or GDPR, which became effective on May 25, 2018. The GDPR applies to any company established in the European Union as well as to those outside the European Union if they collect and use personal data in connection with the offering goods or services to individuals in the European Union or the monitoring of their behavior. The GDPR enhances data protection obligations for processors and controllers of personal data, including, for example, special protections for "sensitive information" such as health and genetic information, expanded disclosures about how personal information is to be used, limitations on retention of information, mandatory data breach notification requirements and onerous new obligations on service providers. Non-compliance with the GDPR may result in monetary penalties of up to €20 million or 4% of worldwide revenue, whichever is higher. The GDPR and other changes in laws or regulations associated with the enhanced protection of certain types of personal data, such as healthcare data or other sensitive information, could greatly increase our cost of developing or commercializing our product candidates or impair our ability to collect data from patients resident in the European Union.

Efforts to ensure that our business arrangements with third parties will comply with applicable healthcare laws and regulations will 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 the laws described above or any other governmental laws and regulations that may apply to us, we may be subject to significant penalties, including civil, criminal and administrative penalties, damages, fines, exclusion from U.S. government funded healthcare programs, such as Medicare and Medicaid, and the curtailment or restructuring of our operations. If any of the physicians or other providers or entities with whom we expect to do business is found not to be in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs and imprisonment. If any of the above occur, it could adversely affect our ability to operate our business and our results of operations.

We face significant competition from other biotechnology and pharmaceutical companies, and our operating results will suffer if we fail to compete effectively.

Our competitors may develop drugs that are less expensive, safer, or more effective, which may diminish or eliminate the commercial success of any drugs that we may commercialize.

Our competitors may:

- develop drug candidates and market drugs that are less expensive or more effective than our future drugs;
- commercialize competing drugs before we or our partners can launch any drugs developed from our drug candidates;

- initiate or withstand substantial price competition more successfully than we can;
- have greater success in recruiting skilled scientific workers from the limited pool of available talent;
- more effectively negotiate third-party licenses and strategic collaborations; and
- take advantage of acquisition or other opportunities more readily than we can.

We will compete for market share against large pharmaceutical and biotechnology companies and smaller companies that are collaborating with larger pharmaceutical companies, new companies, academic institutions, government agencies and other public and private research organizations. Many of these competitors, either alone or together with their partners, may develop new drug candidates that will compete with ours, as these competitors may, and in certain cases do, operate larger research and development programs or have substantially greater financial resources than we do. Our competitors may also have significantly greater experience in:

- developing product candidates;
- undertaking preclinical testing and clinical trials;
- building relationships with key customers and opinion-leading physicians;
- obtaining and maintaining FDA and other regulatory approvals of product candidates;
- formulating and manufacturing drugs; and
- launching, marketing and selling drugs.

If our competitors market drugs that are less expensive, safer or more effective than our potential drugs, or that reach the market sooner than our potential drugs, we may not achieve commercial success. In addition, the life sciences industry is characterized by rapid technological change. Because our research approach integrates many technologies, it may be difficult for us to stay abreast of the rapid changes in each technology. If we fail to stay at the forefront of technological change, we may be unable to compete effectively. Our competitors may render our technologies obsolete by advances in existing technological approaches or the development of new or different approaches, potentially eliminating the advantages in our drug discovery process that we believe we derive from our research approach and proprietary technologies.

Public opinion and heightened regulatory scrutiny of precision medicine for the treatment of cardiovascular disease may impact public perception of our product candidates or adversely affect our ability to conduct our business or obtain regulatory approvals for our product candidates.

Precision medicine remains a novel technology, particularly in the field of cardiovascular disease, with no products approved to date in the United States that are specifically targeted at correcting the underlying biomechanical defects in cardiac contractility associated with HCM and DCM. Public perception may be influenced by claims that these therapies are unproven or unsafe, and our product candidates may not gain the acceptance of the public or the medical community. In particular, our success will depend upon physicians, who specialize in the treatment of those diseases that our product candidates target, prescribing treatments that involve the use of our product candidates in lieu of, or in addition to, existing treatments they are already familiar with and for which greater clinical data may be available. More restrictive government regulations or negative public opinion could have an adverse effect on our business or financial condition and may delay or impair the development and commercialization of our product candidates or demand for any products we may develop. Adverse events in our clinical trials, even if not ultimately attributable to our product candidates, and the resulting publicity, could result in increased governmental regulation, unfavorable public perception, potential regulatory delays in the testing or approval of our product candidates, stricter labeling requirements for those product candidates that are approved and a decrease in demand for any such product candidates.

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

In the United States, the EU, and other foreign jurisdictions, there have been a number of legislative and regulatory changes to the healthcare system that could affect our future results of operations. In particular, there have been and continue to be a number of initiatives at the United States federal and state levels that seek to reduce healthcare costs and improve the quality of healthcare. For example, ACA changes the way healthcare is financed by both governmental and private insurers and significantly impacts the U.S. pharmaceutical and biotechnology industries. ACA, among other things, subjects biologic products to potential competition by lower-cost biosimilars, addresses 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, increases the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program and extends the rebate program to individuals enrolled in Medicaid managed care organizations, establishes annual fees and taxes on manufacturers of certain branded prescription drugs and biologic products, and a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D. The required discount was increased to 70% on January 1, 2019 pursuant to subsequent legislation.

The new presidential administration has indicated that enacting change to the ACA is a legislative priority and has alternatively discussed repealing and replacing the ACA. In January 2017, Congress voted to adopt a budget resolution for fiscal year 2017, that while not a law, is widely viewed as the first step toward the passage of legislation that would repeal certain aspects of the ACA. The 2017 Tax Reform Act includes a provision repealing the individual mandate, effective January 1, 2019. Further, on January 20, 2017, U.S. President Donald Trump signed an Executive Order directing 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 burden on states or a cost, fee, tax, penalty or regulatory burden on individuals, healthcare providers, health insurers, or manufacturers of pharmaceuticals or medical devices. On October 13, 2017, President Trump signed an Executive Order terminating the cost-sharing subsidies that reimburse the 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. Further, on June 14, 2018, the 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.

In July 2018, the Centers for Medicare and Medicaid Services, or CMS, published a final rule permitting further collections and payments to and from certain ACA qualified health plans and health insurance issuers under the ACA risk adjustment program in response to the outcome of federal district court litigation regarding the method CMS uses to determine this risk adjustment. In addition, CMS has recently published a final rule that would give states greater flexibility, starting in 2020, 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.

Since its enactment, some of the provisions of the ACA have yet to be fully implemented, while certain provisions have been subject to judicial, congressional, or executive challenges. As a result, there have been delays in the implementation of, and action taken to repeal or replace, certain aspects of the ACA. The U.S. Supreme Court has upheld certain key aspects of the legislation, including a tax-based shared responsibility payment imposed on certain individuals who fail to maintain qualifying health coverage for all or part of a year or pay a penalty, which is commonly known as the "individual mandate." However, as a result of tax reform legislation passed in December 2017, the tax-based shared responsibility payment imposed on certain individuals who fail to maintain qualifying health coverage for all or part of a year or pay a penalty, which is commonly known as the "individual mandate" has been eliminated effective January 1, 2019. On December 14, 2018, a U.S. District Court Judge in the Northern District of Texas, or the Texas District Court Judge, ruled that the individual mandate is a critical and inseverable feature of the Affordable Care Act, and therefore, because it was repealed as part of the Tax Cuts and Jobs Act of 2017, the remaining provisions of the Affordable Care Act are invalid as well. The Trump Administration and CMS have both stated that the ruling will have no immediate effect, and on December 30, 2018 the Texas District Court Judge issued an order staying the judgment pending appeal.

On January 22, 2018, President Trump signed a continuing resolution on appropriations for fiscal year 2018 that delayed the implementation of certain Affordable Care Act-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. The Bipartisan Budget Act of 2018, or the BBA, among other things, amends the Affordable Care Act, effective January 1, 2019, to close the coverage gap in most Medicare drug plans, commonly referred to as the "donut hole."

In addition, other legislative changes have been proposed and adopted in the United States since ACA was enacted. On August 2, 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 of 2% per fiscal year. These reductions went into effect on April 1, 2013 and, due to subsequent legislative amendments to the statute, will remain in effect through 2025 unless additional Congressional action is taken. On January 2, 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, further reduced Medicare payments to several types of 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. These new laws may result in additional reductions in Medicare and other health care funding, which could have a material adverse effect on our customers and accordingly, our financial operations.

Moreover, payment methodologies may be subject to changes in healthcare legislation and regulatory initiatives. For example, CMS may develop new payment and delivery models, such as bundled payment models. The U.S. federal government has set a goal of moving 50% of Medicare payments into these "Alternative Payment Models" by the end of 2018. In addition, recently there has been heightened governmental scrutiny over the manner in which drug manufacturers set prices for their commercial products. We expect that additional U.S. federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that the U.S. federal government will pay for healthcare products and services, which could result in reduced demand for our product candidates or additional pricing pressures.

Our future success depends on our ability to retain key employees and consultants, including our scientific advisors and founders, and to attract, retain and motivate qualified personnel.

We are highly dependent on our scientific advisors and founders and the principal members of our executive team, the loss of whose services may adversely impact the achievement of our objectives. While we have entered into employment agreements with each of our executive officers, any of them could leave our employment at any time, as all of our employees are "at will" employees. Recruiting and retaining other qualified employees, consultants and advisors for our business, including scientific and technical personnel, will also be critical to our success. There is currently a shortage of skilled executives and scientific experts in our industry, which is likely to continue. As a result, competition for skilled personnel is intense and the turnover rate can be high. We may not be able to attract and retain personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies, as well as from academic and research institutions, for individuals with similar skill sets. In addition, any failure of our programs to succeed in preclinical studies or clinical trials may make it more challenging to recruit and retain qualified personnel. The inability to recruit or the loss of the services of any executive, key employee, consultant or advisor may impede the progress of our research, development and commercialization objectives.

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

As of December 31, 2018, we had 165 full-time employees. As we mature, we expect to expand our full-time employee base and to hire more consultants and contractors. Our management may need to divert a disproportionate amount of its attention away from our day-to-day activities and devote a substantial amount of time to managing these growth activities. We may not be able to effectively manage the expansion of our operations, which may result in weaknesses in our infrastructure, operational mistakes, loss of business opportunities, loss of employees and reduced productivity among remaining employees. Our expected growth could require significant capital expenditures and may divert financial resources from other projects, such as the development of additional product candidates. If our management is unable to effectively manage our growth, our expenses may increase more than expected, our ability to generate and/or grow revenues could be reduced, and we may not be able to implement our business strategy. Our future financial performance and our ability to commercialize product candidates and compete effectively will depend, in part, on our ability to effectively manage any future growth.

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 medicines 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 medicines. 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.

Inadequate funding for the FDA, the SEC 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 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, including most recently from December 22, 2018 to January 25, 2019, 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.

Our anticipated international operations may expose us to business, regulatory, political, operational, financial, pricing and reimbursement and economic risks associated with doing business outside of the United States.

We have a wholly-owned Australian subsidiary through which we conduct clinical trials in Australia. Our business strategy also contemplates potential additional international operations as we seek to continue the development of mavacamten, MYK-491 and other product candidates that we have or may identify, seek regulatory approval for our product candidates, and commercialize any product candidates that are approved outside the United States. If any product candidates for which we have retained worldwide commercial rights are approved, we may hire sales representatives and conduct physician and patient group outreach activities outside of the United States. Doing business internationally involves a number of risks, including but not limited to:

- multiple, conflicting, and changing laws and regulations such as privacy regulations, tax laws, export and import restrictions, employment laws, regulatory requirements, and other governmental approvals, permits, and licenses;
- failure by us to obtain and maintain regulatory approvals for the use of our products in various countries;
- complexities and difficulties in obtaining protection for and enforcing our intellectual property rights;
- difficulties in staffing and managing foreign operations;
- complexities associated with managing multiple payor reimbursement regimes, government payors, or patient self-pay systems;
- limits in our ability to penetrate international markets;
- financial risks, such as exposure to foreign currency exchange rate fluctuations and their impact on payments required in local currency;
- natural disasters, political and economic instability, including wars, terrorism, and political unrest, outbreak of disease, boycotts, curtailment of trade, and other business restrictions;
- certain expenses including, among others, expenses for travel, translation, and insurance; and
- regulatory and compliance risks that relate to maintaining accurate information and control over sales and activities that may fall within the purview of the U.S. Foreign Corrupt Practices Act, its books and records provisions, or its anti-bribery provisions.

Any of these factors could significantly harm our future international expansion and operations and, consequently, our results of operations.

If we fail to comply with environmental, health and safety laws and regulations, we could become subject to fines or penalties or incur costs that could have a material adverse effect on the success of our business.

We 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. Our operations involve the use of hazardous and flammable materials, including chemicals and biological materials. Our operations also 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.

Although we maintain 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 or other work-related injuries, this insurance may not provide adequate coverage against potential liabilities. 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. Failure to comply with these laws and regulations also may result in substantial fines, penalties or other sanctions.

Our employees, independent contractors, principal investigators, CROs, consultants, vendors and collaboration partners may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements, which could have a material adverse effect on our business.

We are exposed to the risk that our employees, independent contractors, principal investigators, CROs, consultants, vendors and collaboration partners may engage in fraudulent conduct or other illegal activities. Misconduct by these parties could include intentional, reckless and/or negligent conduct or unauthorized activities that violate: (i) the regulations of the FDA, EMA and other regulatory authorities, including those laws that require the reporting of true, complete and accurate information to such authorities; (ii) manufacturing standards; (iii) federal and state data privacy, security, fraud and abuse and other healthcare laws and regulations in the United States and abroad; or (iv) laws that require the reporting of true, complete and accurate financial information and data. In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, misconduct, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Activities subject to these laws could also involve the improper use of information obtained in the course of clinical trials or creating fraudulent data in our preclinical studies or clinical trials, which could result in regulatory sanctions and cause serious harm to our reputation. It is not always possible to identify and deter misconduct by employees and other third parties, and the precautions we take to detect and prevent misconduct may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to comply with such laws or regulations. Additionally, we are subject to the risk that a person could allege such fraud or other misconduct, even if none occurred. 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 and results of operations, including the imposition of significant civil, criminal and administrative penalties, damages, monetary fines, possible exclusion from participation in Medicare, Medicaid and other U.S. federal healthcare programs, contractual damages, reputational harm, diminished profits and future earnings, and curtailment of our operations, any of which could adversely affect our ability to operate our business and our results of operations.

Unfavorable global economic and political conditions could adversely affect our business, financial condition or results of operations.

Our ability to invest in and expand our business and meet our financial obligations, to attract and retain third-party contractors and collaboration partners and to raise additional capital depends on our operating and financial performance, which, in turn, is subject to numerous factors, including the prevailing economic and political conditions and financial, business and other factors beyond our control, such as the rate of unemployment, the number of uninsured persons in the United States, political influences and inflationary pressures. For example, an overall decrease in or loss of insurance coverage among individuals in the United States as a result of unemployment, underemployment or the potential repeal of certain provisions of the ACA, may decrease the demand for healthcare services and pharmaceuticals. If fewer patients are seeking medical care because they do not have insurance coverage, we may experience difficulties in any eventual commercialization of our product candidates and our business, results of operations, financial condition and cash flows could be adversely affected.

In addition, our results of operations could be adversely affected by general conditions in the global economy and in the global financial markets upon which biopharmaceutical companies such as us are dependent for sources of capital. In the past, global financial crises have caused extreme volatility and disruptions in the capital and credit markets. A severe or prolonged economic downturn could result in a variety of risks to our business, including a reduced ability to raise additional capital when needed on acceptable terms, if at all, and weakened demand for our product candidates. A weak or declining economy could also strain our suppliers, possibly resulting in supply disruption. Any of the foregoing could harm our business and we cannot anticipate all of the ways in which the current economic climate and financial market conditions could adversely impact our business.

We or the third parties upon whom we depend may be adversely affected by earthquakes or other natural disasters and our business continuity and disaster recovery plans may not adequately protect us from a serious disaster.

Earthquakes or other natural disasters could severely disrupt our operations, and have a material adverse effect on our business, results of operations, financial condition and prospects. If a natural disaster, power outage or other event occurred that prevented us from using all or a significant portion of our headquarters, that damaged critical infrastructure, such as the manufacturing facilities of our third-party contract manufacturers, or that otherwise disrupted operations, it may be difficult or, in certain cases, impossible for us to continue our business for a substantial period of time. The disaster recovery and business continuity plans we have in place currently are limited and are unlikely to prove adequate in the event of a serious disaster or similar event. We may incur substantial expenses as a result of the limited nature of our disaster recovery and business continuity plans, which, particularly when taken together with our lack of earthquake insurance, could have a material adverse effect on our business.

Product liability lawsuits against us could cause us to incur substantial liabilities and could limit commercialization of any medicines that we may develop.

We face an inherent risk of product liability exposure related to the testing of our product candidates in human clinical trials and will face an even greater risk if we commercially sell any medicines that we may develop. If we cannot successfully defend ourselves against claims that our product candidates or medicines caused injuries, we could incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any product candidates or medicines 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; and
- the inability to commercialize mavacamten, MYK-491 or any other product candidates that we may develop.

Although we maintain product liability insurance, including coverage for clinical trials that we sponsor, it may not be adequate to cover all liabilities that we may incur. We anticipate that we will need to increase our insurance coverage as we commence additional clinical trials and if we successfully commercialize any product candidates. The market for insurance coverage is increasingly expensive, and the costs of insurance coverage will increase as our clinical programs increase in size. 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.

Our internal computer systems, or those of our third-party CROs or other contractors or consultants, may fail or suffer security breaches, which could result in a material disruption of our operations.

Despite the implementation of security measures, our internal computer systems and those of our third-party CROs and other contractors and consultants 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 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 programs. For example, the loss of clinical trial data for our product candidates could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach results in a loss of or damage to our data or applications or other data or applications relating to our technology or product candidates, or inappropriate disclosure of confidential or proprietary information, we could incur liabilities and experience delays or disruptions to various aspects of our operations, including our financial reporting and the development of our product candidates.

Our ability to utilize our net operating loss carryforwards and certain other tax attributes may be limited.

We have incurred substantial losses during our history and do not expect to become profitable in the near future. To the extent that we continue to generate taxable losses, unused losses will carry forward to offset future taxable income, if any, until such unused losses expire. Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended (the "Code") if a corporation undergoes an "ownership change," generally defined as a greater than 50 percentage point change (by value) in its equity ownership over a rolling three-year period, the corporation's ability to use its pre-change net operating loss carryforwards ("NOLs") and other pre-change tax attributes (such as research tax credits) to offset its post-change income or taxes may be limited. While we have determined that an ownership change occurred in April 2015 in connection with our Series B redeemable convertible preferred stock financing and in August 14, 2017 due to a subsequent stock offering, we do not believe that these ownership changes will result in the expiration of any of our existing NOLs prior to utilization. We may experience subsequent shifts in our stock ownership, some of which are outside our control. As a result, if we earn net taxable income, our ability to use our pre-change net operating loss carryforwards to offset U.S. federal taxable income may be subject to limitations, which could potentially result in increased future tax liability to us. In addition, at the state level, there may be periods during which the use of NOLs is suspended or otherwise limited, which could accelerate or permanently increase state taxes owed.

In addition, under the Tax Cuts and Jobs Act (the "Tax Act"), the amount of post 2017 NOLs that we are permitted to deduct in any taxable year is limited to 80% of our taxable income in such year, where taxable income is determined without regard to the NOL deduction itself. The Tax Act generally eliminates the ability to carry back any NOL to prior taxable years, while allowing post 2017 unused NOLs to be carried forward indefinitely. There is a risk that due to changes under the Tax Act, regulatory changes or other unforeseen reasons, our existing NOLs could expire or otherwise be unavailable to offset future income tax liabilities.

Risks Related to Our Common Stock

The market price of our common stock has been and may continue to be highly volatile.

The market price of our common stock has experienced volatility since our IPO in October 2015 and is likely to continue to be volatile. Our stock price could be subject to wide fluctuations in response to a variety of factors, including the following:

- adverse results or delays in preclinical studies or clinical trials;
- reports of adverse events in clinical trials of our product candidates or in other products for the treatment of cardiovascular diseases or clinical trials of such products;
- inability to obtain additional funding;
- any delay in filing an IND or NDA for any of our product candidates and any adverse development or perceived adverse development with respect to the FDA's review of that IND or NDA;
- failure to develop successfully and commercialize our product candidates;
- failure by us or our licensors and strategic collaborators to prosecute, maintain or enforce our intellectual property rights;
- changes in laws or regulations applicable to future products;
- inability to obtain adequate product supply for our product candidates or the inability to do so at acceptable prices;
- adverse regulatory decisions affecting our product candidates or development programs;
- introduction of new products, services or technologies by our competitors;
- failure to meet or exceed financial projections we may provide to the public or to the investment community;
- the perception of the pharmaceutical industry by the public, legislatures, regulators and the investment community;
- announcements of significant acquisitions, strategic partnerships, joint ventures or capital commitments by us, our strategic collaboration partner or our competitors;
- disputes or other developments relating to proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our technologies;
- additions or departures of key scientific or management personnel;
- significant lawsuits, including patent or stockholder litigation;
- changes in the market valuations of similar companies;
- sales of our common stock by us or our stockholders in the future; and
- trading volume of our common stock.

In addition, companies trading in the stock market in general, and The NASDAQ Global Select Market ("NASDAQ") in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these companies. Broad market and industry factors may negatively affect the market price of our common stock, regardless of our actual operating performance. In the past, following periods of volatility in the market, securities class-action litigation has often been instituted against companies. Such litigation, if instituted against us, could result in substantial costs and diversion of management's attention and resources, which could materially and adversely affect our business, financial condition, results of operations and growth prospects.

Future sales and issuances of our common stock or rights to purchase common stock, including pursuant to our equity incentive plans, could result in additional dilution of the percentage ownership of our stockholders and could cause our stock price to fall.

Additional capital will be needed in the future to continue our planned operations. To the extent we raise additional capital by issuing equity securities, our stockholders may experience substantial dilution. We may sell common stock, convertible securities or other equity securities in one or more transactions at prices and in a manner we determine from time to time. If we sell common stock, convertible securities or other equity securities in more than one transaction, investors may be materially diluted by subsequent sales. These sales may also result in material dilution to our existing stockholders, and new investors could gain rights superior to our existing stockholders.

In addition, sales of a substantial number of shares of our outstanding common stock in the public market could occur at any time. These sales, or the perception in the market that the holders of a large number of shares of common stock intend to sell shares, could reduce the market price of our common stock. A substantial number of our outstanding shares of common stock are held by a relatively small number of stockholders who are not subject to restrictions on trading. Sales by our stockholders of a substantial number of shares, or the expectation that such sales may occur, could significantly reduce the market price of our common stock.

We have also registered all shares of our common stock subject to options or other equity awards issued or reserved for future issuance under our equity incentive plans. As a result, these shares will be eligible for sale in the public market to the extent permitted by any applicable vesting requirements and the exercise of options, and restrictions under applicable securities laws. In addition, our directors, executive officers and certain affiliates have established or may in the future establish programmed selling plans under Rule 10b5-1 of the Securities Exchange Act of 1934, as amended, for the purpose of effecting sales of our common stock. If any of these events cause a large number of our shares to be sold in the public market, the sales could reduce the trading price of our common stock and impede our ability to raise future capital. If these additional shares are sold, or if it is perceived that they will be sold, in the public market, the trading price of our common stock could decline.

Pursuant to our 2015 Stock Option and Incentive Plan (the "2015 Plan"), we are authorized to grant stock options and other equity-based awards to our employees, directors and consultants. Beginning on January 1, 2017, the number of shares available for future grant under the 2015 Plan will automatically increase each year by up to 4% of all shares of our capital stock outstanding as of December 31 of the prior calendar year, subject to the ability of our board of directors to take action to reduce the size of the increase in any given year. In addition, pursuant to our 2015 Employee Stock Purchase Plan (the "2015 ESPP"), we have initially reserved 255,000 shares for purchase by eligible employees. Beginning on January 1, 2017 and ending on January 1, 2025, the number of shares available for future issuance under the 2015 ESPP will automatically increase each year by up to the lesser of 3,000,000 shares of common stock or 1% of all shares of our capital stock outstanding as of December 31 of the prior calendar year, subject to the ability of our board of directors to take action to reduce the size of the increase in any given year. Currently, we plan to register the increased number of shares available for issuance under the 2015 Plan and the 2015 ESPP each year. If our board of directors elects to increase the number of shares available for future grant under these plans by the maximum amount each year, our stockholders may experience additional dilution, which could cause our stock price to fall.

Our principal stockholders and management own a significant percentage of our stock and will be able to exert significant control over matters subject to stockholder approval.

As of February 25, 2019, our executive officers, directors, five percent or greater stockholders and their affiliates beneficially own approximately 46.6% of our outstanding voting stock. These stockholders will have the ability to influence us through their ownership positions. These stockholders may be able to determine all matters requiring stockholder approval. For example, these stockholders, acting together, may be able to control elections of directors, amendments of our organizational documents, or approval of any merger, sale of assets, or other major corporate transaction. This may prevent or discourage unsolicited acquisition proposals or offers for our common stock that you may believe are in your best interest as one of our stockholders.

We have broad discretion in the use of our cash and cash equivalents and may not use them effectively.

Our management has broad discretion in the application of our existing cash and cash equivalents, and you will not have the opportunity to assess whether our existing cash and cash equivalents are being used appropriately. Because of the number and variability of factors that will determine our use of our existing cash and cash equivalents, their ultimate use may vary substantially from their currently intended use. The failure by our management to apply these funds effectively could harm our business. Pending their use, we may invest our cash and cash equivalents in short-term, investment-grade, interest-bearing securities. These investments may not yield a favorable return to our stockholders.

If securities or industry analysts do not publish research, or publish inaccurate or unfavorable research, about our business, our stock price and trading volume could decline.

The trading market for our common stock will depend, in part, on the research and reports that securities or industry analysts publish about us or our business. Securities and industry analysts may not publish an adequate amount of research on our company, which may negatively impact the trading price for our stock. In addition, if one or more of the analysts who cover us downgrade our stock or publish inaccurate or unfavorable research about our business, our stock price would likely decline. Further, if our operating results fail to meet the forecasts of analysts, our stock price would likely decline. If one or more of these analysts cease coverage of our company or fail to publish reports on us regularly, demand for our stock could decrease, which might cause our stock price and trading volume to decline.

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

As a public company, and particularly because we are no longer an emerging growth company, we incur and will continue to incur significant legal, accounting and other expenses that we did not incur as a private company. In addition, the Sarbanes-Oxley Act and rules subsequently implemented by the SEC and NASDAQ have imposed various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. Our management and other personnel will need to devote a substantial amount of time to these compliance initiatives. Moreover, these rules and regulations will increase our legal and financial compliance costs and will make some activities more time-consuming and costly. For example, we expect that these rules and regulations may make it more difficult and more expensive for us to obtain director and officer liability insurance.

Pursuant to Section 404, we are required to furnish a report by our management on our internal control over financial reporting with our Annual Report on Form 10-K for each fiscal year and to obtain 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 are and will continue to be 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, 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 neither we nor our independent registered public accounting firm will be able to conclude within the prescribed timeframe that our internal control over financial reporting is effective as required by Section 404. This could impair our ability to produce timely and accurate consolidated financial statements and result in an adverse reaction in the financial markets due to a loss of confidence in the reliability of our consolidated financial statements.

Our operating results may fluctuate significantly or may fall below the expectations of investors or securities analysts, each of which may cause our stock price to fluctuate or decline.

Our quarterly and annual operating results may fluctuate significantly in the future, which makes it difficult to predict our future operating results. Our net loss and other operating results will be affected by numerous factors, many of which are outside of our control and may be difficult to predict, including:

- variations in the level of expenses related to our clinical development programs, our precision medicine platform or our preclinical research and development programs;
- the timing and success or failure of preclinical studies and clinical trials for our product candidates or competing product candidates;
- our ability to obtain regulatory approval for our product candidates, and the timing and scope of any such approvals we may receive;

- if any of our product candidates receives regulatory approval, the level of underlying demand for these product candidates and our ability to successfully commercialize any approved product;
- addition or termination of clinical trials or funding support;
- our execution of any new collaborative, licensing or similar arrangements, and the timing of payments we may make or receive under these arrangements.
- any intellectual property infringement or other lawsuits in which we may become involved; and
- regulatory developments affecting our product candidates or those of our competitors.

If our operating results fall below the expectations of investors or securities analysts, the price of our common stock could decline substantially. Furthermore, any fluctuations in our operating results may, in turn, cause the price of our stock to fluctuate substantially. Additionally, due to the unpredictability of our quarterly and annual operating results, we believe that period-to-period comparisons of our financial results are not necessarily meaningful and should not be relied upon as an indication of our future performance.

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 any future debt agreements may preclude us from paying dividends. As a result, capital appreciation, if any, of our common stock will be your sole source of gain for the foreseeable future.

We could be subject to securities class action litigation.

In the past, securities class action litigation has often been brought against a company following a decline in the market price of its securities. This risk is especially relevant for us because biotechnology and pharmaceutical companies have experienced significant stock price volatility in recent years. If we face such litigation, it could result in substantial costs and a diversion of management's attention and resources, which could harm our business.

Provisions in our amended and restated certificate of incorporation and amended and restated bylaws, as well as provisions of Delaware law, could make it more difficult for a third party to acquire us or increase the cost of acquiring us, even if doing so would benefit our stockholders or remove our current management.

Our amended and restated certificate of incorporation, amended and restated bylaws and Delaware law contain provisions that may have the effect of delaying or preventing a change in control of us or changes in our management. Our amended and restated certificate of incorporation and amended and restated bylaws include provisions that:

- authorize "blank check" preferred stock, which could be issued by our board of directors without stockholder approval and may contain voting, liquidation, dividend and other rights superior to our common stock;
- create a classified board of directors whose members serve staggered three-year terms;
- specify that special meetings of our stockholders can be called only by our board of directors, the chairperson of our board of directors, our chief executive officer or our president;
- prohibit stockholder action by written consent;
- establish an advance notice procedure for stockholder approvals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors;
- provide that our directors may be removed only for cause and with the vote of the holders of 75% or more of our outstanding capital stock then entitled to vote at an election of directors;
- provide that vacancies on our board of directors may be filled only by a majority of directors then in office, even if less than a quorum;
- specify that no stockholder is permitted to cumulate votes at any election of directors;

- expressly authorize our board of directors to modify, alter or repeal our amended and restated bylaws; and
- require supermajority votes of the holders of our common stock to amend specified provisions of our amended and restated certificate of incorporation and amended and restated bylaws.

These provisions, alone or together, could delay or prevent hostile takeovers and changes in control or changes in our management.

In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which limits the ability of stockholders owning in excess of 15% of our outstanding voting stock to merge or combine with us.

Any provision of our amended and restated certificate of incorporation or amended and restated bylaws or Delaware law that has the effect of delaying or deterring a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our common stock and could also affect the price that some investors are willing to pay for our common stock.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

In September 2014, we leased approximately 34,400 square feet of office and lab space at our 333 Allerton Avenue, South San Francisco, California location, which serves as our corporate headquarters, under a lease that expires in January 2020. In October 2017, we entered into a 25-month sublease agreement for approximately 8,000 square feet of office and lab space in a separate South San Francisco, California location and in January 2018, we expanded our office and laboratory space at that same location in South San Francisco by approximately 6,000 square feet. In October 2018, we entered into a 15-month lease at a new South San Francisco location for approximately 22,100 square feet of office and lab space. In September 2018, we entered into a 10-year lease for approximately 129,800 square feet of office and lab space, which will commence upon occupancy which is currently planned for January 2020. We believe that our existing facility leases and other available properties will be sufficient for our needs for the foreseeable future.

ITEM 3. LEGAL PROCEEDINGS

We are not a party to any material legal proceedings at this time. From time to time, we may be subject to various legal proceedings and claims that arise in the ordinary course of our business activities. Although the results of litigation and claims cannot be predicted with certainty, we do not believe we are party to any claim or litigation the outcome of which, if determined adversely to us, would individually or in the aggregate be reasonably expected to have a material adverse effect on our business. Regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors.

ITEM 4. MINE SAFETY DISCLOSURES

None.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

MARKET INFORMATION

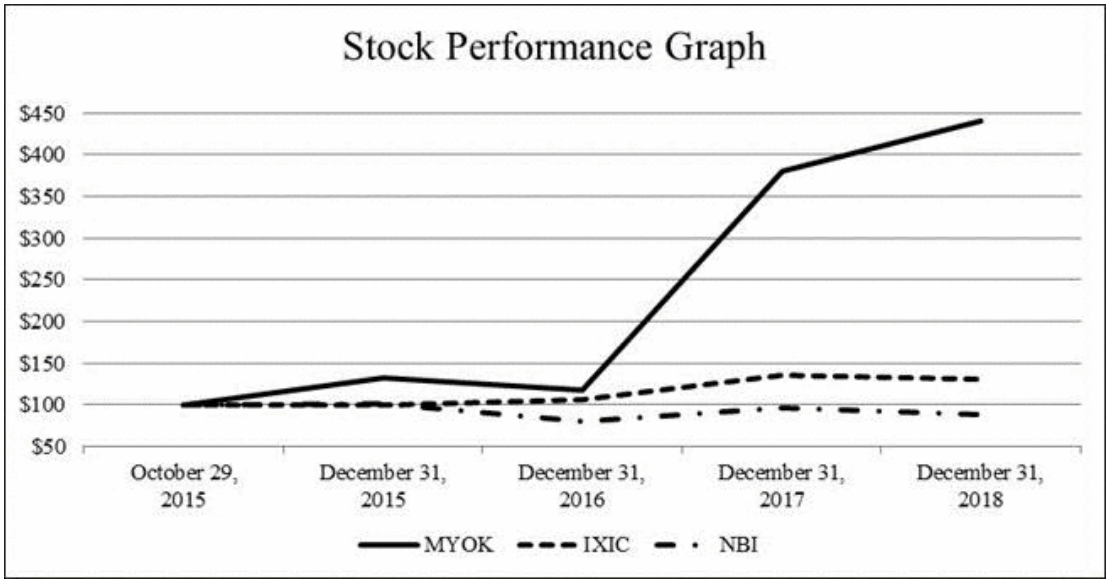
Our common stock began trading on The NASDAQ Global Select Market under the symbol "MYOK" on October 29, 2015. Prior to this date, there was no public market for our common stock.

HOLDERS OF COMMON STOCK

As of February 25, 2019, we had 40,319,855 shares of common stock outstanding held by approximately 24 stockholders of record. The approximate number of holders is based upon the actual number of holders registered in our records at such date and excludes holders in "street name" or persons, partnerships, associations, corporations, or other entities identified in security positions listings maintained by depository trust companies.

STOCK PERFORMANCE GRAPH

The following graph illustrates a comparison of the total cumulative stockholder return on our common stock since October 29, 2015, which is the date our common stock first began trading on the NASDAQ Global Select Market, to two indices: the NASDAQ Composite Index and the NASDAQ Biotechnology Index. The stockholder return shown in the graph below is not necessarily indicative of future performance, and we do not make or endorse any predictions as to future stockholder returns. This graph shall not be deemed "soliciting material" or be deemed "filed" for purposes of Section 18 of the Exchange Act, or otherwise subject to the liabilities under that Section, and shall not be deemed to be incorporated by reference into any of our filings under the Securities Act, whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.



Assumed $100 investment in stock or index	Ticker	October 29, 2015	December 31, 2015	December 31, 2016	December 31, 2017	December 31, 2018
MyoKardia, Inc. (MYOK)	MYOK	$ 100	$ 132	$ 117	$ 380	$ 441
NASDAQ Composite (^IXIC)	IXIC	$ 100	$ 99	$ 106	$ 136	$ 131
NASDAQ Biotechnology (^NBI)	NBI	$ 100	$ 102	$ 80	$ 97	$ 88

DIVIDEND POLICY

We have never declared or paid any cash dividends on our capital stock. We currently expect to retain all future earnings, if any, for use in the operation and expansion of our business, and therefore do not anticipate paying any cash dividends in the foreseeable future.

SECURITIES AUTHORIZED FOR ISSUANCE UNDER EQUITY COMPENSATION PLANS

Information about our equity compensation plans is incorporated herein by reference to Item 12 of Part III of this Annual Report on Form 10-K.

RECENT SALES OF UNREGISTERED SECURITIES

None.

ISSUER PURCHASES OF EQUITY SECURITIES

Period	(a) Total Number of Shares Purchased (1)	(b) Average Price Paid per Share	(c) Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	(d) Maximum Number (or Approximate Dollar Value) of Shares that May Yet Be Purchased Under the Plans or Programs
		(in thousands, except per share amounts)		
October 1, 2018 through October 31, 2018	—	$ —	—	—
November 1, 2018 through November 30, 2018	997	1.51	—	—
December 1, 2018 through December 31, 2018	—	—	—	—
Total	997	$ 1.51	—	—

(1) Under certain stock purchase agreements with employees, we have the right to repurchase common stock at the lower of fair value and the stockholders' original purchase price, which right lapses according to individual vesting schedules. Reflects shares of common stock repurchased in connection with the termination of services by certain employees.

ITEM 6. SELECTED CONSOLIDATED FINANCIAL DATA

You should read the selected historical financial data below in conjunction with the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the consolidated financial statements and related notes included elsewhere in this Annual Report on Form 10-K. The selected financial data set forth below is derived from our audited consolidated financial statements and may not be indicative of future operating results.

(In thousands, except share and per share data)	Year Ended December 31, 2018	2017	2016	2015	2014
		As Revised (1)			
Consolidated Statement of Operations Data:					
Collaboration and license revenue	$ 33,558	$ 11,442	$ 41,971	$ 14,199	$ 5,916
Operating expenses:					
Research and development	68,774	48,136	36,215	28,393	18,296
General and administrative	38,435	21,973	16,289	9,019	4,838
Total operating expenses	107,209	70,109	52,504	37,412	23,134
Loss from operations	(73,651)	(58,667)	(10,533)	(23,213)	(17,218)
Interest and other income (loss), net	5,953	1,657	153	(47)	2
Change in fair value of redeemable convertible preferred stock call option liability	—	—	—	314	387
Net loss	(67,698)	(57,010)	(10,380)	(22,946)	(16,829)
Cumulative dividend relating to redeemable convertible preferred stock	—	—	—	(5,151)	(2,864)
Accretion of redeemable convertible preferred stock to redemption value	—	—	—	(98)	(158)
Net loss attributable to common stockholders	$ (67,698)	$ (57,010)	$ (10,380)	$ (28,195)	$ (19,851)
Net loss per share attributable to common stockholders, basic and diluted	$ (1.76)	$ (1.74)	$ (0.38)	$ (4.48)	$ (11.30)
Shares used to compute net loss per share attributable to common stockholders, basic and diluted	38,386,906	32,832,514	27,475,792	6,292,800	1,756,900

(1) The Company adopted ASC 606 "Revenue from Contracts with Customers" on January 1, 2018 and has revised the consolidated statement of operations data for the years ended December 31, 2017 and 2016 to reflect the adoption as of January 1, 2016. The consolidated statement of operation data for the years ended December 31, 2015 and 2014 has not been revised for the adoption of ASC 606.

(In thousands)	As of December 31, 2018	2017	2016	2015	2014
		As Revised			
Consolidated Balance Sheet Data:					
Cash and cash equivalents	$ 246,122	$ 224,571	$ 135,797	$ 112,265	$ 43,648
Working capital (1)	282,769	207,463	142,215	91,572	26,348
Total assets	407,253	282,808	201,306	116,580	46,889
Accumulated deficit (1)	(202,553)	(134,855)	(77,837)	(64,685)	(36,906)
Total stockholders' equity (deficit) (1)	370,567	230,676	145,382	93,873	(36,906)

(1) The Company adopted ASC 606 "Revenue from Contracts with Customers" on January 1, 2018 and has revised certain consolidated balance sheet data as of December 31, 2017 and 2016 to reflect the adoption as of January 1, 2016. The consolidated balance sheet data as of December 31, 2015 and 2014 has not been revised for the adoption of ASC 606.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion and analysis together with "Item 6. Selected Consolidated Financial Data" and our financial statements and related notes included elsewhere in this Annual Report. The following discussion contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those expressed or implied in any forward-looking statements as a result of various factors, including those set forth under the caption "Item 1A. Risk Factors."

Overview

We are a clinical-stage biopharmaceutical company pioneering a precision medicine approach to discover, develop and commercialize targeted therapies for the treatment of serious and neglected rare cardiovascular diseases. Our goal is to be the world's leading precision cardiovascular medicine company. Precision medicine involves discovering and developing therapies that integrate clinical and molecular information based on the biological basis of disease. Our strategy is to identify homogenous subgroups of patients with a given cardiovascular disease, understand the causal factors underlying that subgroup's condition, and develop targeted therapies designed to correct the common underlying defect leading to abnormal cardiac contraction or relaxation within each subgroup.

Our lead product candidate, mavacamten, is initially being developed for the treatment of the most common form of heritable cardiomyopathies, hypertrophic cardiomyopathy, or HCM. In HCM, the walls of the heart thicken due to excessive contraction and prevent the left ventricle from expanding, resulting in a reduced pumping capacity. We are currently enrolling patients into a pivotal Phase 3 clinical trial of mavacamten, our product candidate for the treatment of symptomatic, obstructive HCM ("oHCM"). Patients from the Phase 2 clinical study of mavacamten in oHCM are currently being enrolled in an open-label extension study intended to provide data on long-term exposure to mavacamten. Mavacamten is also being evaluated in a randomized Phase 2 clinical trial for the treatment of symptomatic non-obstructive HCM ("nHCM").

Our second clinical-stage candidate, MYK-491, has completed two single-ascending dose Phase 1 studies, in healthy volunteers and in DCM patients with stable heart failure. Our second clinical-stage candidate, MYK-491, is currently being studied in a Phase 2a multiple-ascending dose clinical trial in patients with stable heart failure. Additionally, we are advancing multiple preclinical programs, focused on regulating or normalizing cardiac muscle contractility and relaxation.

Financial Overview

We have not generated net income from operations, and as of December 31, 2018, had an accumulated deficit of 202.6 million, primarily as a result of research and development and general and administrative expenses. To date, all our revenue has been derived from non-refundable payments under the license and collaboration agreement we entered into with Aventis Inc., a wholly-owned subsidiary of Sanofi S.A. ("Sanofi"), in August 2014 (the "Collaboration Agreement"), and we have not yet generated any revenue from product sales. We have never been profitable and have incurred net losses in each year since our inception. We expect to incur significant and increasing losses from operations for the foreseeable future, and we can provide no assurance that we will ever generate significant revenue or profits.

Through December 31, 2018, we have financed our operations through an initial public offering ("IPO"), three follow-on public offerings, private placements of redeemable convertible preferred stock as well as funds received in connection with the Collaboration Agreement. Our equity issuances have been as follows:

- Prior to our IPO, we received net proceeds of $93.9 million from the sale of shares of our Series A, A-1 and B redeemable convertible preferred stock.
- In November 2015, we completed our IPO of 6,253,125 shares of common stock at an offering price of $10.00 per share, resulting in net proceeds of approximately $55.6 million, after deducting underwriting discounts, commissions and offering costs.
- In October 2016, we completed a follow-on public offering of 4,370,000 shares of common stock at an offering price of $15.00 per share, resulting in net proceeds of approximately $61.1 million, after deducting underwriting discounts, commissions and offering costs.
- In August 2017, the Company completed a follow-on public offering of 4,025,000 shares of common stock at an offering price of $35.50 per share, resulting in net proceeds of approximately $133.9 million, after deducting underwriting discounts, commissions and offering costs.
- In June 2018, we completed a follow-on public offering of 3,961,147 shares of common stock at an offering price of $49.00 per share, resulting in net proceeds of approximately $181.9 million, after deducting underwriting discounts, commissions and offering costs.

In connection with the Collaboration Agreement, we have received $148.4 million from Sanofi, consisting of a $35.0 million upfront payment, a $25.0 million milestone payment for the submission of an Investigational New Drug ("IND") application for MYK-491 with the U.S. Food and Drug Administration (the "FDA") in November 2016, a $45.0 million continuation payment from Sanofi in January 2017 and $43.4 million in reimbursements and prepayments for research and development costs under the development portion of our Collaboration Agreement. As of December 31, 2018, we have an accumulated deficit of $202.6 million, cash and cash equivalents of $246.1 million, short-term investments of $68.6 million and long-term investments of $80.1 million.

We have no manufacturing facilities and all of our manufacturing activities are contracted out to a third party. We currently utilize third-party clinical research organizations ("CROs") to carry out our clinical development and trials. We do not yet have a sales organization.

The research and development expenses incurred in the development and potential commercialization of mavacamten, MYK-491 and other product candidates, are shown net of $23.1 million, $7.3 and zero in Sanofi research and development credits during the years ended December 31, 2018, 2017 and 2016, respectively, as follows (in thousands):

	Year Ended December 31,		
	2018	2017	2016
Mavacamten, net of reimbursement	$ 30,012	$ 19,902	$ 17,445
MYK-491	16,583	11,286	8,288
Other	22,179	16,948	10,482
Total research and development expenses:	$ 68,774	$ 48,136	$ 36,215

We expect to incur substantial expenditures in the foreseeable future for the advancement of our precision medicine platform, the development and potential commercialization of our lead compounds mavacamten, and MYK491 and the discovery, development and potential commercialization of any additional product candidates we may pursue. We will need substantial additional funding to support operating activities as we advance our lead compounds and other potential product candidates through clinical development, seek regulatory approval and proceed to commercialization. Adequate funding may not be available to us on acceptable terms, or at all.

Sanofi License and Collaboration Agreement

In August 2014, we entered into the Collaboration Agreement with Sanofi, for the research, development and potential commercialization of pharmaceutical products for the treatment, prevention and diagnosis of hypertrophic and dilated cardiomyopathy, as well as potential additional indications. Under the Collaboration Agreement, we granted Sanofi royalty-bearing licenses to develop and commercialize products resulting from our lead candidate programs HCM-1, HCM-2 and DCM-1. The licenses provided Sanofi with worldwide rights in the case of DCM-1 and rights outside the United States with respect to the HCM-1 and HCM-2 programs. The terms of the Collaboration Agreement also stated that we are responsible for conducting research and development activities through early human efficacy studies for all three programs, except for specified research activities to be conducted by Sanofi. We were also entitled to receive tiered royalties ranging from the mid-single digits to the mid-teens on net sales of certain HCM-1, HCM-2, and DCM-1 finished products outside the United States and on net sales of certain DCM-1 finished products in the United States. Sanofi was also eligible to receive tiered royalties ranging from the mid-single digits to the low-teens on net sales of certain HCM-1 and HCM-2 finished products in the United States.

Over the course of the collaboration, we have received the following from Sanofi:

(i) $105.0 million in cash as upfront, milestone and continuation payments, in exchange for royalty-based license fees in the event of commercialization of these programs, certain of which rights continue post-termination;

(ii) $48.3 million in cash, in exchange for issuances of our common stock, net of offering costs and underwriting fees;

(iii) $43.4 million in cash, as reimbursement for certain research and development costs under the Registration Program Plan and pre-Proof of Concept terms of the agreement; and

(iv) $45.0 million of in-kind research and development support.

Under the terms of the Collaboration Agreement, the agreement was deemed terminated if Sanofi did not notify us that they intended to continue to fund certain programs on or before December 31, 2018. On that date Sanofi notified us that they did not intend to continue the collaboration with respect to the HCM-1 program and that the agreement was deemed terminated with respect to all other programs. As a result, the agreement has been terminated in its entirety except for Sanofi's continuing rights to royalties in the event of commercialization of the HCM-1 program. The events leading up to the termination included our belief and discussion

with Sanofi that it is critical to our strategy to maintain control of the U.S. commercial rights for mavacamten, as well our desire not to grant additional rights in expanded indications.

Components of Operating Results

Collaboration and License Revenue

Through December 31, 2018 we generated revenue from the Collaboration Agreement with Sanofi for the development and commercialization of products under the collaboration. All revenue was recognized through December 31, 2018 and no further collaboration and license revenue relating to the Collaboration Agreement remains to be recognized.

Operating Expense

Research and Development Expenses

Research and development expenses consist of salaries and benefits, including stock-based compensation, lab supplies and facility costs, and fees paid to CROs to conduct certain research and development activities on our behalf. Amounts incurred as well as portions reimbursed by Sanofi in connection with the collaboration and license agreement are also included in research and development expense. Payments made prior to the receipt of goods or services are capitalized until the goods or services are received.

General and Administrative Expenses

General and administrative expenses consist principally of salaries and benefits, including stock-based compensation, professional fees for legal, consulting, audit and tax services, market research, rent, sales and marketing, and other general operating expenses not otherwise classified as research and development expenses.

Critical Accounting Policies, Significant Judgments and Use of Estimates

This discussion and analysis of our financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles. The preparation of these consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the consolidated financial statements, as well as the reported expenses incurred during the reporting periods. Our estimates are based on our historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. We believe that the accounting policies discussed below are critical to understanding our historical and future performance, as these policies relate to the more significant areas involving management's judgments and estimates.

Recent Accounting Pronouncements

The information required by this item is included in Note 2, Summary of Significant Accounting Policies of the Notes to Consolidated Financial Statements included in this Form 10-K.

Revenue

We generate revenue from collaboration and license agreements for the development and commercialization of our products. Collaboration and license agreements may include non-refundable upfront license fees, partial or complete reimbursement of research and development costs, contingent consideration payments based on the achievement of defined collaboration objectives and royalties on sales of commercialized products. To date, we have not recognized revenue from sales of our product candidates.

We account for revenue in accordance with Accounting Standards Codification Topic 606, *Revenue from Contracts with Customers* ("ASC 606"). ASC 606 applies to all contracts with customers, except for contracts that are within the scope of other standards, such as leases, insurance, certain collaboration arrangements and financial instruments. We recognize revenue when our customer obtains control of promised goods or services, in an amount that reflects the consideration which we expect to receive in exchange for those goods or services. To determine revenue recognition for arrangements that we determine are within the scope of ASC 606, we perform the following five steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the Company satisfies a performance obligation. The Company only applies the five-step model to contracts when it is probable that Company will collect the consideration it is entitled to in exchange for the goods or services it transfers to the customer. At contract inception, once the contract is determined to be within the scope of ASC 606, we assess the goods or services promised within each contract and determine those that are performance obligations and assess whether each

promised good or service is distinct. We then recognize as revenue the amount of the transaction price that is allocated to the respective performance obligation when (or as) the performance obligation is satisfied.

Licenses of intellectual property: Upon the inception of a collaboration agreement, if the license to our intellectual property is determined to be distinct from the other performance obligations identified in the arrangement, then we recognize revenue from non-refundable, upfront fees allocated to the license when the license is transferred to the customer and the customer is able to use and benefit from the license. For licenses that are bundled with other promises, we utilize judgement to assess the nature of the combined performance obligation to determine whether the combined performance obligation is satisfied over time or at a point in time and, if over time, the appropriate method of measuring proportional performance for purposes of recognizing revenue from non-refundable, upfront fees. We evaluate the measure of proportional performance each reporting period and, if necessary, adjust the measure of performance and related revenue recognition.

Milestone payments: At the inception of each arrangement that includes development, regulatory or commercial milestone payments, we evaluate whether the milestones are considered probable of being reached and estimate the amount to be included in the transaction price. ASC 606 suggests two alternatives to use when estimating the amount of variable consideration: the expected value method and the most likely amount method. Under the expected value method, we consider the sum of probability-weighted amounts in a range of possible consideration amounts. Under the most likely amount method, we consider the single most likely amount in a range of possible consideration amounts. Whichever method is used, it is consistently applied throughout the life of the contract; however, it is not necessary for us to use the same approach for all contracts. We generally expect to use the most likely amount method for development and regulatory milestone payments. If it is probable that a significant revenue reversal will not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within our control or that of the licensee, such as regulatory approvals are not considered probable of being achieved until those approvals are received. The transaction price is then allocated to each performance obligation on a relative stand-alone selling price basis. We recognize revenue when the performance obligations under the contract are satisfied. At the end of each subsequent reporting period, we re-evaluate the probability or achievement of each such milestone and any related constraint, and if necessary, adjust its estimates of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, which would affect revenues and earnings in the period of adjustment.

Royalties: For arrangements that include sales-based royalties, including milestone payments based on the level of sales, and the license is deemed to be the predominant item to which the royalties relate, we recognize revenue at the later of (i) when the related sales occur, or (ii) when the performance obligation to which some or all of the royalty is allocated has been satisfied (or partially satisfied). To date, we have not recognized any royalty revenue resulting from a collaboration arrangement.

Upfront payments and fees are recorded as deferred revenue upon receipt or when due and may require deferral of revenue recognition to a future period until we perform our obligations under these arrangements. Amounts payable to us are recorded as accounts receivable when our right to consideration is unconditional. We do not assess whether a contract has a significant financing component if the expectation at contract inception is such that the period between payment by the customer and the transfer of the promised goods or services to the customer will be one year or less.

Preclinical Study and Clinical Trial Accruals

Our preclinical study and clinical trial accruals are a component of research and development expenses and are based on patient enrollment and related costs at clinical investigator sites as well as on estimates for the services received and efforts expended pursuant to contracts with multiple research institutions and CROs that conduct and manage preclinical studies and clinical trials on our behalf.

We estimate preclinical study and clinical trial expenses based on the services performed, pursuant to contracts with research institutions and CROs that conduct and manage preclinical studies and clinical trials on our behalf. We estimate these expenses based on discussions with internal clinical management personnel and external service providers as to the progress or stage of completion of trials or services and the contracted fees to be paid for such services. If the actual timing of the performance of services or the level of effort varies from the original estimates, we will adjust the accrual accordingly. To date, there have been no material differences from our accrued preclinical study and clinical trial expenses to our actual preclinical and clinical expenses. Payments made to third parties under these arrangements in advance of the performance of the related services by the third parties are recorded as prepaid expenses until the services are rendered.

Stock-Based Compensation Expense

We account for stock-based compensation arrangements with employees in accordance with ASC 718, *Stock Compensation*. ASC 718 requires the recognition of compensation expense, using a fair value-based method, for costs related to all stock-based payments including stock options. Our determination of the fair value of stock options on the date of grant utilizes the Black-Scholes

option-pricing model for stock options with time-based vesting and is impacted by our common stock price as well as changes in assumptions regarding a number of highly complex and subjective variables. These variables include the expected term that options will remain outstanding, expected common stock price volatility over the term of the option awards, risk-free interest rates and expected dividends.

The fair value is recognized over the period during which an optionee is required to provide services in exchange for the option award, known as the requisite service period (usually the vesting period) on a straight-line basis. As permitted under ASU 2016-09, beginning January 1, 2017, we have elected to recognize forfeitures as they occur, and no longer estimate a forfeiture rate when calculating the stock-based compensation for our equity awards. Until December 31, 2016, stock-based compensation expense recognized at fair value included the impact of estimated forfeitures as we estimated future forfeitures at the date of grant and revised the estimates, if necessary, in subsequent periods if actual forfeitures differed from those estimates.

Equity instruments issued to non-employees are recorded at their fair value on the measurement date and are subject to periodic adjustments as the underlying equity instruments vest. The fair value of options granted to consultants is expensed when vested. The non-employee stock-based compensation expense was not material for all periods presented.

Estimating the fair value of equity-settled awards as of the grant date using valuation models, such as the Black-Scholes option pricing model, is affected by assumptions regarding a number of complex variables. Changes in the assumptions can materially affect the fair value and ultimately how much stock-based compensation expense is recognized. These inputs are subjective and generally require significant analysis and judgment to develop.

Stock-based awards granted include time-based, performance and market-based stock options. Stock-based compensation expense for performance stock options is based on the probability of achieving certain performance criteria, as defined in the individual option grant agreement. We estimate the number of performance options ultimately expected to vest and recognize stock-based compensation expense for those options expected to vest when it becomes probable that the performance criteria will be met, and the options will vest. Stock-based compensation expense recognized for performance options with criteria considered probable of achievement was $248,000, $174,000 and $180,000 for the years ended December 31, 2018, 2017 and 2016, respectively.

We estimated the fair value of the time-based and performance-based employee stock options using the Black-Scholes option-pricing model based on the date of grant with the following assumptions:

	Year Ended December 31,		
	2018	2017	2016
Risk-free interest rate	2.54%-2.98%	1.92%-2.27%	1.05%-2.10%
Expected life (in years)	5.3-6.1	5.3-6.1	5.3-6.1
Volatility	69%-75%	71%-75%	71%-73%
Dividend yield	0%	0%	0%

We have also granted stock options to purchase common stock that vest upon the achievement of market-based stock price targets. For these options, we estimated the fair value on the original grant date using a Monte-Carlo simulation model, and since our IPO, we have recognized the stock-based compensation expense on a straight-line basis over the implicit service period as derived under that simulation.

Following our initial public offering on October 29, 2015, the fair value of shares of our common stock underlying stock option grants is determined by our board of directors or the compensation committee thereof based on the closing price of our common stock as reported on The NASDAQ Global Select market on the date of grant.

Income Taxes

We provide for income taxes under the asset and liability method. Current income tax expense or benefit represents the amount of income taxes expected to be payable or refundable for the current year. Deferred income tax assets and liabilities are determined based on differences between the financial statement reporting and tax bases of assets and liabilities and net operating loss and credit carryforwards and are measured using the enacted tax rates and laws that will be in effect when such items are expected to reverse. Deferred income tax assets are reduced, as necessary, by a valuation allowance when management determines it is more likely than not that some or all of the tax benefits will not be realized.

We account for uncertain tax positions in accordance with ASC 740-10, Accounting for Uncertainty in Income Taxes. We assess all material positions taken in any income tax return, including all significant uncertain positions, in all tax years that are still subject to assessment or challenge by relevant taxing authorities. Assessing an uncertain tax position begins with the initial determination of the position's sustainability and is measured at the largest amount of benefit that is greater than fifty percent likely of being realized upon ultimate settlement. As of each balance sheet date, unresolved uncertain tax positions must be reassessed, and we will determine whether (i) the factors underlying the sustainability assertion have changed and (ii) the amount of the recognized tax benefit is still appropriate. The recognition and measurement of tax benefits requires significant judgment. Judgments concerning the recognition and measurement of a tax benefit might change as new information becomes available.

As of December 31, 2018, our total deferred tax assets were $69.1 million. Due to our lack of earnings history and uncertainties surrounding our ability to generate future taxable income, the net deferred tax assets have been fully offset by a valuation allowance. The deferred tax assets were primarily comprised of federal and state tax attributes such as net operating losses, or NOLs, research and development credits, and orphan drug credits. Utilization of NOLs and other tax attributes may be limited by the "ownership change" rules, as defined in Section 382 and Section 383 of the Internal Revenue Code, respectively. Generally, an ownership change occurs if certain persons or groups increase their aggregate ownership by more than 50 percentage points of our total capital stock in a three-year period. Similar rules may apply under state tax laws. We have determined that an ownership change occurred on April 20, 2015, in connection with our Series B redeemable convertible preferred stock financing, and on August 14, 2017, due to a subsequent stock offering. Each ownership change resulted in an annual limitation, but all NOLs and other tax attributes generated prior to the ownership changes on April 20, 2015 and August 14, 2017 can be utilized prior to expiration if we earn sufficient taxable income. Our follow-on stock offering completed in June 2018 did not result in an ownership change.

In December 2017, the Tax Cuts and Jobs Act (the "Tax Act") was signed into law making significant changes to the Internal Revenue Code. Changes include, but are not limited to, a corporate tax rate decrease from 34% to 21% effective for tax years beginning after December 21, 2017, the transition of U.S. international taxation from a worldwide tax system to a territorial system, and a one-time transition tax on the mandatory deemed repatriation of cumulative foreign earnings as of December 31, 2017. The Tax Act reduced the corporate tax rate to 21% effective January 1, 2018. Consequently, we had recorded a decrease in net deferred tax assets of $14.3 million, with a corresponding adjustment to the valuation allowance of $14.3 million, for the year ended December 31, 2017. The state and foreign deferred tax effect on federal deferred tax assets has been calculated using 21% rather than the previous 34% federal tax rate. The increase in deferred tax assets during the year ended December 31, 2018 has been offset against an increase to the valuation allowance.

In December 2017, Staff Accounting Bulletin No. 118 ("SAB 118") was issued to address the application of U.S. GAAP in situations when a registrant does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the Act. For the year ended December 31, 2018, the Company noted no additional guidance or information that affects the provisional amounts initially recorded at zero for the transition tax and the remeasurement of the deferred tax assets for the year ended December 31, 2017. In accordance with SAB 118, we have completed accounting related to tax reform in the fourth quarter of 2018 and no adjustments were required. We continue to monitor supplemental legislation and technical interpretations of the tax law that may cause the final impact from the Tax Act to differ from the amounts previously recorded.

We include penalties and interest expense related to income taxes as a component of other income and expense, net.

Results of Operations

Comparison of the Years Ended December 31, 2018 and 2017

The following table summarizes our results of operations during the periods indicated (in thousands):

	Year Ended December 31,			
	2018	2017	Change	
		As Revised	$	%
Collaboration and license revenue	$ 33,558	$ 11,442	$ 22,116	193%
Operating expenses:				
Research and development, net	68,774	48,136	20,638	43%
General and administrative	38,435	21,973	16,462	75%
Total operating expenses	107,209	70,109	37,100	53%
Loss from operations	(73,651)	(58,667)	(14,984)	26%
Interest and other income, net	5,953	1,657	4,296	259%
Net loss	$ (67,698)	$ (57,010)	$ (10,688)	19%

Collaboration and License Revenue

Collaboration and license revenue, as revised for implementation of the ASC 606 revenue standard, was $33.6 million and $11.4 million for the years ending December 31, 2018 and 2017, respectively. Revenues for the year ended December 31, 2018 and 2017 relate to cost to cost revenue recognition methodology applied to a $45.0 million continuation payment received from Sanofi in January 2017; revenues increased in proportion to the increase in research and development expenses.

Research and Development Expenses

Research and development expense was $68.8 million and $48.1 million for the years ending December 31, 2018 and 2017, respectively. The increase was primarily due to a $13.1 million increase in salary and benefits including stock-based compensation expense as a result of higher employee headcount, a $12.3 million in expenses relating to clinical trials of mavacamten and MYK-491, an $8.0 million increase in contract research and consulting, a $0.8 million increase in facility-related costs, a $0.6 million increase in office and related expenses, a $0.6 million increase in lab supply expenses, a $0.4 million increase in professional fees and a $0.6 million increase in travel and other expenses, offset by $15.8 million increase in research and development credits from Sanofi.

General and Administrative Expenses

General and administrative expense was $38.4 million and $22.0 million for years ending December 31, 2018 and 2017, respectively. The increase was primarily due to an increase of $12.5 million in salaries and benefits, including stock-based compensation expense as a result of higher employee headcount, $1.4 million in office and related expenses, $1.2 million in professional fees including accounting and finance fees, $0.6 million in sales and marketing, $0.4 million in recruiting costs and $0.3 million in facility related expenses.

Interest and Other Income, Net

Interest and other income, net was $6.0 million and $1.7 million for the years ended December 31, 2018 and 2017, respectively, primarily due to interest earned on higher invested balances.

Comparison of the Years Ended December 31, 2017 and 2016

The following table summarizes our results of operations during the periods indicated (in thousands):

	Year Ended December 31,		Change	
	2017	2016		
	As Revised		$	%
Collaboration and license revenue	$ 11,442	$ 41,971	$ (30,529)	-73%
Operating expenses:				
Research and development, net	48,136	36,215	11,921	33%
General and administrative	21,973	16,289	5,684	35%
Total operating expenses	70,109	52,504	17,605	34%
Loss from operations	(58,667)	(10,533)	(48,134)	457%
Interest and other income, net	1,657	153	1,504	983%
Net loss	$ (57,010)	$ (10,380)	$ (46,630)	449%

Collaboration and License Revenue

Collaboration and license revenue, as revised for implementation of the ASC 606 revenue standard, was $11.4 million and $42.0 million for the years ending December 31, 2017 and 2016, respectively. Revenues for the year ended December 31, 2017 relate to cost to cost revenue recognition methodology applied to a $45.0 million continuation payment received from Sanofi in January 2017. Revenues for the year ended December 31, 2016 relate to cost to cost revenue recognition methodology applied to a $35.0 million continuation payment received from Sanofi in August 2014 along with a $25.0 million milestone payment for our submission of an IND for MYK-491 with the FDA. The $25.0 million was recognized in full upon the submission of the IND in 2016.

Research and Development Expenses

Research and development expense was $48.1 million and $36.2 million for the years ending December 31, 2017 and 2016, respectively. The increase was primarily due to a $7.2 million increase in expenses relating to clinical trials of mavacamten and MYK-491, a $6.7 million increase in salary and benefits including stock-based compensation as a result of higher employee headcount, a $4.2 million increase in contract research and consulting, a $1.1 million increase in higher facility-related costs and other expenses, offset by $7.3 million in RPP reimbursements from Sanofi.

General and Administrative Expenses

General and administrative expense was $22.0 million and $16.3 million for the years ending December 31, 2017 and 2016, respectively. The increase in general and administrative expenses was primarily due to an increase of $2.6 million in salaries and benefits, including stock compensation, as a result of higher employee headcount, $1.4 million in professional fees including accounting and finance fees, $0.9 million in marketing expenses, $0.6 million in recruiting costs and $0.3 million in office and related expenses.

Interest and Other Income, Net

Interest and other income, net was $1.7 million and $0.2 million for the years ended December 31, 2017 and 2016, respectively, primarily due to interest earned on higher invested balances.

Liquidity and Capital Resources

Since our inception, we have financed our operations primarily through private placements of our equity securities, payments received in connection with the Collaboration Agreement, and our public offerings of common stock. As of December 31, 2018, we had cash and cash equivalents of $246.1 million, short-term investments of $68.6 million and long-term investments of $80.1 million, which we believe will be sufficient to fund our planned operations through at least the next twelve months from the date of this filing. To date, we have not generated any revenue from product sales. We do not know when, or if, we will generate any revenue from product sales and do not expect to generate significant revenue from product sales unless and until we obtain regulatory approval of and commercialize mavacamten, MYK-491 or other product candidates. Management's belief with respect to its ability to fund operations is based on estimates that are subject to risks and uncertainties. If actual results are different from management's estimates, the Company may need to seek additional funding. On August 14, 2017, we completed a follow-on public offering of 4,025,000 shares of common stock at an offering price of $35.50 per share, resulting in net proceeds of approximately $133.9 million, after deducting underwriting discounts, commissions and offering costs. In connection with the Collaboration Agreement, we have received $115.7 million from Sanofi, consisting of a $35.0 million upfront payment, a $25.0 million milestone payment for the submission of an IND for MYK-491 with the FDA in November 2016, a $45.0 million continuation payment from Sanofi in January 2017 and $43.3 million in reimbursements and prepayments for research and development costs under a RPP for mavacamten. On March 8, 2018, we filed the 2018 Shelf Registration Statement covering the potential offering, issuance, and sale of an indeterminate amount of common stock, preferred stock, debt securities, warrants and/or units. In May 2018, we completed a follow-on offering under the 2018 Shelf Registration Statement pursuant to which we issued 3,750,000 shares of common stock at a price of $49.00 per share. In June 2018, we sold an additional 211,147 shares of common stock directly to the underwriters when they partially exercised their over-allotment option at the price of $49.00 per share. In the period ending June 30, 2018, we received proceeds totaling approximately $181.9 million from the offering, net of underwriting discounts and commissions and offering expenses, which includes approximately $9.7 million received due to the underwriters' partial exercise of their over-allotment option.

We expect that our existing cash and cash equivalents will provide sufficient funds to sustain operations through at least the next 12 months from the date of this filing based on our existing business plan. However, we expect to incur substantial expenditures in the foreseeable future for the advancement of our precision medicine platform, the development and potential commercialization of mavacamten and MYK-491, and the discovery, development and potential commercialization of any additional product candidates we may pursue. Specifically, we have incurred substantial expenses in connection with our Phase 1 and Phase 2 clinical trials of mavacamten and expect to continue to incur substantial expenses in connection with our ongoing MAVERICK-HCM Phase 2 clinical trial and EXPLORER-HCM Phase 3 clinical trial of mavacamten and any additional Phase 2 and Phase 3 clinical trials that we may conduct for mavacamten, as well as our ongoing and planned clinical development activities for MYK-491. Furthermore, if our planned Phase 2 and Phase 3 clinical trials for mavacamten are successful, or our other product candidates, including MYK-491, enter into later stage clinical trials or more advanced discovery and development stages, we will need to raise additional capital in order to further advance our product candidates towards regulatory approval.

We will continue to require additional financing to develop our product candidates and fund operations for the foreseeable future through equity or debt financings, collaborative or other arrangements with corporate sources, or through other sources of financing. Adequate additional funding may not be available to us on acceptable terms or at all. Our failure to raise capital as and

when needed could have a negative impact on our financial condition and our ability to pursue our business strategies. We anticipate that we will need to raise substantial additional capital, the requirements of which will depend on many factors, including:

- the rate of progress and the costs of, and our ability to generate positive date from, our ongoing and planned clinical trials of mavacamten and MYK-491;
- the number of product candidates that we intend to develop using our precision medicine platform;
- the costs of research and preclinical studies to support the advancement of other product candidates into clinical development;
- the timing of, and costs involved in, executing our clinical development plans, seeking and obtaining approvals from the FDA and comparable foreign regulatory authorities, including the potential by the FDA or comparable regulatory authorities to require that we perform more studies than those that we currently expect;
- the costs of preparing to manufacture mavacamten on a larger scale, and to manufacture MYK-491 for clinical development;
- the costs of commercialization activities if mavacamten or any future product candidate is approved, including the formation of a sales force;
- the degree and rate of market acceptance of any products launched by us or our partners;
- the costs of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights;
- our need and ability to hire additional personnel;
- our ability to enter into additional collaboration, licensing, commercialization or other arrangements and the terms and timing of such arrangements; and
- the emergence of competing technologies or other adverse market developments.

We may seek funds through borrowings or additional rounds of financing, including private or public equity or debt offerings and collaborative arrangements with corporate partners. If we raise additional funds by issuing equity securities, our stockholders may experience dilution. Any future debt financing into which we enter may impose upon us additional covenants that restrict our operations, including limitations on our ability to incur liens or additional debt, pay dividends, repurchase our common stock, make certain investments and engage in certain merger, consolidation or asset sale transactions. Any debt financing or additional equity that we raise may contain terms that are not favorable to us or our stockholders. If we are unable to raise additional funds when needed, we may be required to delay, reduce, or terminate some or all of our development programs and clinical trials. We may also be required to sell or license to other technologies, product candidates or programs that we would prefer to develop and commercialize ourselves.

Contractual Obligations and Commitments

Purchase Commitments

We conduct product research and development programs through a combination of internal and collaborative programs that include, among others, arrangements with universities, contract research organizations and clinical research sites. We have contractual arrangements with these organizations; however, these contracts are generally cancelable on 30 days' notice and the obligations under these contracts are largely based on services performed.

Facility Leases

As of December 31, 2018, our operating leases for facilities consist of approximately 48,400 square feet of office and lab space in two facilities in South San Francisco, California, which expire in January 2010. In October 2018, we signed a noncancellable lease for an additional 22,100 square feet in South San Francisco which expires in April 2020. We took possession of the additional space in February 2019. Future minimum rental payments on the additional lease total $1.1 million in the aggregate excluding taxes and operating expenses.

In September 2018, we entered into a noncancellable operating lease for approximately 129,800 square feet of space in Brisbane, California, which is currently under construction. The date on which we will become responsible for paying rent will be the date the premises are ready for occupancy, currently anticipated to be January 2020, and the lease will expire 10 years after that date. Included in the lease is one option to extend for an additional 10-year period. Future minimum rental payments are $93.2 million in the aggregate plus taxes and operating expenses payable to the landlord. In September 2018 we provided a standby letter of credit of $1.9 million as security for its obligations under this Lease.

Future annual minimum lease payments due under the new and existing operating leases at December 31 of each year are as follows (in thousands):

	Payments due by period (1)				
	Less than 1 year	1 to 3 years	3 to 5 years	After 5 years	Total
Lease obligations, net	$ 2,752	$ 14,292	$ 17,820	$ 61,444	$ 96,308

(1) The table above is prepared under the assumption that the Rent Commencement Date at the Brisbane Facility starts on January 1, 2020.

Cash Flows

The following table sets forth the primary sources and uses of cash for each of the periods presented below (in thousands):

	Years Ended December 31,		
	2018	2017	2016
Net cash (used in) provided by:			
Operating activities	$ (64,815)	$ (9,838)	$ (20,856)
Investing activities (1)	(99,848)	(37,551)	(17,143)
Financing activities	188,071	136,189	61,501
Net increase in cash, cash equivalents and restricted cash	$ 23,408	$ 88,800	$ 23,502

(1) Investing activities for the years ending December 31, 2017 and 2016 have been revised to reflect the implementation of ASU 2016-18 whereby restricted cash amounts are included with cash and cash equivalents when reconciling the beginning and end of period total amounts in the statements of cash flows.

Cash Used in Operating Activities

Cash used in operating activities was $64.8 million for the year ending December 31, 2018. Cash was primarily used in our operations, which resulted in a net loss of $67.7 million, adjusted for non-cash stock-based compensation of $19.3 million and depreciation of $1.6 million. Other changes in cash provided by operations consisted of a decrease in deferred revenue of 33.6 million, a decrease in prepaid expenses and other current assets of $2.9 million, offset by increases in prepayments from Sanofi of $8.5 million and increases in accrued liabilities of $9.1 million.

Cash used in operating activities was $9.8 million for the year ended December 31, 2017. Cash was primarily used in our operations, which resulted in a net loss of $57.0 million, as adjusted for the implementation of ASC 606. Non-cash adjustments to loss from operations was primarily due to stock-based compensation of $6.1 million and depreciation of $1.3 million, as well as changes in other operating assets and liabilities, including a decrease of receivables from Sanofi of $44.0 million, prepayment of $4.4 million from Sanofi towards registration program costs under the mavacamten RPP and an increase in accrued liabilities of $3.0 million, offset by a decrease in deferred revenue of $11.4 million related to the continuation payment under the Sanofi Collaboration Agreement.

Cash used in operating activities in 2016 was primarily due to the use of funds in our operations that resulted in a net loss of $10.4 million, as adjusted for the implementation of ASC 606. Non-cash adjustments to loss from operations was primarily due to stock-based compensation expense of $2.8 million and depreciation expense of $1.1 million, as well as changes in other operating assets and liabilities including an increase of receivables from our collaboration partner of $45.0 million, an increase in deferred revenue of $28.0 million and an increase in accrued liabilities of $3.3 million.

Cash Used in Investing Activities

Cash used in investing activities totaled $99.8 million for the year ending December 31, 2018 and consisted of purchases of investments of $132.5 million and purchase of lab and office equipment of $3.4 million, offset by $8.0 million and $28.0 million in sales and maturities of investments, respectively.

Cash used in investing activities was $37.6 million for the year ended December 31, 2017 and consisted of purchases of investments of $44.0 million and purchases of lab and office equipment of $1.5 million, offset by sales and maturities of investments of $8.0 million.

Cash used in investing activities was $17.1 million for the year ended December 31, 2016 and consisted of purchases of investments of $16.0 million and purchases of lab and office equipment of $1.1 million.

Cash Provided by Financing Activities

Cash provided by financing activities in the year ended December 31, 2018 totaled $188.1 million and was provided by $181.9 million in proceeds from public offering of our common stock during the year, net of issuance costs, and $6.2 million in proceeds from employee stock option and stock purchase plan exercises.

Cash provided by financing activities in the year ended December 31, 2017 was $136.2 million consisting of net proceeds of $133.9 million received from the public offering of our common stock in August 2017 and proceeds of $2.4 million from the exercise of stock options and purchases under the employee stock purchase plan.

Cash provided by financing activities in the year ended December 31, 2016 consisted primarily of net proceeds of $61.1 million received from the public offering of our common stock in October 2016.

Off-Balance Sheet Arrangements

Since our inception, we have not engaged in any off-balance sheet arrangements, as defined in the rules and regulations of the SEC. See Note 6, Commitments and Contingencies, to our consolidated financial statements appearing in this annual report on Form 10-K regarding our guarantees and indemnifications.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The market risk inherent in our financial instruments represents the potential loss arising from adverse changes in interest rates or exchange rates. As of December 31, 2018, we had cash, cash equivalents and short-term and long-term investments of $394.8 million, consisting of interest-bearing money market accounts and money market funds, which would be affected by changes in the general level of United States interest rates. However, due to the short-term maturities of our cash and cash equivalents and the low- risk profile of our investments, an immediate 100 basis point change in interest rates would not have a material effect on the fair value of our cash, cash equivalents or investments.

In addition, we are also exposed to foreign currency exchange rate risk inherent in our contracts with research institutions and contract research organizations as certain services are performed by them outside the United States. We have payments due to one Australian vendor in foreign currency. A significant movement in the Australian dollar may have a material impact on our financial position in the future.

We do not believe that inflation, interest rate changes or exchange rate fluctuations had a significant impact on our results of operations for any periods presented.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Our consolidated financial statements and supplementary data and the report of our independent registered public accounting firm are included in Item 15 of this Annual Report on Form 10-K on pages F-1 through F-30.

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

The term “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, refers to controls and procedures that are designed to provide reasonable assurance 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 SEC’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to provide reasonable assurance 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, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure. Our management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and our management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Our disclosure controls and procedures are designed to provide reasonable assurance of achieving their control objectives.

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, has evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2018, the end of the period covered by this Annual Report on Form 10-K. Based upon such evaluation, our Chief Executive Officer and Principal Financial and Accounting Officer have concluded that our disclosure controls and procedures were effective at the reasonable assurance level as of such date.

Management's Annual Report on Internal Control Over Financial Reporting

The Company's management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act). Internal control over financial reporting is a process designed under the supervision and with the participation of our management, including the individuals serving as our principal executive officer and principal financial and accounting officer, 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. Management conducted an assessment of the effectiveness of the Company's internal control over financial reporting based on the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control "Internal Control - Integrated Framework" (2013 Framework). Based on this assessment, our management concluded that, as of December 31, 2018, the Company's internal control over financial reporting was effective based on those criteria. The effectiveness of our internal control over financial reporting as of December 31, 2018 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm as stated in its report which is included in this Form 10-K.

Changes in Internal Control Over Financial Reporting

There has been no change in our internal control over financial reporting during the 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

Adoption of Amended Change in Control and Severance Policy

On February 25, 2019, the Compensation Committee of our Board of Directors adopted an amended Change in Control and Severance Policy (the "Policy"). The amendments relate to the addition of non-change in control severance provisions and certain other adjustments for senior management employees, as further described below.

Pursuant to the Policy, in the event any of our named executive officers experiences an Involuntary Termination (as such term is defined in the Policy) including a Sale Event Termination (as such term is defined in the Policy), he or she will be entitled to receive the following payments and benefits, subject to his or her execution and non-revocation of a severance agreement within 60 days following the date of such termination, including a general release of claims:

Involuntary Termination Benefits

- a lump sum cash payment equal to 9 months (or 12 months in the case of Mr. Gianakakos as our Chief Executive Officer) of the named executive officer's then-current base salary; and
- if the named executive officer elects to continue his or her group healthcare benefits, payment of an amount equal to the monthly employer contribution we would have made to provide the named executive officer with health insurance if he or she had remained employed by us until the earlier of (i) 9 months (or 12 months in the case of Mr. Gianakakos as our Chief Executive Officer) following the date of termination or (ii) the end of the named executive officer's COBRA health continuation period

Sale Event Termination Benefits

- a lump sum cash payment equal to 12 months (or 18 months in the case of Mr. Gianakakos as our Chief Executive Officer) of the named executive officer's then-current base salary;

- payment of the named executive officer's target annual incentive compensation (or 1.5x in the case of Mr. Gianakakos as our Chief Executive Officer);
- if the named executive officer elects to continue his or her group healthcare benefits, payment of an amount equal to the monthly employer contribution we would have made to provide the named executive officer with health insurance if he or she had remained employed by us until the earlier of (i) 12 months (or 18 months in the case of Mr. Gianakakos as our Chief Executive Officer) following the date of termination or (ii) the end of the named executive officer's COBRA health continuation period; and
- all stock options and other stock-based awards with time-based vesting conditions granted to the named executive officer will become fully exercisable and non-forfeitable as of the date of the named executive officer's termination.

In addition, upon a Sale Event Termination, to the extent Sections 280G and 4999 of the Code are applicable, each named executive officer who is then employed with us will be entitled to receive the better treatment of: (i) payment of the full amounts set forth above to which the named executive officer is entitled or (ii) payment of such lesser amount that does not trigger excise taxes under Section 4999 of the Code.

In all other material respects, the terms of the Policy remain unchanged. The information set forth herein with respect to the Policy does not purport to be complete in scope and is qualified in its entirety by the full text of the Policy, which is being filed as Exhibit 10.12 and is incorporated into this report by reference.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Except as set forth below, the information required by this item will be contained in our definitive proxy statement to be filed with the SEC in connection with the Annual Meeting of Stockholders within 120 days after the conclusion of our fiscal year ended December 31, 2018, or the Proxy Statement, and is incorporated in this Annual Report on Form 10-K by reference.

We have adopted a written code of business conduct and ethics that applies to our directors, officers and employees, including our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions. A current copy of the code is posted on the Corporate Governance section of our website, which is located at www.myokardia.com. If we make any substantive amendments to, or grant any waivers from, the code of business conduct and ethics for our principal executive officer, principal financial officer, principal accounting officer, controller or persons performing similar functions, or any officer or director, we will disclose the nature of such amendment or waiver on our website or in a current report on Form 8-K.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this item will be contained in the Proxy Statement and is incorporated in this Annual Report on Form 10-K by reference.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by this item will be contained in the Proxy Statement and is incorporated in this Annual Report on Form 10-K by reference.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by this item will be contained in the Proxy Statement and is incorporated in this Annual Report on Form 10-K by reference.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by this item will be contained in the Proxy Statement and is incorporated in this Annual Report on Form 10-K by reference.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) The following documents are filed as part of this report:

(1) FINANCIAL STATEMENTS

Financial Statements—See Index to Consolidated Financial Statements at Item 8 of this Annual Report on Form 10-K, beginning on page F-1.

(2) FINANCIAL STATEMENT SCHEDULES

Financial statement schedules have been omitted in this Annual Report on Form 10-K because they are not applicable, not required under the instructions, or the information requested is set forth in the consolidated financial statements or related notes thereto.

(b) Exhibits. See Item 15(b) below for a complete list of Exhibits to this report.

EXHIBIT INDEX

Exhibit Number	Exhibit Title	Incorporated by Reference			Filing Date
		Form	File No.	Exhibit	
3.1	Restated Certificate of Incorporation of the Registrant	10-Q	001-37609	3.1	November 18, 2015
3.2	Amended and Restated Bylaws of the Registrant	S-1/A	333-207151	3.4	October 13, 2015
4.1	Specimen Common Stock Certificate	S-1/A	333-207151	4.1	October 19, 2015
4.2	Second Amended and Restated Investors' Rights Agreement, by and among the Registrant and certain of its stockholders dated April 20, 2015	S-1	333-207151	4.2	September 28, 2015
4.3	Amendment No. 1 to Second Amended and Restated Investors' Rights Agreement, by and among the Registrant and certain of its stockholders dated April 20, 2015	S-1	333-207151	4.3	September 28, 2015
10.1#	2012 Equity Incentive Plan and forms of award agreements thereunder	S-1	333-207151	10.1	September 28, 2015
10.2#	2015 Stock Option and Incentive Plan and forms of award agreements thereunder	S-1/A	333-207151	10.2	October 19, 2015
10.3#	Employment Offer Letter Agreement, by and between the Registrant and Robert S. McDowell, Ph.D., dated June 8, 2012	S-1	333-207151	10.3	September 28, 2015
10.4#	Employment Offer Letter Agreement, by and between the Registrant and T. Anastasios Gianakakos, dated September 19, 2013	S-1	333-207151	10.4	September 28, 2015
10.5#	Employment Offer Letter Agreement, by and between the Registrant and Jacob Bauer, dated July 2, 2014	S-1	333-207151	10.5	September 28, 2015
10.6#	Employment Offer Letter Agreement, by and between the Registrant and William Fairey, dated January 5, 2019	—	—	—	Filed herewith
10.7#	Employment Offer Letter Agreement, by and between the Registrant and Joseph Lambing, Ph.D., dated February 27, 2014	S-1	333-207151	10.7	September 28, 2015

Exhibit Number	Exhibit Title	Incorporated by Reference			Filing Date
		Form	File No.	Exhibit	
10.8	Lease Agreement, by and between the Registrant and HCP LS Redwood City, LLC, dated September 15, 2014	S-1	333-207151	10.9	September 28, 2015
10.9†	License and Collaboration Agreement, by and between the Registrant and Aventis Inc., dated August 1, 2014	S-1/A	333-207151	10.10	October 27, 2015
10.10#	Form of Indemnification Agreement, by and between the Registrant and each of its directors and officers	S-1/A	333-207151	10.11	October 13, 2015
10.11#	2015 Employee Stock Purchase Plan	S-1/A	333-207151	10.14	October 19, 2015
10.12#	Change in Control and Severance Policy	—	—	—	Filed herewith
10.13#	Amended and Restated Non-Employee Director Compensation Policy	—	—	—	Filed herewith
10.14#	Senior Executive Cash Incentive Bonus Plan	8-K	001-37609	10.1	February 5, 2016
10.15#	Employment Offer Letter Agreement by and between the Registrant and June Lee, dated December 2, 2016.	8-K	001-37609	10.1	February 1, 2017
10.16#	Employment Offer Letter Agreement by and between the Registrant and Marc Semigran, dated October 28, 2016.	10-K	001-37609	10.16	March 8, 2018
10.17#	Employment Offer Letter Agreement by and between the Registrant and Cynthia Ladd, dated December 4, 2017.	10-K	001-37609	10.17	March 8, 2018
10.18	Sublease Agreement by and between the Registrant and REG Life Sciences, LLC, dated October 1, 2017.	10-K	001-37609	10.18	March 8, 2018
10.19	Amendment No. 1 to Sublease Agreement by and between the Registrant and REG Life Sciences, LLC, dated January 1, 2018.	10-Q	001-37609	10.2	May 8, 2018
10.20#	Employment Offer Letter Agreement by and between the Registrant and Taylor Harris, dated March 26, 2018.	8-K	001-37609	10.1	April 4, 2018
10.21	Lease by and between the Registrant and HCP LS Brisbane, LLC dated September 13, 2018.	10-Q	001-37609	10.1	November 8, 2018
10.22	Lease by and between the Registrant and Kashiwa Fudosan America, Inc. dated October 22, 2018.	—	—	—	Filed herewith
23.1	Consent of independent registered public accounting firm	—	—	—	Filed herewith
24.1	Power of attorney (included on signature page to this Annual Report)	—	—	—	Filed herewith
31.1	Certification of Principal Executive Officer of the Registrant, as required by Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.	—	—	—	Filed herewith
31.2	Certification of Principal Financial Officer of the Registrant, as required by Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.	—	—	—	Filed herewith

Exhibit Number	Exhibit Title	Incorporated by Reference			Filing Date
		Form	File No.	Exhibit	
32.1	Certification by the Principal Executive Officer, as required by Rule 13a-14(b) or Rule 15d-14(b) and Section 1350 of Chapter 36 of Title 18 of the United States Code (18 U.S.C. §1350).	—	—	—	Filed herewith
32.2	Certification by the Principal Financial Officer, as required by Rule 13a-14(b) or Rule 15d-14(b) and Section 1350 of Chapter 36 of Title 18 of the United States Code (18 U.S.C. §1350).	—	—	—	Filed herewith
101.INS	XBRL Instance Document	—	—	—	Filed herewith
101.SCH	XBRL Taxonomy Extension Schema Document	—	—	—	Filed herewith
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document	—	—	—	Filed herewith
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document	—	—	—	Filed herewith
101.LAB	XBRL Taxonomy Extension Label Linkbase Document	—	—	—	Filed herewith
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document	—	—	—	Filed herewith

† An order for confidential treatment of certain provisions has been granted by the Securities and Exchange Commission. Omitted material for which confidential treatment has been requested has been filed separately with the Securities and Exchange Commission.

Represents management compensation plan, contract or arrangement.

ITEM 16. FORM 10-K SUMMARY

None.

MYOKARDIA, INC.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of
MyoKardia, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of MyoKardia, Inc. and its subsidiary (the "Company") as of December 31, 2018 and 2017, and the related consolidated statements of operations and comprehensive loss, of stockholders' equity and of cash flows for each of the three years in the period ended December 31, 2018, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above 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 three years in the period ended December 31, 2018 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note 2 to the consolidated financial statements, the Company changed the manner in which it accounts for revenues from contracts with customers in 2018.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Annual Report on Internal Control Over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting 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 audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated 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 consolidated 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 consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit 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 (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ PricewaterhouseCoopers LLP
San Jose, California
February 28, 2019

We have served as the Company's auditor since 2014.

MYOKARDIA, INC.

Consolidated Balance Sheets
(In thousands, except share and per share amounts)

	As of December 31,	
	2018	2017
		As Revised (Note 2)
Assets		
Current assets		
Cash and cash equivalents	$ 246,122	$ 224,571
Short-term investments	68,564	31,933
Receivable from collaboration partner	—	1,013
Prepaid expenses and other current assets	4,760	1,876
Total current assets	319,446	259,393
Property and equipment, net	5,138	3,147
Long-term investments	80,148	19,900
Restricted cash and other	2,521	368
Total assets	$ 407,253	$ 282,808
Liabilities and stockholders' equity		
Current liabilities		
Accounts payable	$ 2,946	$ 2,301
Accrued liabilities	20,758	11,639
Prepayment from collaboration partner	12,973	4,432
Deferred revenue	—	33,558
Total current liabilities	36,677	51,930
Other long-term liabilities	9	202
Total liabilities	36,686	52,132
Commitments and contingencies (Note 6)		
Stockholders' equity		
Preferred stock, $0.0001 par value; 5,000,000 shares authorized; none issued and outstanding	—	—
Common stock, $0.0001 par value, 150,000,000 shares authorized at December 31, 2018 and 2017; 40,288,949 and 35,812,791 shares issued and outstanding at December 31, 2018 and 2017, respectively	4	4
Additional paid-in capital	573,183	365,719
Accumulated other comprehensive loss	(67)	(192)
Accumulated deficit	(202,553)	(134,855)
Total stockholders' equity	370,567	230,676
Total liabilities and stockholders' equity	$ 407,253	$ 282,808

The accompanying notes are an integral part of these Consolidated Financial Statements

MYOKARDIA, INC.

Consolidated Statements of Operations and Comprehensive Loss
(In thousands, except share and per share amounts)

	Year Ended December 31,		
	2018	2017	2016
		As Revised (Note 2)	
Collaboration and license revenue	$ 33,558	$ 11,442	$ 41,971
Operating expenses:			
Research and development, net	68,774	48,136	36,215
General and administrative	38,435	21,973	16,289
Total operating expenses	107,209	70,109	52,504
Loss from operations	(73,651)	(58,667)	(10,533)
Interest and other income, net	5,953	1,657	153
Net loss	(67,698)	(57,010)	(10,380)
Other comprehensive income (loss)	125	(200)	8
Comprehensive loss	$ (67,573)	$ (57,210)	$ (10,372)
Net loss per share, basic and diluted	$ (1.76)	$ (1.74)	$ (0.38)
Weighted average number of shares used to compute net loss per share, basic and diluted	38,386,906	32,832,514	27,475,792

The accompanying notes are an integral part of these Consolidated Financial Statements

MYOKARDIA, INC.
Consolidated Statements of Stockholders' Equity
(In thousands, except share amounts)

	Common Stock		Additional Paid-In Capital	Accumulated other comprehensive income/ (loss)	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount				
					As revised (Note 2)	
BALANCE—December 31, 2015	27,053,156	$ 3	$ 158,555	$ —	$ (64,685)	$ 93,873
Impact of implementation of ASC 606 using full retrospective transition method (Note 2)	—	—	—	—	$ (2,772)	(2,772)
Issuance of common stock in connection with the 2016 follow-on offering, net of issuance costs of $4,441	4,370,000	—	61,110	—	—	61,110
Issuance of common stock upon the exercise of options and purchases under employee stock purchase plan	71,826	—	506	—	—	506
Repurchase of early exercised stock options	(65,984)	—	(48)	—	—	(48)
Vesting of early exercised stock options and restricted stock	—	—	272	—	—	272
Stock-based compensation	—	—	2,813	—	—	2,813
Unrealized gains, net of tax benefits	—	—	—	8	—	8
Net loss	—	—	—	—	(10,380)	(10,380)
BALANCE—December 31, 2016	31,428,998	$ 3	$ 223,208	$ 8	$ (77,837)	$ 145,382
Issuance of common stock in connection with the 2017 follow-on offering, net of issuance costs of $9,025	4,025,000	1	133,861	—	—	133,862
Issuance of common stock upon the exercise of options and purchases under employee stock purchase plan	400,754	—	2,365	—	—	2,365
Repurchase of early exercised stock options	(41,961)	—	(45)	—	—	(45)
Vesting of early exercised stock options and restricted stock	—	—	184	—	—	184
Stock-based compensation	—	—	6,138	—	—	6,138
Cumulative effect adjustment upon adoption of ASU 2016-09	—	—	8	—	(8)	—
Unrealized losses, net of tax benefits	—	—	—	(200)	—	(200)
Net loss	—	—	—	—	(57,010)	(57,010)
BALANCE—December 31, 2017	35,812,791	$ 4	$ 365,719	$ (192)	$ (134,855)	$ 230,676
Issuance of common stock in connection with the 2018 follow-on offering, net of issuance costs of $12,233	3,961,147	—	181,863	—	—	181,863
Issuance of common stock upon the exercise of options and purchases under employee stock purchase plan	516,008	—	6,208	—	—	6,208
Repurchase of early exercised stock options	(997)	—	(1)	—	—	(1)
Vesting of early exercised stock options and restricted stock	—	—	53	—	—	53
Stock-based compensation	—	—	19,341	—	—	19,341
Unrealized gains, net of tax benefits	—	—	—	125	—	125
Net loss	—	—	—	—	(67,698)	(67,698)
BALANCE—December 31, 2018	40,288,949	$ 4	$ 573,183	$ (67)	$ (202,553)	$ 370,567

The accompanying notes are an integral part of these Consolidated Financial Statements

MYOKARDIA, INC.
Consolidated Statements of Cash Flows
(In thousands)

	Year Ended December 31,		
	2018	2017	2016
		As Revised (Note 2)	
Cash flows from operating activities:			
Net loss	$ (67,698)	$ (57,010)	$ (10,380)
Adjustments to reconcile net loss to net cash used in operating activities:			
Stock-based compensation expense	19,341	6,138	2,813
Depreciation	1,567	1,294	1,111
Amortization of premiums on investments	(279)	85	—
Loss on disposal of equipment	—	4	—
Changes in operating assets and liabilities:			
Receivable from collaboration partner	1,013	43,987	(45,000)
Prepaid expenses and other current assets	(2,884)	(482)	(112)
Other long-term assets	(296)	(59)	(24)
Accounts payable	671	367	(434)
Accrued liabilities	8,945	2,968	3,250
Prepayment from collaboration partner	8,541	4,432	—
Other long-term liabilities	(178)	(120)	(109)
Deferred revenue	(33,558)	(11,442)	28,029
Net cash used in operating activities	(64,815)	(9,838)	(20,856)
Cash flow from investing activities:			
Purchases of investments	(132,475)	(44,044)	(16,060)
Sales of investments	8,000	4,000	—
Maturities of investments	28,000	4,000	—
Purchases of property and equipment	(3,373)	(1,517)	(1,083)
Proceeds from sale of equipment	—	10	—
Net cash used in investing activities	(99,848)	(37,551)	(17,143)
Cash flow from financing activities:			
Proceeds from issuance of common stock during follow-on offerings, net of issuance costs	181,863	133,862	61,148
Proceeds from exercise of stock options and employee stock purchase plan	6,208	2,365	506
Payments of prior period offering costs	—	(38)	(153)
Net cash provided by financing activities	188,071	136,189	61,501
Net increase in cash and cash equivalents	23,408	88,800	23,502
Cash, cash equivalents and restricted cash at beginning of period	224,857	136,057	112,555
Cash, cash equivalents and restricted cash at end of period	$ 248,265	$ 224,857	$ 136,057
Non-cash investing and financing activities:			
Vesting of early exercised options and restricted stock	$ 53	$ 184	$ 272
Unpaid portion of property and equipment purchases included in period-end accounts payable and accrued liabilities	$ 468	$ 283	$ 103
Unpaid financing-related costs included in period-end accounts payable and accrued liabilities	$ —	$ —	$ 38

The accompanying notes are an integral part of these Consolidated Financial Statements

1. Organization

MyoKardia, Inc. (the "Company") is a clinical-stage biopharmaceutical company pioneering a precision medicine approach to discover, develop and commercialize targeted therapies for the treatment of serious and neglected rare cardiovascular diseases. The Company's initial focus is on the treatment of heritable cardiomyopathies, a group of rare, genetically driven forms of heart failure that result from biomechanical defects in cardiac muscle contraction. The Company has used its precision medicine platform to generate a robust pipeline of therapeutic programs. MyoKardia's most advanced program, mavacamten, is in four clinical trials, including a pivotal Phase 3 study for the treatment of hypertrophic cardiomyopathy. A second clinical-stage candidate, MYK-491, is in a Phase 2a multiple-ascending dose study in patients with stable systolic heart failure. The Company was incorporated on June 8, 2012 in Delaware and its corporate headquarters and operations are located in South San Francisco, California.

Liquidity

The Company has incurred significant operating losses since inception and has an accumulated deficit of $202.6 million as of December 31, 2018. The Company has relied on its ability to fund its operations through private and public equity financings and to a lesser extent, through a license and collaboration arrangement with a collaboration partner, Sanofi S.A. ("Sanofi") via its subsidiary, Aventis, Inc. As discussed further in Note 3, the collaboration agreement ended on December 31, 2018 and the Company will no longer record revenues from Sanofi in 2019 nor receive reimbursements of research and development expenses after June 30, 2019. The Company has not yet received regulatory approval to commercialize or sell any product and does not have customers. Management expects operating losses and negative operating cash flows to continue for the foreseeable future. As the Company continues to incur losses, a transition to profitability is dependent upon the successful development, approval, and commercialization of the Company's products and product candidates and the achievement of a level of revenues adequate to support its cost structure. The Company's ultimate success depends on the outcome of its research and development activities. The Company expects to incur additional losses and negative cash flows for the foreseeable future and it anticipates the need to raise additional capital to fully implement its business plan. The Company intends to raise such capital through the issuance of additional equity, debt and/or strategic alliances with partner companies. There is no assurance that such financing will be available on terms acceptable to the Company, if at all.

On March 8, 2018, the Company filed a Shelf Registration Statement ("2018 Shelf Registration Statement") covering the potential offering, issuance, and sale of an indeterminate amount of common stock, preferred stock, debt securities, warrants and/or units. In May 2018, the Company completed a follow-on offering under the 2018 Shelf Registration Statement pursuant to which the Company issued 3,750,000 shares of common stock at a price of $49.00 per share. In June 2018, the Company sold an additional 211,147 shares of common stock directly to the underwriters when they partially exercised their over-allotment option at the price of $49.00 per share. In the quarter ended June 30, 2018, the Company received net proceeds totaling $181.9 million from the offering, net of underwriting discounts and commissions and offering expenses, which includes $9.7 million received due to the underwriters' partial exercise of their over-allotment option.

As of December 31, 2018, the Company had $394.8 million of cash, cash equivalents and short and long-term investments which management believes will be sufficient to meet the Company's anticipated operating and capital expenditure requirements for the twelve months following the date of this Form 10-K. Management's belief with respect to its ability to fund operations is based on estimates that are subject to risks and uncertainties. If actual results are different from management's estimates, the Company may need to seek additional funding.

2. Summary of Significant Accounting Policies

Basis of Presentation and Consolidation

The consolidated financial statements of the Company include the Company's accounts and have been prepared in conformity with accounting principles generally accepted in the United States of America ("US GAAP"). During 2015, the Company established a wholly-owned foreign subsidiary, MyoKardia Australia Pty Ltd. The consolidated financial statements include the Company's accounts and those of its wholly-owned subsidiary. All intercompany accounts, transactions and balances have been eliminated during consolidation. The functional and reporting currency of the Company and its subsidiary is the United States ("U.S.") Dollar.

Use of Estimates

The preparation of consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities and the reported amounts of revenues and expenses in the consolidated financial statements and the accompanying notes. On an ongoing basis, management evaluates its estimates, including those related to revenue recognition, clinical trial accruals, income taxes and stock-based compensation. Management bases its estimates on historical experience and on various other market-specific and relevant assumptions that management believes to be reasonable under the circumstances. Actual results could differ from those estimates.

Segments

The Company operates and manages its business as one reportable and operating segment, which is the business of developing and commercializing therapeutics. The Company's chief executive officer, who is the chief operating decision maker, reviews financial information on an aggregate basis for purposes of allocating and evaluating financial performance. All revenues have been earned in the United States of America, and all long-lived assets are maintained in the United States of America.

Cash and Cash Equivalents

Cash and cash equivalents consist of cash and other highly liquid investments with original maturities of three months or less from the date of purchase. At December 31, 2018 and 2017, the Company's cash and cash equivalents were comprised of funds held in checking accounts and interest-bearing money market accounts and money market funds.

Restricted Cash

Restricted cash at December 31, 2018 and 2017 comprises cash balances primarily held as security in connection with the Company's facility lease agreements and is included in restricted cash and other on the consolidated balance sheets.

Cash as Reported in Consolidated Statements of Cash Flows

Cash as reported in the consolidated statements of cash flows includes the aggregate amounts of cash and cash equivalents and the restricted cash as presented on the consolidated balance sheets.

Cash as reported in the consolidated statements of cash flows consists of (in thousands):

	As of December 31,		
	2018	2017	2016
Cash and cash equivalents	$ 246,122	$ 224,571	$ 135,797
Restricted cash - noncurrent	2,143	286	260
Cash balance in consolidated statements of cash flows	$ 248,265	$ 224,857	$ 136,057

Short-term and Long-term Investments

All investments have been classified as "available-for-sale" and are carried at fair value as determined based upon quoted market prices or pricing models for similar securities at period end. Generally, those investments with contractual maturities greater than 12 months are considered long-term investments. Unrealized gains and losses, deemed temporary in nature, are reported as a component of accumulated other comprehensive loss, net of tax, on the consolidated balance sheets.

A decline in the fair value of any security below cost that is deemed other than temporary results in a charge to earnings and the corresponding establishment of a new cost basis for the security. The amortized cost of securities is adjusted for amortization of premiums and accretion of discounts to maturity. Dividend and interest income are recognized when earned. Realized gains and losses are included in earnings and are derived using the specific identification method for determining the cost of securities sold.

Fair Value Measurements

Fair value accounting is applied for all financial assets and liabilities, including short-term and long-term investments, and non-financial assets and liabilities that are recognized or disclosed at fair value in the consolidated financial statements on a recurring basis (at least annually). The carrying amount of the Company's financial instruments, including the receivable from collaboration partner, accounts payable and accrued liabilities and other current liabilities approximate fair value due to their short-term maturities.

Concentration of Credit Risk

Financial instruments that potentially subject the Company to a concentration of credit risk consist of cash and cash equivalents and investments. All of the Company's cash and cash equivalents are held at financial institutions that management believes are of high credit quality. Such deposits may, at times, exceed federally insured limits. The Company invests in a variety of financial instruments, such as, but not limited to, corporate debt and United States Treasury and Government agency securities, and by policy, limits the amount of credit exposure with any one financial institution or commercial issuer. The Company has not experienced any credit losses on its investments.

Risk and Uncertainties

The Company's future results of operations involve a number of risks and uncertainties. Factors that could affect the Company's future operating results and cause actual results to vary materially from expectations include, but are not limited to, uncertainty of results of clinical trials and reaching milestones, uncertainty of regulatory approval of the Company's potential drug candidates, uncertainty of market acceptance of any of the Company's product candidates that receive regulatory approval, competition from substitute products and larger companies, securing and protecting proprietary technology, strategic relationships and dependence on key individuals and source suppliers.

Products developed by the Company require approvals from the U.S. Food and Drug Administration ("FDA") or other international regulatory agencies prior to commercial sales. There can be no assurance that any of the Company's product candidates will receive the necessary approvals. If the Company is denied approval, approval is delayed, or the Company is unable to maintain approvals, it could have a materially adverse impact on the Company.

The Company expects to incur substantial operating losses for the next several years and will need to obtain additional financing in order to complete clinical trials and launch and commercialize any product candidates for which it receives regulatory approval. There can be no assurance that such financing will be available or will be on terms acceptable by the Company.

Property and Equipment

Property and equipment are stated at cost and depreciated using the straight-line method over the estimated useful lives of the assets, ranging from two to five years. Leasehold improvements are amortized over the shorter of their estimated useful lives or the related lease term. Upon retirement or sale, the cost and related accumulated depreciation are removed from the consolidated balance sheet and the resulting gain or loss is reflected in the consolidated statement of operations and comprehensive loss.

Impairment of Long-lived Assets

The Company reviews long-lived assets, including property and equipment, for impairment whenever events or changes in business circumstances indicate that the carrying amount of the assets may not be fully recoverable. An impairment charge would be recorded when estimated undiscounted future cash flows expected to result from the use of the asset and its eventual disposition are less than its carrying amount. Impairment, if any, is assessed using discounted cash flows or other appropriate measures of fair value. Through December 31, 2018, there have been no such impairment charges.

Deferred Offering Costs

Deferred offering costs, consisting of legal, accounting and other fees and costs relating to the Initial Public Offering ("IPO") and follow-on public offerings were capitalized. The deferred offering costs were offset against the proceeds received upon the closing of the IPO and follow-on offerings. There were $0.4 million of deferred offering costs capitalized during 2017 upon the completion of the 2017 follow-on public offering, which were offset against the $134.3 million of proceeds received, net of underwriting discounts and commissions. There were $0.6 million of deferred offering costs capitalized during 2018 upon the completion of the 2018 follow-on public offering, which were offset against the $182.5 million of proceeds received, net of underwriting discounts and commissions. As of December 31, 2018 and 2017, there were no deferred offering costs capitalized on the consolidated balance sheets.

Revenue Recognition

The Company generates revenue from collaboration and license agreements for the development and commercialization of its products. Collaboration and license agreements may include non-refundable upfront license fees, partial or complete reimbursement of research and development costs, contingent consideration payments based on the achievement of defined collaboration objectives and royalties on sales of commercialized products. To date, the Company has not recognized revenue from sales of its product candidates.

Effective January 1, 2018, the Company adopted Accounting Standards Codification Topic 606, *Revenue from Contracts with Customers* ("ASC 606") using the full retrospective transition method. This standard applies to all contracts with customers, except for contracts that are within the scope of other standards, such as leases, insurance, certain collaboration arrangements and financial instruments. Under ASC 606, the Company recognizes revenue when its customer obtains control of promised goods or services, in an amount that reflects the consideration which the Company expects to receive in exchange for those goods or services. To determine revenue recognition for arrangements that the Company determines are within the scope of ASC 606, the Company performs the following five steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the Company satisfies a performance obligation. The Company only applies the five-step model to contracts when it is probable that Company will collect the consideration it is entitled to in exchange for the goods or services it transfers to the customer. At contract inception, once the contract is determined to be within the scope of ASC 606, the Company assesses the goods or services promised within each contract and determines those that are performance obligations and assesses whether each promised good or service is distinct. The Company then recognizes as revenue the amount of the transaction price that is allocated to the respective performance obligation when (or as) the performance obligation is satisfied.

Licenses of intellectual property: Upon the inception of a Collaboration Agreement, if the license to the Company's intellectual property is determined to be distinct from the other performance obligations identified in the arrangement, the Company recognizes revenue from non-refundable, up-front fees allocated to the license when the license is transferred to the customer and the customer is able to use and benefit from the license. For licenses that are bundled with other promises, the Company utilizes judgement to assess the nature of the combined performance obligation to determine whether the combined performance obligation is satisfied over time or at a point in time and, if over time, the appropriate method of measuring proportional performance for purposes of recognizing revenue from non-refundable, up-front fees. The Company evaluates the measure of proportional performance each reporting period and, if necessary, adjusts the measure of performance and related revenue recognition.

Milestone payments: At the inception of each arrangement that includes development, regulatory or commercial milestone payments, the Company evaluates whether the milestones are considered probable of being reached and estimates the amount to be included in the transaction price. ASC 606 suggests two alternatives to use when estimating the amount of variable consideration: the expected value method and the most likely amount method. Under the expected value method, an entity considers the sum of probability-weighted amounts in a range of possible consideration amounts. Under the most likely amount method, an entity considers the single most likely amount in a range of possible consideration amounts. Whichever method is used, it should be consistently applied throughout the life of the contract; however, it is not necessary for the Company to use the same approach for all contracts. The Company expects to use the most likely amount method for development and regulatory milestone payments. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within the control of the Company or the licensee, such as regulatory approvals, are not considered probable of being achieved until those approvals are received. The transaction price is then allocated to each performance obligation on a relative stand-alone selling price basis. The Company recognizes revenue when the performance obligations under the contract are satisfied. At the end of each subsequent reporting period, the Company re-evaluates the probability or achievement of each such milestone and any related constraint, and if necessary, adjusts its estimates of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, which would affect revenues and earnings in the period of adjustment.

Royalties: For arrangements that include sales-based royalties, including milestone payments based on the level of sales, and the license is deemed to be the predominant item to which the royalties relate, the Company recognizes revenue at the later of (i) when the related sales occur, or (ii) when the performance obligation to which some or all of the royalty has been allocated has been satisfied (or partially satisfied). To date, the Company has not recognized any royalty revenue resulting from its collaboration arrangement.

Up-front payments and fees are recorded as deferred revenue upon receipt or when due and may require deferral of revenue recognition to a future period until the Company performs its obligations under these arrangements. Amounts payable to the Company are recorded as accounts receivable when the Company's right to consideration is unconditional. The Company does not assess whether a contract has a significant financing component if the expectation at contract inception is such that the period between payment by the customer and the transfer of the promised goods or services to the customer will be one year or less.

Research and Development Expenses

Research and development costs are expensed as incurred and consist of salaries and benefits, lab supplies and facility costs, and fees paid to others that conduct certain research and development activities on the Company's behalf. Amounts incurred in connection with collaboration and license agreements are also included in research and development expense. Under the terms of the Collaboration Agreement, the Company and Sanofi are sharing qualified research and development expenses that are jointly incurred in order to register mavacamten. Such cost sharing ends June 30, 2019, the end of the Collaboration agreement for the mavacamten registration program plan activities ("RPP"). Sanofi is reimbursing the Company 100% of preapproved costs incurred in the development of MYK-224 through March 31, 2019, the end of the Collaboration Agreement program term for this compound. Qualified costs consist of internal and external research and development expenses including employee costs and direct out-of-pocket costs that are specifically identifiable or reasonably and directly related to the development of mavacamten and MYK-224. Examples of qualified costs include those incurred for clinical trials, preparation for regulatory approval, manufacture or purchase of product for use in trials and development of manufacturing processes. The Company reduces its research and development expenses during the period by the amounts expected to be received from Sanofi.

Preclinical Study and Clinical Trial Accruals

The Company's preclinical study and clinical trial accruals are a component of research and development expenses and based on patient enrollment and related costs at clinical investigator sites as well as estimates for the services received and efforts expended pursuant to contracts with multiple research institutions and clinical research organizations ("CROs") that conduct and manage clinical trials on the Company's behalf.

The Company estimates preclinical study and clinical trial expenses based on the services performed, pursuant to contracts with research institutions and CROs that conduct and manage preclinical studies and clinical trials on its behalf. The Company estimates these expenses based on discussions with internal clinical management personnel and external service providers as to the progress or stage of completion of trials or services and the contracted fees to be paid for such services. If the actual timing of the performance of services or the level of effort varies from the original estimates, the Company will adjust the accrual accordingly. Payments made to third parties under these arrangements in advance of the performance of the related services by the third parties are recorded as prepaid expenses until the services are rendered.

Stock-Based Compensation

The Company accounts for stock-based compensation arrangements with employees in accordance with ASC 718, *Stock Compensation*. Stock-based awards granted include stock options with time-based vesting, performance-based stock options, market-based stock options and restricted stock units ("RSU"s). ASC 718 requires the recognition of compensation expense, using a fair value-based method, for costs related to all stock-based payments. The Company's determination of the fair value of stock options with time-based vesting on the date of grant utilizes the Black-Scholes option-pricing model, and is impacted by its common stock price as well as other variables including, but not limited to, expected term that options will remain outstanding, expected common stock price volatility over the term of the option awards, risk-free interest rates and expected dividends.

Stock-based compensation expense for performance stock options is based on the probability of achieving certain performance criteria, as defined in the individual option grant agreement. The Company estimates the number of performance options ultimately expected to vest and recognizes stock-based compensation expense for those options expected to vest when it becomes probable that the performance criteria will be met and the options vest. The Company has also granted stock options to purchase common stock that vest upon the achievement of market-based stock price targets.

The fair value of a stock-based award is recognized over the period during which an optionee is required to provide services in exchange for the option or RSU award, known as the requisite service period (usually the vesting period), on a straight-line basis. As permitted under ASU 2016-09, beginning January 1, 2017, the Company has elected to recognize forfeitures as they occur, and no longer estimates a forfeiture rate when calculating the stock-based compensation for our equity awards. Through December 31, 2016, stock-based compensation expense recognized at fair value included the impact of estimated forfeitures as the Company estimated future forfeitures at the date of grant and revised the estimates, if necessary, in subsequent periods if actual forfeitures differed from those estimates.

Equity instruments issued to non-employees are recorded at their fair value on the measurement date and are subject to periodic adjustments as the underlying equity instruments vest. The fair value of options granted to consultants is expensed when vested. Non-employee stock-based compensation expense was not material for all periods presented.

Estimating the fair value of equity-settled awards as of the grant date using valuation models, such as the Black-Scholes option pricing model, is affected by assumptions regarding a number of complex variables. Changes in the assumptions can materially affect the fair value and ultimately how much stock-based compensation expense is recognized. These inputs are subjective and generally require significant analysis and judgment to develop.

Expected Term—The expected term assumption represents the weighted-average period that the Company's stock-based awards are expected to be outstanding. The expected term of the Company's options exceeds the number of years the Company has been a publicly held corporation; therefore, the Company has opted to use the "simplified method" for estimating the expected term of the options. The simplified method is calculated as average of the vesting term and the original contractual term of the option.

Expected Volatility—For all stock options granted to date, the volatility data was estimated based on a study of the Company's trading history and that of its publicly traded industry peer companies. For purposes of identifying these peer companies, the Company considered the industry, stage of development, size and financial leverage of potential comparable companies.

Expected Dividend—The Black-Scholes valuation model calls for a single expected dividend yield as an input. The Company currently has no history or expectation of paying cash dividends on its common stock.

Risk-Free Interest Rate—The risk-free interest rate is based on the yield available on U.S. Treasury zero-coupon issues similar in duration to the expected term of the equity-settled award.

Income Taxes

The Company accounts for income taxes under the asset and liability method. Current income tax expense or benefit represents the amount of income taxes expected to be payable or refundable for the current year. Deferred income tax assets and liabilities are determined based on differences between the financial statement reporting and tax bases of assets and liabilities and net operating loss and credit carryforwards and are measured using the enacted tax rates and laws that will be in effect when such items are expected to reverse. Deferred income tax assets are reduced, as necessary, by a valuation allowance when management determines it is more likely than not that some or all of the tax benefits will not be realized.

The Company accounts for uncertain tax positions in accordance with ASC 740-10, *Accounting for Uncertainty in Income Taxes.* The Company assesses all material positions taken in any income tax return, including all significant uncertain positions, in all tax years that are still subject to assessment or challenge by relevant taxing authorities. Assessing an uncertain tax position begins with the initial determination of the position's sustainability and is measured at the largest amount of benefit that is greater than fifty percent likely of being realized upon ultimate settlement. As of each balance sheet date, unresolved uncertain tax positions must be reassessed, and the Company will determine whether (i) the factors underlying the sustainability assertion have changed and (ii) the amount of the recognized tax benefit is still appropriate. The recognition and measurement of tax benefits requires significant judgment. Judgments concerning the recognition and measurement of a tax benefit might change as new information becomes available.

The Company includes penalties and interest expense related to income taxes as a component of interest and other income, net.

Comprehensive Income (Loss)

Comprehensive income (loss) is defined as a change in equity of a business enterprise during a period resulting from transactions from non-owner sources. The Company's comprehensive income and losses are primarily due to unrealized gains and losses from its available-for-sale securities that are excluded from reported net loss, which qualified as other comprehensive income (loss) presented in the consolidated statements of operations and comprehensive loss.

Net Loss per Share of Common Stock

Basic net loss per common share is calculated by dividing the net loss by the weighted-average number of common shares outstanding during the period, without consideration of potentially dilutive securities. Diluted net loss per share is computed by dividing the net loss by the weighted-average number of common shares and potentially dilutive common share equivalents outstanding during the period. The Company has reported a net loss for all periods presented, diluted net loss per common share is the same as basic net loss per common share for all periods.

Adopted Accounting Pronouncements – Revenue Recognition

As previously noted, effective January 1, 2018, the Company adopted ASC 606 using the full retrospective transition method. This standard applies to all contracts with customers, except for contracts that are within the scope of other standards, such as leases, insurance, certain collaboration arrangements and financial instruments. Under ASC 606, the Company recognizes revenue when its

customer obtains control of promised goods or services, in an amount that reflects the consideration which the Company expects to receive in exchange for those goods or services. To determine revenue recognition for arrangements that the Company determines are within the scope of ASC 606, the Company performs the following five steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the Company satisfies a performance obligation. The Company only applies the five-step model to contracts when it is probable that Company will collect the consideration it is entitled to in exchange for the goods or services it transfers to the customer. At contract inception, once the contract is determined to be within the scope of ASC 606, the Company assesses the goods or services promised within each contract and determines those that are performance obligations and assesses whether each promised good or service is distinct. The Company then recognizes as revenue the amount of the transaction price that is allocated to the respective performance obligation when (or as) the performance obligation is satisfied.

Impact of Adoption – ASC 606

The Company entered into a license and collaboration agreement that became effective in August 2014, which is within the scope of ASC 606, under which it has licensed certain rights to its HCM-1 (which includes mavacamten and MYK-224), HCM-2 and DCM-1 (which includes MYK-491) programs to Sanofi and may enter into other such arrangements in the future. The terms of the arrangement include payment to the Company of one or more of the following: non-refundable, up-front license fees, development and regulatory and commercial milestone payments, and royalties on net sales of licensed products.

The Company has applied the five-step model of the new standard to the Company's contract with Sanofi, as it is the only contract that will be impacted by the adoption of the new revenue standards. The Company has implemented the new revenue standard using the full retrospective transition method and has revised its comparative financial statements as if ASC 606 had been effective for those periods. The license and collaboration agreement provided for upfront, milestone and continuation payments, which the Company has recognized in revenues in full as of December 31, 2018.

The following tables summarize the financial statement line items that were affected due to the Company's implementation of ASC 606 (in thousands, except for share and per share amounts):

Consolidated Balance Sheets

	December 31, 2017		
	As Originally Reported	Effect of Change	As Revised
Deferred revenue - current	$ 22,500	$ 11,058	$ 33,558
Accumulated deficit	$ (123,797)	$ (11,058)	$ (134,855)

Consolidated Statements of Operations and Comprehensive Losses

	Year Ended December 31, 2017		
	As Originally Reported	Effect of Change	As Revised
Collaboration and license revenue	$ 22,500	$ (11,058)	$ 11,442
Operating expenses:			
Research and development	48,136	—	48,136
General and administrative	21,973	—	21,973
Total operating expenses	70,109	—	70,109
Loss from operations	(47,609)	(11,058)	(58,667)
Interest and other income, net	1,657	—	1,657
Net loss	(45,952)	(11,058)	(57,010)
Other comprehensive loss	(200)	—	(200)
Comprehensive loss	(46,152)	(11,058)	(57,210)
Net loss per share, basic and diluted	$ (1.40)	$ (0.34)	$ (1.74)
Weighted average number of shares used to compute net loss per share, basic and diluted	32,832,514	—	32,832,514

	Year Ended December 31, 2016		
	As Originally Reported	Effect of Change	As Revised
Collaboration and license revenue	$ 39,199	$ 2,772	$ 41,971
Operating expenses:			
Research and development	36,215	—	36,215
General and administrative	16,289	—	16,289
Total operating expenses	52,504	—	52,504
Loss from operations	(13,305)	2,772	(10,533)
Interest and other income, net	153	—	153
Net loss	(13,152)	2,772	(10,380)
Other comprehensive gain	8	—	8
Comprehensive loss	(13,144)	2,772	(10,372)
Net loss per share, basic and diluted	$ (0.48)	$ 0.10	$ (0.38)
Weighted average number of shares used to compute net loss per share, basic and diluted	27,475,792	—	27,475,792

Consolidated Statements of Cash Flows

	Year Ended December 31, 2017		
	As Originally Reported	Effect of Change	As Revised
Net loss	$ (45,952)	$ (11,058)	$ (57,010)
Adjustments to reconcile net loss to net cash used in operating activities:			
Deferred revenue	$ (22,500)	$ 11,058	$ (11,442)
Cash, cash equivalents and restricted cash, beginning of period	$ 135,797	$ 260	$ 136,057
Cash, cash equivalents and restricted cash, end of period	$ 224,571	$ 286	$ 224,857

	Year Ended December 31, 2016		
	As Originally Reported	Effect of Change	As Revised
Net loss	$ (13,152)	$ 2,772	$ (10,380)
Adjustments to reconcile net loss to net cash used in operating activities:			
Deferred revenue	$ 30,801	$ (2,772)	$ 28,029
Cash, cash equivalents and restricted cash, beginning of period	$ 112,265	$ 290	$ 112,555
Cash, cash equivalents and restricted cash, end of period	$ 135,797	$ 260	$ 136,057

The changes to net loss and deferred revenue in the consolidated statement of cash flows, as revised above, reflects:

(i) for the year ended December 31, 2017, the Company's determination that the Sanofi continuation payment of $45.0 million received in January 2017 relates to three performance obligations that were previously accounted for as one combined unit of accounting,

(ii) for the year ended December 31, 2016, the Company's determination that the Sanofi up-front payment of $35.0 million received in August 2014 relates to three performance obligations that were previously accounted for as one combined unit of accounting and,

(iii) the result of the Company utilizing a cost-based input method to measure proportional performance for both fiscal years, instead of straight-line.

As discussed in "Adopted Accounting Pronouncements – Other" below, the change to cash, cash equivalents and restricted cash in the table above reflects the Company's implementation of ASU 2016-18 whereby amounts generally described as restricted cash and restricted cash equivalents should be included with cash and cash equivalents when reconciling the beginning of period and end of period total amounts shown on the statement of cash flows. The Company implemented this change using a retrospective transition method.

Adopted Accounting Pronouncements – Other

In May 2017, the Financial Accounting Standards Board ("FASB") issued *ASU No. 2017-09—Compensation—Stock Compensation (Topic 718): Scope of Modification Accounting*. The amendments in this ASU provide guidance about which changes to the terms or conditions of a share-based payment award require an entity to apply modification accounting in Topic 718 to address diversity in practice. An entity should account for the effects of a modification unless all the three specified conditions are met. The current disclosure requirements in Topic 718 apply regardless of whether an entity is required to apply modification accounting under the amendments in this ASU. The amendments in this ASU 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 amendments in this ASU should be applied prospectively to an award modified on or after the adoption date. The adoption of this standard did not have a material impact on the Company's consolidated financial statements.

In November 2016, the FASB issued *ASU No. 2016-18 (Topic 230), Restricted Cash, Statement of Cash Flows*. This ASU 2016-18 requires that a statement of cash flows explain the change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents. Therefore, amounts generally described as restricted cash and restricted cash equivalents should be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. ASU 2016-18 is effective for public business entities for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years, with early adoption permitted. The amendments in this ASU should be applied using a retrospective transition method to each period presented. Other than the change in presentation in the accompanying consolidated statements of cash flows, the adoption of this guidance had no effect on the Company's financial position, results of operations or liquidity.

Recent Accounting Pronouncements

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

In November 2018, the FASB issued ASU 2018-18 (Topic 808), *Clarifying the Interaction Between Topic 808 and Topic 606*, which provides guidance on how to assess whether certain transactions between collaborative arrangement participants should be accounted for within the revenue recognition standard. The ASU also provides more comparability in the presentation of revenue for certain transactions between collaborative arrangement participants. It accomplishes this by allowing organizations to only present units of account in collaborative arrangements that are within the scope of the revenue recognition standard together with revenue accounted for under the revenue recognition standard. The parts of the collaborative arrangement that are not in the scope of the revenue recognition standard should be presented separately from revenue accounted for under the revenue recognition standard. For public companies, the amendments in ASU No. 2018-18 are effective for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years. Early adoption is permitted. The Company has evaluated this amendment and it is not expected to have a material impact to the Company's financial statements.

In August 2018, the FASB issued ASU 2018-13 (Topic 820), *Fair Value Measurement*, which modifies the disclosure requirements in Topic 820 by removing requirements for disclosing (i) amounts of and reasons for transfers between the Level 1 and Level 2 hierarchies, (ii) the policy for timing of transfers between levels and (iii) the valuation processes for Level 3 fair value measurements. The ASU 2018-13 amendment also adds requirements for disclosure of changes in unrealized gains and losses for the period relating to Level 3 fair value measurements and other factors considered in the valuation of Level 3 investments. This amendment is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019. The Company has evaluated this amendment and it is not expected to have a material impact to the Company's financial statements.

In February 2016, the FASB issued ASU No. 2016-02, *Leases*, requiring lessees to recognize a right-of-use asset and a lease liability on the balance sheet for all leases except for short-term leases with a lease term of twelve months or less. For lessees, leases will continue to be classified as either operating or finance leases in the income statement. Lessor accounting is similar to the current model but updated to align with certain changes to the lessee model. Lessors will continue to classify leases as operating, direct financing or sales-type leases. The effective date of the new standard for public companies is for fiscal years beginning after December 15, 2018 and interim periods within those fiscal years. Early adoption is permitted. The new standard must be adopted using a modified retrospective transition and allows for the application of the new guidance at the beginning of the earliest comparative period presented or at the adoption date. The Company will adopt the new guidance on January 1, 2019 without recasting comparative periods. While the Company is still evaluating if there are embedded leases required to be accounted for separately, the Company believes the most significant changes to the financial statements will relate to the recognition of right-of-use assets and offsetting lease liabilities in the consolidated balance sheet for its office operating leases. The Company does not expect the standard to have a material impact on cash flows or results of operations.

In June 2018, the FASB issued ASU No. 2018-07 (Topic 718), *Compensation – Stock Compensation*. The update represents an expansion of Topic 718 to include share-based payment transactions for acquiring goods and services from nonemployees. An entity should apply the requirements of Topic 718 to nonemployee awards except for specific guidance on inputs to an option pricing model and the attribution of cost (that is, the period of time over which share-based payment awards vest and the pattern of cost recognition over that period). The amendments specify that Topic 718 applies to all share-based payment transactions in which a grantor acquires

goods or services to be used or consumed in a grantor's own operations by issuing share-based payment awards. The amendments also clarify that Topic 718 does not apply to share-based payments used to effectively provide (1) financing to the issuer or (2) awards granted in conjunction with selling goods or services to customers as part of a contract accounted for under Topic 606, Revenue from Contracts with Customers. The Company will adopt ASU 2018-17 in the first quarter of 2019 and it is not expected to have a material impact to the Company's financial statements.

In February 2018, the FASB issued ASU No. 2018-05 (Topic 740) *Income Taxes*, Amendments to SEC Paragraphs Pursuant to SEC Staff Accounting Bulletin No. 118. The update provides guidance that gives entities the option to reclassify to retained earnings tax effects related to items in accumulated other comprehensive income (OCI) that the FASB refers to as having been stranded in accumulated OCI as a result of tax reform. Entities can early adopt the guidance in any interim or annual period for which financial statements have not yet been issued and apply it either (1) in the period of adoption or (2) retrospectively to each period in which the income tax effects of the Tax Cuts and Jobs Act related to items in accumulated OCI are recognized. The Company will adopt ASU 2018-05 in the first quarter of 2019 utilizing the modified retrospective transition method. The adoption of this standard is not expected to have a material impact to the Company's financial statements.

3. Collaboration and License Agreement

Sanofi (Aventis Inc.)

Agreement Overview and Termination

In August 2014, the Company entered into an exclusive License and Collaboration Agreement ("Collaboration Agreement") with Aventis Inc., a wholly-owned subsidiary of Sanofi, for the research, development and potential commercialization of pharmaceutical products for the treatment, prevention and diagnosis of hypertrophic and dilated cardiomyopathy, as well as potential additional indications. During the period August 2014 through December 2018, Sanofi paid the Company a total of $105.0 million in cash to perform research and development on the development of such products, as well as for granting to Sanofi certain royalty bearing licenses. Of the $105.0 million, $0.7 million was attributed to a freestanding convertible preferred stock call option and $104.3 million was recognized as revenue during the period from August 2014 through December 31, 2018, the date on which the Company received a notice of termination of the Collaboration Agreement.

The Collaboration Agreement provided for a termination clause whereby on or before December 31, 2018, Sanofi was required to notify the Company of its intent to continue the collaboration. The continuation would have committed Sanofi to specific research and development activities in support of the commercialization of the Company's products as well as resulted in a continuation of its obligation under the cost sharing portion of the collaboration to co-fund development as discussed further below. On December 31, 2018 Sanofi notified the Company it was terminating the Collaboration Agreement. Under the terms of the termination:

- Sanofi will reimburse the Company for certain research and development costs through June 30, 2019, after which such time such reimbursements will discontinue;
- the Company recovered global rights to all programs in its portfolio, including lead clinical-stage candidates, mavacamten and MYK-491; and
- Sanofi will remain eligible to receive royalties associated with any potential HCM-1 products that will range from mid-single to low-double digits in the U.S. (there is no royalty obligation to Sanofi for sales outside the U.S.).

The Company has determined that Sanofi was a related party of the Company due to its previous collaborative relationship, certain royalty bearing license obligations on future sales of HCM-1 in the United States, and that it is the Company's only partner. As of December 31, 2018, Sanofi was also a beneficial shareholder of the Company's common stock.

History of the Collaboration Agreement

Under the Collaboration Agreement, the Company granted Sanofi royalty-bearing licenses to develop and commercialize products resulting from its lead candidate programs HCM-1, HCM-2 and DCM-1. The licenses provide Sanofi with worldwide rights in the case of DCM-1 and rights outside the United States with respect to the HCM-1 and HCM-2 programs. The terms of the Collaboration Agreement also state that the Company is responsible for conducting research and development activities through early human efficacy studies for all three programs, except for specified research activities to be conducted by Sanofi.

Upon entering into this agreement, the Company received an up-front non-refundable cash payment of $35.0 million and Sanofi made an up-front equity purchase of $10.0 million (additional equity investments from Sanofi totaling $26.5 million were received subsequent to the effective date of the Collaboration Agreement). The Company was also eligible to receive additional payments and services, as follows:

- a one-time, non-refundable payment of $25.0 million contingent upon submission of an Investigational New Drug ("IND") application before certain regulatory authorities for its DCM-1 program;
- a non-refundable continuation payment of $45.0 million contingent upon Sanofi's notification of its decision to continue the agreement beyond December 31, 2016; and
- up to $15.0 million in research and development funding for the lead compound in each program if studies leading to proof-of-concept ("POC") were extended beyond December 31, 2018;
- up to $45.0 million in funding from Sanofi of approved in-kind research and clinical activities.

During the fourth quarter of 2016, the Company submitted an IND application to the U.S. Food and Drug Administration and as a result, the Company received the $25.0 million milestone payment from Sanofi.

In December 2016, Sanofi provided notice to the Company of its election to continue the collaboration through December 31, 2018 pursuant to the terms of the Collaboration Agreement. In connection with Sanofi's decision to continue the collaboration, in January 2017 the Company received the $45.0 million milestone payment.

Under the terms of the agreement, the Company was entitled to receive tiered royalties ranging from the mid-single digits to the mid-teens on net sales of certain HCM-1, HCM-2 and DCM-1 finished products outside the United States and on net sales of certain DCM-1 finished products in the United States.

Revenue Recognition

In the implementation of ASC 606 "Revenues from Contracts with Customers" using the full retrospective transition method effective January 1, 2016, the Company evaluated the Collaboration Agreement under ASC 606 and determined that it had the following performance obligations:

1. the licenses of intellectual property for each of the HCM-1, HCM-2 and DCM-1 programs, and

2. the performance of research and development services, including regulatory support, for each of the three programs.

The Company considered whether the licenses had standalone functionality and were capable of being distinct; however, given the fact that the research and development services were of such a specialized nature that could only be performed by the Company and Sanofi could not benefit from the intellectual property licenses without the Company's performance, the Company determined that the intellectual property licenses were not distinct from the research and development services and thus the license and research and development services for each program were combined into three separate performance obligations.

Contract Term

For revenue recognition purposes, the Company determined that the Collaboration Agreement was a period to period contract for which the Company had enforceable rights and obligations from inception through the initial term of December 31, 2016. Sanofi had the right to terminate the Collaboration Agreement prior to December 31, 2016 or to extend the contract term through December 31, 2018. If Sanofi had elected to terminate the agreement, the termination would have taken effect on December 31, 2016 and all licensed rights would have reverted to the Company. The Company did not have any obligation to reimburse Sanofi any portion of the payments received if Sanofi had terminated the agreement.

In December 2016, Sanofi elected to continue the Collaboration Agreement through an extended term ending December 31, 2018 and made the $45.0 million continuation payment to the Company in January 2017. The Company determined that the extended term was to be treated as a separate contract because such an extension was not probable at the inception of the contract, the extension represented additional goods and services, and such activities were priced commensurate to the effort required and do not involve any significant discount. It was also concluded that the extended term provided the Company with enforceable rights and obligations for the two-year period ended December 31, 2018.

Because Sanofi retained the option in the Collaboration Agreement to extend the arrangement, neither party was committed to perform and the contract did not have enforceable rights and obligations beyond December 31, 2018.

Transaction Price

The Company's assessment of the transaction price included an analysis of amounts to which it was expected to be entitled for providing goods or services to the customer which at contract inception consisted of the upfront cash payment, valued at $34.3 million, net of the fair value of $0.7 million allocated to the option provided to Sanofi to acquire equity, and variable consideration of

$25.0 million, subject to an IND application. Sanofi paid the Company the $25.0 million milestone payment upon the Company's application for the IND. In 2016, after the IND application was made and when the Company determined it was deemed probable that significant reversal in the amount of cumulative revenue recognized will not occur, the Company included this amount in the transaction price. As of December 31, 2016, all performance obligations associated with the initial term were satisfied.

The extended term (from January 1, 2017 to December 31, 2018) had a fixed fee of $45.0 million, paid by Sanofi contemporaneously with the notice of continuation of the contract. The Company therefore determined that the transaction price for this extended term was $45.0 million.

As previously noted above, the Collaboration Agreement also included up to $45.0 million in funding from Sanofi of approved in-kind research and clinical activities. Sanofi was the decision maker on how to provide these services and such services were used in the development of joint program technology which is co-owned by both parties. As such the Company concluded that these in-kind contributions did not constitute consideration paid by Sanofi to the Company.

Any consideration related to sales-based royalties were to be recognized when the related sales occurred and therefore have also been excluded from the transaction price.

Methodology for Recognition

Since the Company determined that the three performance obligations were satisfied over time, the Company selected a single revenue recognition method that it believed most faithfully depicts the Company's performance in transferring control of the services. ASC 606 allows entities to choose between two methods to measure progress toward complete satisfaction of a performance obligation:

1. Output methods - recognize revenue on the basis of direct measurements of the value to the customer of the goods or services transferred to date relative to the remaining goods or services promised under the contract (e.g. surveys of performance completed to date, appraisals of results achieved, milestones reached, time elapsed, and units produced, or units delivered); or

2. Input methods - recognize revenue on the basis of the entity's efforts or inputs to the satisfaction of a performance obligation (e.g., resources consumed, labor hours expended, costs incurred, or time elapsed) relative to the total expected inputs to the satisfaction of that performance obligation.

The Company utilized a cost-based input method to measure proportional performance and calculated the corresponding amount of revenue to recognize. The Company believed this was the best measure of progress because other measures did not reflect how the Company executed its performance obligations under the contract with Sanofi. In applying the cost-based input methods of revenue recognition, the Company used actual costs incurred relative to budgeted costs to fulfill the combined performance obligations. Revenue was recognized based on actual costs incurred as a percentage of total actual and budgeted costs as the Company completed its performance obligations, which were fulfilled on December 31, 2018. A cost-based input method of revenue recognition requires management to make estimates of costs to complete the Company's performance obligations. In making such estimates, significant judgment is required to evaluate assumptions related to cost estimates. The cumulative effect of revisions to estimated costs to complete the Company's performance obligations were recorded in the period in which changes were identified and amounts could be reasonably estimated.

For the years ended December 31, 2018, 2017 and 2016, the Company recognized $33.6 million, $11.4 million and $42.0 million of collaboration and license revenue, respectively and no further revenue from the Collaboration Agreement has been deferred or will be recognized.

The following table presents changes in the Company's contract assets and liabilities, which excludes research and development reimbursements under the cost sharing plan further discussed below, for the years ending December 31, 2018 and 2017 (in thousands):

	Year Ended December 31, 2018			
	Balance at Beginning of Period	Additions	Deductions	Balance at End of Period
Contract liabilities:				
Deferred revenue	$ 33,558	$ —	$ (33,558)	$ —

	Year Ended December 31, 2017			
	Balance at Beginning of Period	Additions	Deductions	Balance at End of Period
Contract assets:				
Receivable from collaboration partner	$ 45,000	$ —	$ (45,000)	$ —
Contract liabilities:				
Deferred revenue	$ 45,000	$ —	$ (11,442)	$ 33,558

Cost Sharing

During the years ended December 31, 2018 and 2017 the Company has received research and development cost reimbursements from Sanofi under the terms of the Collaboration Agreement.

Since the inception of the Collaboration Agreement and up until the termination date, Sanofi has been conditionally responsible for reimbursing the Company for:

(i) one half or more of the registration program plan ("RPP") costs after clinical proof-of-concept is established for the lead compound under each of the HCM-1 and HCM-2 programs; and

(ii) if the Company has initiated a clinical trial of a compound under a proof-of-concept development plan and not terminated its development thereof and if another additional compound is identified as a development candidate for the same program, the Company is entitled to full reimbursement of pre-proof-of-concept ("pre-POC") research and development costs on development candidates mutually identified as such additional compounds, with the objective of conducting IND-enabling studies and clinical trials on such candidate.

Effective October 2017, Sanofi is sharing RPP costs for the mavacamten program until June 30, 2019 pursuant to the Collaboration Agreement termination terms. Registration program costs are subject to review and approval by the Company and Sanofi and include amounts incurred relating to clinical trials, development and manufacturing of, and obtaining regulatory approvals for mavacamten, and include direct employee costs and direct out-of-pocket costs incurred, by or on behalf of a party, that are specifically identifiable or reasonably and directly allocable to those activities.

Pursuant to the additional compounds provisions of the Collaboration Agreement, in August 2018 Sanofi agreed to reimburse the Company for eligible costs it has incurred in the development of the MYK-224 compound, which has been identified as an additional compound under the HCM-1 program. Eligible costs are subject to review and approval under the same procedures as under the RPP program; reimbursable costs consist of research and development activities agreed to by the Company and Sanofi that were negotiated and budgeted prior to the application for reimbursement. Reimbursements for this compound will continue to be received from Sanofi until March 31, 2019, in accordance to the Collaboration Agreement termination terms.

Estimated reimbursements are invoiced to Sanofi before each interim period based on budgeted amounts. For the RPP program, these estimates consist of one half of the Company's mavacamten development budget in excess of Sanofi's mavacamten development budget each interim period. For the MYK-224 compound, these estimates consist of all of the Company's research and development budget related to the compound for the forthcoming quarter. After each period end, a review of the actual expenses incurred is performed and any adjustments are carried forward to future invoices. Actual amounts received from Sanofi are applied to the applicable interim period to reduce the Company's research and development expenses.

The Company recorded zero and $1.0 million for reimbursable RPP and MYK-224 expenses, as of December 31, 2018 and 2017, respectively, which are recorded as receivable from collaboration partner and included in current assets in the consolidated balance sheets. As of December 31, 2018, and 2017, the Company has recorded $13.0 million and $4.4 million, respectively, as prepayments from collaboration partner, to apply to future research and development expenses. Prepayments from collaboration partner are included in current liabilities on the consolidated balance sheets. The Company recorded $23.1 million, $7.3 million and zero as reductions to research and development expenses for the years ended December 31, 2018, 2017 and 2016, respectively.

The following table presents the Sanofi research and development reimbursement receivables and related prepayment activity during the years ended December 31, 2018 and 2017 (in thousands):

	Year Ended December 31,	
	2018	2017
Receivable from collaboration partner		
Balance at beginning of year	$ 1,013	$ —
Additions	3,994	1,013
Deductions	(5,007)	—
Balance at end of year	$ -	$ 1,013
Prepayment from collaboration partner for mavacamten		
Balance at beginning of year	$ 4,432	$ —
Additions for advance billings	-	1,013
Payments received from Sanofi	31,659	10,697
Actual expenses incurred	(23,118)	(7,278)
Balance at end of year	$ 12,973	$ 4,432

4. Fair Value Measurements

Financial assets and liabilities are recorded at fair value. The accounting guidance for fair value provides a framework for measuring fair value, clarifies the definition of fair value and expands disclosures regarding fair value measurements. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability (an exit price) in an orderly transaction between market participants at the reporting date. The accounting guidance establishes a three-tiered hierarchy, which prioritizes the inputs used in the valuation methodologies in measuring fair value as follows:

Level 1—Inputs are unadjusted, quoted prices in active markets for identical assets or liabilities at the measurement date.

Level 2—Inputs other than quoted market prices included in Level 1 are either directly or indirectly observable for the asset or liability through correlation with market data at the measurement date and for the duration of the instrument's anticipated life.

Level 3—Inputs reflect management's best estimate of what market participants would use in pricing the asset or liability at the measurement date. Consideration is given to the risk inherent in the valuation technique and the risk inherent in the inputs to the model.

The following table sets forth the Company's financial instruments that were measured at fair value on a recurring basis by level within the fair value hierarchy (in thousands):

	Fair Value Measurements at December 31, 2018			
	Total	Level 1	Level 2	Level 3
Assets				
Money market funds	$ 245,194	$ 245,194	$ —	$ —
U.S. government agency obligations	85,033		85,033	—
Corporate securities	63,679		63,679	—
	$ 393,906	$ 245,194	$ 148,712	$ —
Classified as (with contractual maturities):				
Cash equivalents (due within 90 days)	$ 245,194			
Short-term investments (due within one year)	68,564			
Long-term investments (due between one and two years)	80,148			
	$ 393,906			

	Fair Value Measurements at December 31, 2017			
	Total	Level 1	Level 2	Level 3
Assets				
Money market funds	$ 223,568	$ 223,568	$ —	$ —
U.S. government agency obligations	27,878	—	27,878	—
Corporate securities	23,955	—	23,955	—
	$ 275,401	$ 223,568	$ 51,833	$ —
Classified as (with contractual maturities):				
Cash equivalents (due within 90 days)	$ 223,568			
Short-term investments (due within one year)	31,933			
Long-term investments (due between one and two years)	19,900			
	$ 275,401			

The following table is a summary of amortized cost, unrealized gain and loss, and fair value (in thousands) of the Company's marketable securities by contractual maturities:

	Fair Value Measurements at December 31, 2018			
	Amortized Cost	Unrealized Gain	Unrealized Loss	Fair Value
Cash equivalents (due within 90 days)	$ 245,194	$ —	$ —	$ 245,194
Short-term investments (due within one year)	68,656	—	(92)	68,564
Long-term investments (due between one and two years)	80,118	98	(68)	80,148
	$ 393,968	$ 98	$ (160)	$ 393,906

	Fair Value Measurements at December 31, 2017			
	Amortized Cost	Unrealized Gain	Unrealized Loss	Fair Value
Cash equivalents (due within 90 days)	$ 223,568	$ —	$ —	$ 223,568
Short-term investments (due within one year)	32,010	—	(77)	31,933
Long-term investments (due between one and two years)	20,010	—	(110)	19,900
	$ 275,588	$ —	$ (187)	$ 275,401

The Company recognizes transfers between levels of the fair value hierarchy as of the end of the reporting period. There were no transfers within the hierarchy during the years ended December 31, 2018 and 2017.

There were no material realized gains or losses on available-for-sale securities during the periods presented.

5. Balance Sheet Components

Property and Equipment

Property and equipment consists of the following (in thousands):

	As of December 31,	
	2018	2017
Scientific equipment	$ 9,126	$ 5,935
Furniture and equipment	1,248	1,064
Capitalized software	302	278
Leasehold improvements	451	331
Total	11,127	7,608
Less: Accumulated depreciation	(5,989)	(4,461)
Property and equipment, net	$ 5,138	$ 3,147

Depreciation expense was $1.6 million, $1.3 million and $1.1 million for the years ended December 31, 2018, 2017 and 2016, respectively.

Accrued Liabilities

Accrued liabilities consist of the following (in thousands):

	As of December 31,	
	2018	2017
Clinical research and development	$ 10,903	$ 5,981
Payroll-related liabilities	8,151	4,412
Other	1,704	1,246
Total accrued liabilities	$ 20,758	$ 11,639

6. Commitments and Contingencies

Purchase Commitments

The Company conducts product research and development programs through a combination of internal and collaborative programs that include, among others, arrangements with universities, contract research organizations and clinical research sites. The Company has contractual arrangements with these organizations; however, these contracts are generally cancelable on 30 days' notice and the obligations under these contracts are largely based on services performed.

Facilities

As of December 31, 2018, the Company has operating leases for facilities consist of approximately 48,400 square feet of office and lab space in two facilities in South San Francisco, California, which will expire in January 2020.

In October 2018, the Company entered into a 15-month noncancelable operating lease for approximately 22,100 square feet of additional space in South San Francisco, California, which commenced in February 2019. Future minimum rental payments are $1.1 million in the aggregate excluding taxes and operating expenses.

In September 2018, the Company entered into a noncancelable operating lease for approximately 129,800 square feet of space in Brisbane, California which is currently under construction. The date on which the Company will become responsible for paying rent will be the date the premises are ready for occupancy, currently anticipated to be January 2020, and the lease will expire 10 years after that date. Included in the lease is one option to extend for an additional 10-year period. Future minimum rental payments are $93.2 million in the aggregate plus taxes and operating expenses payable to the landlord. In September 2018, the Company provided a standby letter of credit of $1.9 million as security for its obligations under this Lease. Standby letters of credit are classified as long-term assets within restricted cash and other on the consolidated balance sheet.

Future annual minimum lease payments due under the new and existing operating leases at December 31 of each year are as follows (in thousands):

Year ending December 31:	Amount[1]
2019	2,752
2020	5,831
2021	8,461
2022	8,757
2023	9,063
Thereafter	61,444
Total	$ 96,308

(1) The table above is prepared under the assumption that rent will commence at the Brisbane facility on January 1, 2020.

Rent expense, net was $2.1 million, $1.4 million and $1.3 million for the years ended December 31, 2018, 2017 and 2016, respectively. The operating leases require the Company to share in prorated operating expenses and property taxes based upon actual amounts incurred; those amounts are not fixed for future periods and, therefore, are not included in the future commitments listed above.

Contingencies

From time to time, the Company may have contingent liabilities that arise in the ordinary course of business activities. The Company accrues for such a liability when it is probable that future expenditures will be made and such expenditures can be reasonably estimated. There were no contingent liabilities requiring accrual or disclosure as of December 31, 2018 and 2017.

Guarantees and Indemnifications

The Company enters into standard indemnification arrangements in the ordinary course of business. Pursuant to certain of these arrangements, the Company indemnifies, holds harmless, and agrees to reimburse the indemnified parties for losses suffered or incurred by the indemnified party, in connection with any trade secret, copyright, patent or other intellectual property infringement claim by any third-party with respect to the Company's technology. The term of these indemnification arrangements is generally perpetual. The maximum potential amount of future payments the Company could be required to make under these agreements is not determinable because it involves claims that may be made against the Company in the future, but have not yet been made.

The Company indemnifies its officers and directors for certain events or occurrences, subject to certain limits, while the officer or director is or was serving at the Company's request in such capacity, as permitted under Delaware law and in accordance with its certificate of incorporation and bylaws, and agreements providing for indemnification entered into with its officers and directors. The term of the indemnification period lasts as long as an officer or director may be subject to any proceeding arising out of acts or omissions of such officer or director in such capacity.

The maximum amount of potential future indemnification of directors and officers is unlimited; however, the Company currently holds director and officer liability insurance. This insurance allows the transfer of risk associated with its exposure and may enable it to recover a portion of any future amounts paid.

The Company believes that the fair value of these indemnification obligations is minimal. Accordingly, the Company has not recognized any liabilities relating to these obligations for any period presented.

7. Stockholders' Equity

On March 8, 2018, the Company filed the 2018 Shelf Registration Statement covering the potential offering, issuance, and sale of an indeterminate amount of common stock, preferred stock, debt securities, warrants and/or units. In May 2018, the Company completed a follow-on offering under the 2018 Shelf Registration Statement pursuant to which the Company issued 3,750,000 shares of common stock at a price of $49.00 per share. In June 2018, the Company sold an additional 211,147 shares of common stock directly to the underwriters when they partially exercised their over-allotment option at the price of $49.00 per share. In the quarter ended June 30, 2018, the Company received proceeds totaling approximately $181.9 million from the offering, net of underwriting discounts and commissions and offering expenses, which includes approximately $9.7 million received due to the underwriters' partial exercise of their over-allotment option.

Common Stock Reserved for Issuance

The Company has reserved shares of common stock, on an as-if-converted basis, for issuance as follows:

	December 31, 2018	December 31, 2017
Options and awards issued and outstanding	3,864,407	2,964,549
Shares available for issuance under 2015 Stock Option and Incentive Plan	904,785	863,538
Shares available for issuance under 2015 Employee Stock Purchase Plan	780,716	449,444
Total	5,549,908	4,277,531

Preferred stock

As amended in November 2015, the Company's Certificate of Incorporation authorizes 5,000,000 shares of preferred stock at a par value of $0.0001 per share. As of December 31, 2018 and 2017, no preferred stock was issued or outstanding.

8. Stock-Based Compensation

In June 2012, the Company adopted the 2012 Equity Incentive Plan (as amended, the "2012 Plan"). The 2012 Plan provides for the granting of incentive stock options, nonstatutory stock options, RSUs, stock bonuses and rights to acquire restricted stock to employees, officers, directors and consultants. Incentive stock options may be granted with exercise prices of not less than 100% of the estimated fair value of the common stock and nonstatutory stock options may be granted with an exercise price of not less than 85% of the estimated fair value of the common stock on the date of grant. Stock options granted to a stockholder owning more than 10% of the voting stock must have an exercise price of not less than 110% of the estimated fair value of the common stock on the date of grant. The Board of Directors determines the estimated fair value of common stock. Stock options were generally granted with terms of up to ten years and vest over a period of four years. Upon the exercise of options, the Company issues new common stock from its authorized shares. Effective with the Company's initial public offering in August 2015, the Company no longer issues shares from this plan and all cancelled or forfeited shares are returned to the 2015 Stock Option and Incentive Plan.

In October 2015, the Company's Board of Directors and stockholders adopted the 2015 Stock Option and Incentive Plan (the "2015 Plan") and the 2015 Employee Stock Purchase Plan (the "2015 ESPP"). Under the 2015 Plan, 1,650,000 shares of common stock were initially reserved for issuance, as of the pricing of the Company's initial public offering. The number of shares initially reserved for issuance under the 2015 Plan will be increased by (i) the number of shares represented by awards outstanding under the Company's 2012 Equity Incentive Plan that are forfeited or lapse unexercised and which following the pricing date are not issued under the 2012 Plan, and (ii) an annual increase on January 1 of each year beginning on January 1, 2017. Effective January 1, 2019 and 2018, the Company reserved an additional 1,611,557 and 1,432,511 shares of common stock, respectively, for issuance under the 2015 Plan.

The Company began issuing RSUs to employees under the 2015 Plan during the year ended December 31, 2018. RSUs settle into shares of common stock upon vesting, generally over a four-year period, and the fair value is the market price on the date of grant.

In October 2015, the Company adopted the 2015 ESPP, which provides eligible employees with the opportunity to acquire an ownership interest in the Company through periodic payroll deductions, based on a six-month look-back period, at a price equal to the lesser of 85% of the fair market value of the common stock at either the first business day or last business day of the relevant offering period, provided that no more than 2,500 shares of common stock may be purchased by any one employee during each offering period. The 2015 ESPP is intended to constitute an "employee stock purchase plan" under Section 423(b) of the Internal Revenue Code of 1986, as amended. The 2015 ESPP may be terminated by the Company's board of directors at any time. A total of 255,000 shares of common stock were initially reserved for issuance under the 2015 ESPP, subject to an annual increase on January 1 of each year beginning on January 1, 2017. Effective January 1, 2019 and 2018, the Company reserved an additional 402,889 and 358,127 shares of common stock, respectively, for issuance under the 2015 ESPP.

The following table summarizes stock option activity and related information for the periods presented below:

	Shares Subject to Outstanding Options	Weighted Average Exercise Price Per Option	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in thousands)
Balance at December 31, 2016	2,141,868	$ 6.42	8.4	$ 14,963
Options granted	1,735,875	15.41		
Options exercised	(333,822)	4.81		
Options canceled	(579,372)	8.11		
Balance at December 31, 2017	2,964,549	11.54	8.3	90,780
Options granted	1,370,381	52.53		
Options exercised	(489,153)	10.61		
Options canceled	(144,316)	22.67		
Balance at December 31, 2018	3,701,461	26.40	8.0	88,524
Options outstanding and exercisable as of December 31, 2018	1,519,637	14.35	7.3	52,979

The aggregate intrinsic value of options was calculated as the difference between the exercise price of the options and the estimated fair value of common stock. The aggregate intrinsic value of options exercised was $21.1 million, $9.8 million and

$337,000 for the years ended December 31, 2018, 2017 and 2016, respectively. The total estimated grant date fair value of options vested during the years ended December 31, 2018, 2017 and 2016 was $13.4 million, $4.8 million and $2.1 million, respectively.

The following table summarizes RSU activity and related information for the period presented below:

	Shares Subject to Outstanding Awards	Weighted Average Grant Date Fair Value	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in thousands)
Balance at December 31, 2017	—	$ —	—	$ —
RSUs awarded	171,766	53.27		
RSUs released	(3,250)	48.93		
RSUs forfeited	(5,570)	52.83		
Balance at December 31, 2018	162,946	53.37	2.0	7,962

The aggregate intrinsic value of RSUs was calculated using the estimated fair value of common stock times the number of RSUs. The total grant date fair value of RSUs vested during the years ended December 31, 2018, 2017 and 2016 was $159,000, nil and nil, respectively.

Stock-Based Compensation

Stock-based compensation expense, net of forfeitures, as applicable for the years ended December 31, 2018, 2017 and 2016, is reflected in the statements of operations and comprehensive loss as follows (in thousands):

	Year Ended December 31,		
	2018	2017	2016
Research and development	$ 8,144	$ 2,752	$ 1,252
General and administrative	11,197	3,386	1,561
Total stock-based compensation	$ 19,341	$ 6,138	$ 2,813

As of December 31, 2018, total unamortized stock-based compensation relating to options was $45.9 million, which is expected to be recognized over the average remaining vesting period of 3.1 years. As of December 31, 2017, total unamortized stock-based compensation was $16.9 million, which was expected to be recognized over the average remaining vesting period of 1.7 years. As of December 31, 2016, total unamortized stock-based compensation was $7.5 million, which was expected to be recognized over the remaining vesting period of 2.7 years.

As of December 31, 2018, total unamortized stock-based compensation relating to RSUs was $7.0 million, which is expected to be recognized over the average remaining vesting period of 3.2 years.

In relation to stock options and awards that vest upon the achievement of performance criteria, $248,000, $174,000 and $180,000 in stock-based compensation expense was recorded for the years ended December 31, 2018, 2017 and 2016, respectively. The Company begins to recognize expenses related to these options and awards during the period upon concluding that certain performance criteria are considered probable.

The weighted-average grant date fair value of options granted under the Company's stock plans in the years ended December 31, 2018, 2017 and 2016 was $34.70, $9.92 and $7.59 per share, respectively. The following table illustrates the assumptions for the Black-Scholes option-pricing model used in determining the fair value of time-based and performance-based options granted to employees:

	Year Ended December 31,		
	2018	2017	2016
Risk-free interest rate	2.54%-2.98%	1.92%-2.27%	1.05%-2.10%
Expected life (in years)	5.3-6.1	5.3-6.1	5.3-6.1
Volatility	69%-75%	71%-75%	71%-73%
Dividend yield	0%	0%	0%

In relation to stock options that vest upon the achievement of market-based stock price target, the Company estimated the fair value on the original grant date using a Monte-Carlo simulation model. Since its IPO, the Company has recognized the stock-based compensation expense on a straight-line basis over the implicit service period as derived under that simulation model.

Liability for Early Exercise of Stock Options

As of December 31, 2018 and 2017, there were 9,790 and 81,373, respectively, of unvested common shares outstanding that were issued upon the early exercise of stock options prior to the vesting of the underlying shares and subject to repurchase by the Company at the original issuance price upon termination of the stockholders' services. The right to repurchase these shares generally lapses with respect to 25% of the shares underlying the option after one year of service to the Company and 1/48 of the shares underlying the original grant per month for 36 months thereafter. The shares purchased by the employees pursuant to the early exercise of stock options are not deemed, for accounting purposes, to be issued until those shares vest. The cash received in exchange for exercised and unvested shares related to stock options granted is recorded as a liability for the early exercise of stock options on the consolidated balance sheets and will be reclassified to common stock and additional paid-in capital as the shares vest. As of December 31, 2018, and 2017, the Company recorded $15,000 and $68,000, respectively, within accrued liabilities and other long-term liabilities associated with shares issued subject to repurchase rights.

The Company repurchased 997 and 41,961 shares of unvested early exercised stock in the years ended December 31, 2018 and 2017, for $1,000 and $45,000, respectively.

9. Net Loss per Share

The following table sets forth the computation of basic and diluted net loss per share (in thousands, except share and per share data):

	Year Ended December 31,		
	2018	2017	2016
		As revised (Note 2)	
Numerator			
Net loss	$ (67,698)	$ (57,010)	$ (10,380)
Denominator			
Weighted average shares outstanding	38,466,233	33,098,571	28,104,991
Less: weighted average shares subject to repurchase	(79,327)	(266,057)	(629,199)
Weighted average shares used to compute basic and diluted net loss per share	38,386,906	32,832,514	27,475,792
Net loss per share, basic and diluted	$ (1.76)	$ (1.74)	$ (0.38)

Basic net loss per share is computed by dividing the net loss by the weighted average number of common shares outstanding for the period. Diluted net loss per share is computed by dividing the net loss by the weighted average number of common shares and potentially dilutive securities for the period, determined using the treasury-stock method and the as-if converted method, for convertible securities, if inclusion of these is dilutive. Because the Company has reported a net loss for all periods presented, diluted net loss per common share is the same as basic net loss per common share for those periods.

The following outstanding shares of potentially dilutive securities were excluded from the computation of diluted net loss per share for the periods presented because including them would have been antidilutive:

	As of December 31,		
	2018	2017	2016
Common stock subject to repurchase	9,790	81,373	409,839
Options and awards issued and outstanding	3,864,407	2,964,549	2,141,868

As of December 31, 2018, the Company has contributions from plan participants of $272,000 under the 2015 ESPP, which if converted, would be equivalent to 5,703 shares based on 85% of the stock price at the beginning of the offering period. As of December 31, 2017, the Company had contributions from plan participants of $133,000 under the 2015 ESPP, which if converted, would be equivalent to 4,030 shares based on 85% of the stock price at the beginning of the offering period.

10. Employee Benefit Plan

The Company sponsors a 401(k) Plan, which stipulates that eligible employees can elect to contribute to the 401(k) Plan, subject to certain limitations of eligible compensation.

11. Income Taxes

For each of the years ended December 31, 2018, 2017 and 2016, the effective income tax rate and tax provision from continuing operations was zero percent for all periods, primarily attributable to losses generated which are not more likely than not to be realized. The Company adopted ASC 606 on January 1, 2018 and has revised the following information for the years ending December 31, 2017 and 2016 accordingly.

The following is the reconciliation between the statutory federal income tax rate and the Company's effective tax rate:

	Year Ended December 31,		
	2018	2017	2016
		As revised (Note 2)	
Federal statutory income tax rate	21.0%	34.0%	34.0%
State taxes (tax effected)	8.6	7.1	8.4
Non-deductible expenses and other	2.5	2.0	(12.9)
Research and development credits	5.9	6.0	17.8
Tax Act – net deferred tax rate change	—	(25.1)	—
Change in valuation allowance	(38.0)	(24.0)	(47.3)
Total	—%	—%	—%

As of December 31, 2018 and 2017, the components of the Company's deferred tax assets are as follows (in thousands):

	As of December 31,	
	2018	2017
		As revised (Note 2)
Deferred tax assets:		
Net operating loss carryforwards	$ 49,689	$ 22,246
Research and development credits carryforwards	12,908	8,631
Stock-based compensation	4,349	890
Deferred revenue	—	9,391
Start-up costs	1,237	1,354
Depreciation	(959)	(457)
Other	1,858	1,327
Total deferred tax assets	69,082	43,382
Less: valuation allowance	(69,082)	(43,382)
Net deferred tax assets	$ —	$ —

In December 2017, the Tax Act was signed into law making significant changes to the Internal Revenue Code. The Tax Act reduced the corporate income tax rate from 34% to 21% effective January 1, 2018. The Company re-measured its U.S. deferred tax assets and liabilities, which resulted in a reduction of net deferred tax assets with a corresponding adjustment to the valuation allowance. As a result, no tax expense was recorded related to the enactment of the Tax Act.

The Company's primary deferred tax asset of $49.7 million at December 31, 2018 and $22.2 million at December 31, 2017 relates to its net operating loss carryforwards ("NOLs"). Based on a history of cumulative losses in recent periods and consideration of other available positive and negative evidence, the Company has recorded a valuation allowance to offset the net deferred tax assets at December 31, 2018 and December 31, 2017, respectively.

As of December 31, 2018, the Company had approximately $177.0 million and $179.4 million of federal and state net operating losses, respectively, that will begin to expire in 2032. As of December 31, 2018, the Company had approximately $4.5 million and $3.8 million of federal and state research and development tax credit carryovers, respectively. If not utilized, the federal credit carryforward will expire in 2032, and the state credit carryforward does not expire. As of December 31, 2018, the Company had approximately $9.0 million of federal orphan tax credit carryovers, which will begin to expire in 2036 if not utilized. The valuation

allowance increased by approximately $25.7 million, $13.7 million and $4.9 million during the years ended December 31, 2018, 2017 and 2016, respectively.

Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended (the "Code") if a corporation undergoes an "ownership change," generally defined as a greater than 50 percentage point change (by value) in its equity ownership over a rolling three-year period, the corporation's ability to use its pre-change net operating loss carryforwards and other pre-change tax attributes (such as research tax credits) to offset its post-change income or taxes may be limited. Similar rules may apply under the laws of the state of California. The annual limitation generally is determined by multiplying the value of the Company's stock at the time of such ownership change (subject to certain adjustments) by the applicable "long-term tax-exempt rate." Such limitations may result in expiration of a portion of the NOLs and other tax attributes before utilization. Each ownership change resulted in an annual limitation, but all NOLs and other tax attributes generated prior to the ownership changes on April 20, 2015 and August 14, 2017 can be utilized prior to expiration if the Company earns sufficient taxable income. The Company's follow-on stock offering completed in June 2018 did not result in an ownership change.

As of December 31, 2018, and 2017, the Company did not have a liability related to unrecognized tax benefits. All unrecognized tax benefits have been netted against the research and development and orphan drug credit carryforwards deferred tax asset.

The Company records interest and penalties related to unrecognized tax benefits within interest and other income, net. As of December 31, 2018, and 2017, the Company had not accrued any interest or penalties related to unrecognized tax benefits. The Company is subject to U.S. federal and California income tax assessment for years beginning in 2012 and Australia beginning in 2015. However, since the Company has incurred federal and California net operating losses every year since inception, all of its income tax returns are subject to examination and adjustments by the Internal Revenue Service for at least three years and by the California Franchise Tax Board for four years following the year in which the tax attributes are utilized. The Company does not believe that there will be a material change in its unrecognized tax positions over the next twelve months. There is no amount of unrecognized tax benefit that, if recognized, would affect the effective tax rate.

Uncertain Tax Positions

The Company has not been audited by the Internal Revenue Service, any state tax authority, or foreign tax authorities. It is subject to taxation in the United States and Australia. Because of the net operating loss, research credit carryforwards, and orphan drug tax credit carryforwards, substantially all of its tax years, from 2012 to 2018, remain open to U.S. federal and California tax examinations. The statute of limitation in Australia is four years.

There were no interest or penalties accrued at December 31, 2018 and 2017.

At December 31, 2018, 2017 and 2016, the Company's reserve for unrecognized tax benefits is approximately $3.8 million, $2.5 million and $1.5 million, respectively. Due to the full valuation allowance at December 31, 2018, current adjustments to the unrecognized benefits will have no impact to the Company's effective income tax rate.

A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows (in thousands):

	For the Year Ended December 31,		
	2018	2017	2016
		As revised (Note 2)	
Beginning balance	$ 2,471	$ 1,474	$ 719
Increases (decreases) of unrecognized tax benefits related to prior year	289	(97)	—
Increases of unrecognized tax benefits related to current year	1,050	1,094	755
Ending balance	$ 3,810	$ 2,471	$ 1,474

The Company does not anticipate material changes to its uncertain tax positions through the next twelve months.

12. Quarterly Financial Data (unaudited)

The following table summarizes the unaudited quarterly financial data for the last two fiscal years (in thousands, except per share data):

(in thousands, except per share amounts)	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
2018				
Revenues	$ 5,331	$ 6,639	$ 9,188	$ 12,400
Total operating expenses	23,931	26,130	26,867	30,281
Net loss	(17,820)	(18,413)	(15,789)	(15,676)
Net loss per common share, basic and diluted	$ (0.50)	$ (0.49)	$ (0.39)	$ (0.39)
Weighted average number of shares, basic and diluted	35,827,235	37,440,024	40,116,644	40,259,575
2017, As Revised (Note 2)				
Revenues	$ 2,410	$ 3,001	$ 3,077	$ 2,954
Total operating expenses	17,393	18,771	20,245	13,700
Net loss	(14,762)	(15,461)	(16,721)	(10,066)
Net loss per common share, basic and diluted	$ (0.47)	$ (0.50)	$ (0.50)	$ (0.28)
Weighted average number of shares, basic and diluted	31,089,310	31,200,773	33,525,567	35,684,201

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

MYOKARDIA, INC.

February 28, 2019

By: /s/ T. Anastasios Gianakakos
T. Anastasios Gianakakos
Chief Executive Officer
(Principal Executive Officer and Authorized Signatory)

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints each of T. Anastasios Gianakakos and Taylor Harris, as his true and lawful attorney-in-fact and agent, with full power of substitution for him, and in his name in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, full power and authority to do and perform each and every act and thing requisite and necessary to be done therewith, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents and their respective substitute or substitutes, may lawfully do or cause to be done by virtue hereof. Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, this report on Form 10-K has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ T. Anastasios Gianakakos T. Anastasios Gianakakos	President, Chief Executive Officer and Director (Principal Executive Officer)	February 28, 2019
/s/ Taylor Harris Taylor Harris	Chief Financial Officer (Principal Financial and Accounting Officer)	February 28, 2019
/s/ Sunil Agarwal Sunil Agarwal, M.D.	Director	February 28, 2019
/s/ Mary Cranston Mary B. Cranston	Director	February 28, 2019
/s/ David P. Meeker David P. Meeker, M.D.	Director	February 28, 2019
/s/ Mark L. Perry Mark L. Perry	Director	February 28, 2019
/s/ Kimberly Popovits Kimberly Popovits	Director	February 28, 2019
/s/ Wendy Yarno Wendy Yarno	Director	February 28, 2019

MYOKARDIA

Exhibit 10.6

January 5, 2019

Bill Fairey
[address]
[address]

Dear Bill:

We are pleased to offer you the position of Executive Vice President, Chief Commercial Officer with MyoKardia, Inc. Your compensation will be $20,833.33, semi-monthly, which is equal to $500,000 annualized ("Base Salary"), payable in accordance with the Company's standard payroll schedule. This position will report directly to me. This is a full-time position. While you render services to the Company, you will not engage in any other employment, consulting or other business activity (whether full-time or part-time) that would create a conflict of interest with the Company. By signing this letter, you confirm to the Company that you have no contractual commitments or other legal obligations that would prohibit you from performing your duties for the Company.

Cash Compensation: This salary will be subject to adjustment pursuant to the Company's employee compensation policies in effect from time to time. In addition, the company has a performance-based variable cash bonus program. Subject to an acceptable level of corporate performance, the Board of Directors may approve payment of performance bonuses after the first of next year. If bonuses are paid, your target percentage will be 45% of your salary as the basis for calculating your bonus. Your actual bonus will depend on your own and the company's performance for the year just completed. Bonuses will be pro-rated for partial years of service and only if you are hired prior to October 1 of the current year.

As part of your offer, we are pleased to offer you a sign-on bonus of $225,000. This bonus will be paid in one lump sum within sixty-days of your hire date. This sign-on bonus is taxable, and all regular payroll taxes will be withheld. In the event that you leave MyoKardia within 12 months of your hire date, you will be responsible for reimbursing the company for the entire bonus amount.

Employee Benefits: As a regular employee of the Company, you will be eligible to participate in a number of Company-sponsored benefits, including 401(k) Retirement and Investment Plan and also in ESPP (Employee Stock Purchase Plan) during scheduled enrollment periods. In addition, you will be entitled to 20 days of paid time off in accordance with the Company's policy. You can also review additional benefits information in the attached MyoKardia Employee Benefits Information Guide 2018.

Stock Options: Subject to the approval of the Company's Compensation Committee, you will be granted an option to purchase 69,500 shares of the Company's Common Stock. The exercise price per share will be equal to the closing price of the Company's Common Stock as reported on NASDAQ as of the first trading day of the month following the later of (a) your date of hire or (b) the date of approval by the Company's Compensation Committee. The options will be subject to the terms and conditions applicable to options granted under the Company's 2015 Stock Option and Incentive Plan (the "Plan"), as described in the Plan and the applicable stock option agreement.

You will vest in 25% of the option shares after 12 months of continuous employment, and the balance will vest in equal monthly installments over the next 36 months of continuous employment, as described in the applicable stock option agreement.

Restricted Stock Units. Subject to the approval of the Company's Compensation Committee, you will be granted Restricted Stock Units ("RSUs") for 32,500 shares of the Company's Common Stock under the Plan, effective as of the first trading day of the month following the later of (a) your date of hire or (b) the date of approval by the Company's Compensation Committee (such date, the "Grant Date"). You will vest in 25% of the shares underlying the RSUs after 12 months of continuous employment from the Grant Date, and the balance will vest in equal annual installments over the next three (3) years of your continuous employment, as described in the applicable RSU award agreement.

Employee Confidentiality and Assignment Agreement: You will be required, as a condition of your employment with the Company, to sign the Company's standard Employee Confidentiality and Assignment Agreement, a copy of which is attached.

Background Check: The Company may conduct a background or reference check (or both). If so, then you agree to cooperate fully in those procedures, and this offer is subject to the Company's approving the outcome of those checks, in the discretion of the Company.

Employment Relationship: Employment with the Company is for no specific period of time. Your employment with the Company will be "at will," meaning that either you or the Company may terminate your employment at any time and for any reason, with or without cause. Any contrary representations that may have been made to you are superseded by this letter agreement. This is the full and complete agreement between you and the Company on this term. Although your job duties, title, reporting relationship, compensation and benefits, as well as the Company's personnel policies and procedures, may change from time to time, the "at will" nature of your employment may only be changed in an express written agreement signed by you and a duly authorized officer of the Company (other than you).

Notwithstanding the previous paragraph, if your employment with the Company is terminated without Cause (as defined below), subject to your signing a separation agreement containing, among other provisions, a general release of claims in favor of the Company and related persons and entities, confidentiality, return of property and non-disparagement, in a form and manner satisfactory to the Company (the "Separation Agreement and Release") and the Separation Agreement and Release becoming irrevocable, all within 60 days after the end of your employment, the Company shall pay you a lump sum payment equal to 9 months of your Base Salary less tax-related deductions and withholdings, within ten (10) days after the later of the separation date or the date the Company receives all Company property and Proprietary Information that you are obligated to return under the Separation Agreement. The Company will also, to the extent that you are eligible to continue to participate in our medical and dental plans under COBRA and you elect to continue such benefits, pay your payments for COBRA coverage for nine (9) months from the Separation Date.

Bill Fairey

The payment of your Base Salary and the making of COBRA payments on your behalf are together the "Severance Amount" to be paid to you. The receipt of any Severance Amount will be subject to your not violating the Employee Confidentiality and Assignment Agreement, the terms of which are hereby incorporated by reference. In the event you breach the Employee Confidentiality and Assignment Agreement, in addition to all other legal and equitable remedies, the Company shall have the right to terminate or suspend all continuing payments to which you may otherwise be entitled without affecting your release or your obligations under the Separation Agreement and Release.

For purposes of this letter agreement, "Cause" means (i) conduct by you constituting a material act of misconduct in connection with the performance of your duties, including, without limitation, misappropriation of funds or property of the Company or any of its subsidiaries or affiliates; (ii) the commission by you of any crime involving moral turpitude, deceit, dishonesty or fraud, or any conduct by you that would reasonably be expected to result in material injury or reputational harm to the Company or any of its subsidiaries and affiliates if you were retained in your position; (iii) continued non-performance by you of your duties hereunder which has continued for more than 30 days following written notice of such non-performance from the Company, which notice specifies in reasonable detail the nature of such purported non-performance and requests its cure; (iv) a material violation by you of the Company's written employment policies, material breach by you of any statutory or common law duty of loyalty to the Company, or breach of any of your covenants with the Company; or (v) failure to cooperate with a bona fide internal investigation or an investigation by regulatory or law enforcement authorities, after being instructed by the Company to cooperate, or the willful destruction or failure to preserve documents or other materials known to be relevant to such investigation or the inducement of others to fail to cooperate or to produce documents or other materials in connection with such investigation.

Change in Control Benefits: As a senior leader, you will be eligible for the benefits available to members of the Company's senior management team pursuant to the terms and conditions of the Company's Change in Control Policy (as the same may be amended from time to time), a copy of which will be made available to you upon request.

Taxes: All forms of compensation referred to in this letter agreement are subject to reduction to reflect applicable withholding and payroll taxes and other deductions required by law. You agree that the Company does not have a duty to design its compensation policies in a manner that minimizes your tax liabilities, and you will not make any claim against the Company or its Board of Directors related to tax liabilities arising from your compensation.

Interpretation, Amendment and Enforcement: This letter agreement, the Employee Confidentiality and Assignment Agreement and Exhibit A constitute the complete agreement between you and the Company, contain all of the terms of your employment with the Company and supersede any prior agreements, representations or understandings (whether written, oral or implied) between you and the Company.

MYOKARDIA

This letter agreement may not be amended or modified, except by an express written agreement signed by both you and a duly authorized officer of the Company. The terms of this letter agreement and the resolution of any disputes as to the meaning, effect, performance or validity of this letter agreement or arising out of, related to, or in any way connected with, this letter agreement, your employment with the Company or any other relationship between you and the Company will be governed by California law, excluding laws relating to conflicts or choice of law.

We look forward to working with you, and hope that you will accept our offer to join the Company. You may indicate your agreement with these terms and accept this offer by signing and dating both the enclosed duplicate original of this letter agreement and the enclosed Proprietary Information and Inventions Agreement and return these documents to the Human Resources Department to confirm your acceptance no later than January 6, 2019, as this offer, if not accepted, will expire at the close of business on January 7. 2019. As required by law, your employment with the Company is contingent upon your providing legal proof of your identity and authorization to work in the United States. We would like your official start date to be on or before January 28, 2019.

If you have any questions, please do not hesitate to contact me at 650-741-7796.

Very truly yours,

Tassos Gianakakos
Chief Executive Officer

ACKNOWLEDGMENT AND ACCEPTANCE OF THE TERMS STATED ABOVE:

/s/ Bill Fairey	January 28, 2019
Bill Fairey	Agreed upon start date

MYOKARDIA

Attachment

Employee Confidentiality and Assignment Agreement
Exhibit A - Prior Inventions
Exhibit B - California Labor Code (reference)
Sign-on Bonus Repayment Form

Driven by the **Heart**

333 Allerton Avenue, South San Francisco, CA 94080 / +1 650 351 4705 / myokardia.com

Exhibit 10.12

MYOKARDIA, INC. (THE "COMPANY")
CHANGE IN CONTROL AND SEVERANCE POLICY

ADOPTED ON OCTOBER 17, 2015
(AMENDED ON OCTOBER 24, 2018)
(AMENDED ON FEBRUARY 22, 2019)

In the event a senior management employee of the Company experiences an Involuntary Termination (as defined below), including a Sale Event Termination (as defined below), such senior management employee shall be entitled to receive either the Involuntary Termination Benefits (as defined below) or the Sale Event Termination Benefits (as defined below), as applicable, subject, in either case, to each such employee's execution and non-revocation of a severance agreement within 60 days following the date of such termination, including a general release of claims acceptable to the Company or its successor or acquirer.

Involuntary Termination Benefits:

- No automatic acceleration of vesting of outstanding stock options and other equity awards with time-based vesting; and
- Payment of (a) severance in a lump sum in the amounts set forth below and (b) if the employee was participating in the Company's group health plan immediately prior to the date of termination of his or her employment and elects COBRA health continuation, payment of a monthly cash payment for the period set forth below or the employee's COBRA health continuation period, whichever ends earlier, in an amount equal to the monthly employer contribution that the Company would have made to provide health insurance to the employee if the employee had remained employed by the Company:

Position	Severance (Amount of Base Salary)	Bonus	Benefits Continuation
Chief Executive Officer	12 months	None	12 months
Executive Vice President and Senior Vice President	9 months	None	9 months
Vice President	6 months	None	6 months

Sale Event Termination Benefits:

- Full acceleration of vesting of outstanding stock options and other equity awards with time-based vesting; and

- Payment of (a) severance in a lump sum in the amounts set forth below, (b) target bonus in the amounts set forth below and (c) if the employee was participating in the Company's group health plan immediately prior to the date of termination of his or her employment and elects COBRA health continuation, payment of a monthly cash payment for the period set forth below or the employee's COBRA health continuation period, whichever ends earlier, in an amount equal to the monthly employer contribution that the Company would have made to provide health insurance to the employee if the employee had remained employed by the Company:

Position	Severance (Amount of Base Salary)	Bonus	Benefits Continuation
Chief Executive Officer	18 months	1.5x bonus target	18 months
Senior Management Employees (1)	12 months	1x bonus target	12 months

(1) Senior Management Employees include all employees of the Company at the level of Vice President and above (other than the Chief Executive Officer).

The amounts payable pursuant to this policy, including both the Involuntary Termination Benefits and the Sale Event Termination Benefits, shall be paid or commence to be paid within 60 days following the date of termination of employment, provided that if the 60-day period begins in one calendar year and ends in a second calendar year, such payments shall be paid or commence to be paid in the second calendar year by the last day of such 60-day period.

In addition, upon the consummation of a Sale Event, to the extent Section 280G of the Internal Revenue Code is applicable to such employee, each employee shall be entitled to receive either: (a) payment of the full amounts set forth above to which the employee is entitled or (b) payment of such lesser amount that does not trigger excise taxes under Section 280G, whichever results in the employee receiving a higher amount after taking into account all federal, state, and local income, excise and employment taxes.

For purposes of this policy,

"Good Reason" means that the affected employee followed the "Good Reason Process" (as defined below) following the occurrence of (a) a material diminution in the employee's job responsibilities (provided that a mere change in title or reporting relationship shall not be deemed a material diminution in job responsibilities), (b) a 10% or greater reduction in the employee's base salary (except for across-the-board salary reductions in the salaries of all similarly situated employees based on the Company's financial performance), or (c) the relocation of the employee's principal place of business to a location that is more than 50 miles from the employee's then-current location of employment.

"Good Reason Process" means that (i) the employee reasonably determines in good faith that a "Good Reason" condition has occurred; (ii) the employee notifies the Company or its successor in writing of the first occurrence of the Good Reason condition within 60 days of the first

occurrence of such a condition; (iii) the employee cooperates in good faith with the Company's or its successor's efforts for a period of not fewer than 30 days following such notice (the "Cure Period") to remedy the condition; (iv) notwithstanding such efforts, the Good Reason continues to exist; and (v) termination of the employee's employment occurs no later than seven days following the expiration of the Cure Period.

"Involuntary Termination" means termination of employment or other service relationship with the Company (or its successor or acquirer) without Cause (as defined in the Plan) or for Good Reason other than a Sale Event Termination.

"Involuntary Termination Benefits" means the benefits payable following an Involuntary Termination.

"Plan" means the Company's 2015 Stock Option and Incentive Plan.

"Sale Event" means 'Sale Event' as defined in the Plan.

"Sale Event Termination" means an Involuntary Termination that occurs within one year following completion of a Sale Event.

"Sale Event Termination Benefits" means the benefits payable following a Sale Event Termination.

This policy shall be administered by the Company, and the Company shall have the power and authority to interpret the terms and provisions of this policy, to make all determinations it deems advisable for the administration of this policy, to decide all disputes arising in connection with this policy and to otherwise supervise administration of this policy. The Company retains the right to amend, revise, change or end this policy at any point in the future; provided that the Company may not amend or end the policy during the period commencing on the date that it enters into a definitive agreement that if consummated, would result in a Sale Event and ending on the earlier of (i) 12 months after a Sale Event and (ii) the termination of the definitive agreement without the consummation of a Sale Event. This policy does not change the "at-will" employment status of any employee.

In the event an employee of the Company is party to an agreement or other arrangement with the Company that provides greater benefits than set forth in this policy, such employee shall be entitled to receive the payments or benefits under such other agreement or arrangement and shall not be eligible to receive any payments or benefits under this policy.

The payments under this policy are intended either to be exempt from Section 409A of the Internal Revenue Code of 1986, as amended ("Section 409A") under the short-term deferral, separation pay, or other applicable exception, or to otherwise comply with Section 409A. This policy shall be administered in a manner consistent with such intent. For purposes of Section 409A, all payments under this policy shall be considered separate payments. To the extent that any payment or benefit described in this policy constitutes "non-qualified deferred compensation" under Section 409A, and to the extent that such payment or benefit is payable upon an employee's termination of employment, then such payments or benefits shall be payable only upon such employee's "separation from service" (determined in accordance with the

presumptions set forth in Treasury Regulation Section 1.409A 1 (h)). Notwithstanding any provision to the contrary, to the extent an employee is considered a specified employee under Section 409A and would be entitled during the six-month period beginning on such employee's separation from service to a payment that is not otherwise excluded under Section 409A, such payment will not be made until the earlier of (i) the date six months and one day after the employee's separation from service or (ii) the employee's death. This policy may be amended as may be necessary to fully comply with Section 409A and all related rules and regulations in order to preserve the payments and benefits provided hereunder. The Company makes no representation or warranty and shall have no liability to any employee or any other person if any provisions of this Agreement are determined to constitute deferred compensation subject to Section 409A but do not satisfy an exemption from, or the conditions of, such Section.

EXHIBIT 10.13

MYOKARDIA, INC.

AMENDED AND RESTATED NON-EMPLOYEE DIRECTOR COMPENSATION POLICY

The purpose of this Amended and Restated Non-Employee Director Compensation Policy (the "Policy") of MyoKardia, Inc., a Delaware corporation (the "Company"), is to provide a total compensation package that enables the Company to attract and retain, on a long-term basis, high-caliber directors who are not employees or officers of the Company. In furtherance of this purpose, effective as of the date of approval by the Company's Board of Directors (the "Board") of this Policy (the "Effective Date"), all non-employee directors shall be paid compensation for services provided to the Company as set forth below:[1]

Cash Retainers

Annual Retainer for Board Membership: $40,000 for general availability and participation in meetings and conference calls of the Board. Additional $30,000 for service as lead independent director or non-executive Chairperson of the Board. No additional compensation for attending individual Board meetings.

Additional Annual Retainers for Committee Membership and Service as Chairperson:

Audit Committee Chairperson: $20,000

Audit Committee member: $10,000

Compensation Committee Chairperson: $15,000

Compensation Committee member: $7,500

Science and Technology Committee Chairperson: $15,000

Science and Technology Committee member: $7,500

Nominating and Corporate Governance Committee Chairperson: $10,000

Nominating and Corporate Governance Committee member: $5,000

No additional compensation for attending individual committee meetings.

All cash retainers will be paid quarterly, in arrears, or upon the earlier resignation or removal of the non-employee director. Cash retainers owing to non-employee directors shall be annualized, meaning that with respect to non-employee directors who join the Board during the calendar year, such amounts shall be pro-rated based on the number of calendar days served by such director.

Equity Retainers

Initial Equity Grant: One-time equity grants to each new non-employee director upon his/her election to the Board after the Effective Date of (a) an option to purchase 13,200 shares of the Company's common stock, par value $0.0001 per share ("Common Stock") and (b) a grant of restricted stock units for 4,500 shares of Common Stock. Such initial option grant shall vest in equal monthly installments during the 48 months following the date upon

[1] Upon effectiveness, this policy shall supersede any prior arrangements between the Company and the directors.

which the director is first elected to the Board and such initial restricted stock unit grant shall vest in equal annual installments during the four years following the date upon which the director is first elected to the Board, in each case subject to the director's continued service on the Board.

On the date of each Annual Meeting of Stockholders: Annual equity grants to each non-employee director who (a) is serving on the Board as of immediately prior the Company's annual meeting of stockholders and (b) continues to serve on the Board immediately after such annual meeting consisting of (i) an option to purchase 6,600 shares of Common Stock and (ii) restricted stock units for 2,300 shares of Common Stock. Such annual option grant shall vest in equal monthly installments during the 12 months following the date of grant, and such annual restricted stock unit grant shall vest in a single installment on the first anniversary of the date of grant, in each case subject to the director's continued service on the Board as of such date.

Additional Equity Grants: In addition to the foregoing, non-employee directors may also be granted such additional equity awards in such amounts and on such dates as the Board may recommend.

Upon the consummation of a Sale Event (as defined in the Company's 2015 Stock Option and Incentive Plan, as may be amended, restated or otherwise modified from time to time), the vesting of all outstanding unvested equity awards, including stock options and restricted stock units, granted to each non-employee director under this policy shall accelerate in full.

The form of option agreement will give directors up to one year following cessation of service as a director to exercise the options (to the extent vested at the date of such cessation), provided that the director has not been removed for cause.

All of the foregoing option grants will have an exercise price equal to the fair market value of a share of Common Stock on the date of grant.

Expenses

The Company shall reimburse all reasonable out-of-pocket expenses incurred by non-employee directors in attending Board and committee meetings.

Amended and Restated Non-Employee Director Compensation Policy approved by the Board of Directors on March 9, 2016.

Amended and Restated Non-Employee Director Compensation Policy approved by the Board of Directors on December 6, 2018, effective retroactively to January 1, 2018.

Amended and Restated Non-Employee Director Compensation Policy approved by the Board of Directors on January 23, 2019.

Exhibit 10.22

OYSTER POINT MARINA PLAZA

Office Lease

SUITES 306 & 321

to

MYOKARDIA,INC., a
Delaware corporation

395 Oyster Point Boulevard
South San Francisco, CA 94080

OYSTER POINT MARINA PLAZA
Office Lease

THIS OFFICE LEASE (the "Lease") is entered into as of October 22, 2018, by and between **KASHIWA FUDOSAN AMERICA, INC**., a California corporation ("Landlord") and **MYOKARDIA, INC.**, a Delaware corporation ("Tenant").

1 BASIC LEASE TERMS

1.1 LEASE OF PREMISES. Landlord leases to Tenant, and Tenant rents and hires from Landlord, the premises described in S 1.3 below, in the building known by the street address 395 Oyster Point Boulevard (the "Building") in the City of South San Francisco, County of San Mateo, State of California, on the property described in S 1.6 below, in the business park commonly known as Oyster Point Marina Plaza (the "Complex"), for the term stated in S 1.4 below, for the rents hereinafter reserved, and upon and subject to the terms, conditions (including limitations, restrictions, and reservations), and covenants hereinafter provided. The Building and the Complex are more particularly described and depicted in **Exhibit A** which is attached hereto. Each party hereby expressly covenants and agrees to observe and perform all of the conditions and covenants herein contained on its part to be observed and performed.

1.2 SUMMARY TABLE . The parties agree that the following table (the "Table") sets forth in summary form the basic terms of this Lease, including the specific space comprising the Premises and, with respect to such space, the Term of the Lease, the usable and rentable square footage, the Base Rent, Base Year, and Tenant's Share, as all of such terms are defined below:

PERIOD	SUITE NO.	RSF	USF	MONTHLY BASE RENT	T's SHARE BLDG	T's SHARE COMPLEX	BASE YEAR
Commencement Date through March 12	306	5,314	4,466	75,106.00	944.%	4.727%	2019
	321	16,776	14,369				
Month 13 through Month 15	306	5,314	4,466	77,359.18	9.44%	4.727%	2019
	321	16,776	14,369				

In the event of any conflict between the terms contained in the Table and the terms contained in subsequent sections of the Lease, the terms of the Table shall control, except that any dates stated in the Table are subject to adjustments as appropriate to the extent any other provisions of the Lease provide for adjustments to the Commencement Date and/or the Expiration Date.

1.3 PREMISES. The premises leased to Tenant comprise approximately 22,090 rentable square feet of space on the third (3rd) floor of the Building and are commonly known as Suites 306 (5,314 rsf) & 321 (16,776 rsf) (collectively the "Premises"), as shown on the floor plan annexed hereto as Exhibit B (the "Space Plan"). As used throughout this Lease, all references to "Suite 306" shall be deemed to include the space unofficially designated as Suite 302, as depicted on the Space Plan. The Premises also include all fixtures and equipment which are attached thereto, except items not deemed to be included therein and which are removable by Tenant as provided in Article 10 below. Landlord and Tenant agree that the usable and rentable area of the Premises, and the respective rentable areas of the Property (as defined in S 1.6 below) and Complex, for all purposes under this Lease, are as follows and as specified in the Table:

Property's Rentable Area: 233,914 rsf
Complex's Rentable Area: 467,360 rsf.

Tenant acknowledges that it has caused its architect to verify the numbers stated in the Table and herein relating to the measurements of such spaces prior to the Commencement Date of this Lease or has had an opportunity to do so.

1.4 TERM; TARGET DATE. The term (the "Term") for which the Premises are hereby leased shall extend for a period of fifteen (15) months, shall commence on the earlier to occur of (i) the later to occur of (a) January 1, 2019 and (b) the day which falls thirty (30) days after the date on which the Premises are ready for occupancy (as defined in Article 3) or (ii) the day on which Tenant or anyone claiming under or through Tenant first occupies the Premises for the purpose of conducting its business therein (but not including tenant improvement work and physical space preparations) (the "Commencement Date"), and shall end at noon on the last day of the calendar month in which occurs the day preceding the fifteenth (15th) mensiversary of the Commencement Date (the "Expiration Date") or any earlier date upon which the Term may expire or be cancelled or terminated pursuant to any of the conditions or covenants of this Lease or pursuant to law. The parties anticipate that the Premises will be ready for Tenant's early entry on or before January 1, 2019 (the "Fixturization Access Date"), subject to the early entry provisions of S 3.3 below, and agree that Tenant shall be allowed thirty (30) days from and after the Fixturization Access Date in which to install its fixtures and equipment in the Premises prior to the Commencement Date. If the Fixturization Access Date holds as stated in the preceding sentence, the Commencement Date of the Lease will be February 1, 2019 (the "Target Date"), subject to adjustment as provided herein, and that, if the Target Date holds as planned for thirty (30) days after the Fixturization Access Date, the Expiration Date will be April 30, 2020. Promptly following the Commencement Date the parties hereto shall enter into a supplementary agreement fixing the dates of the Commencement Date and the Expiration Date in the form which is attached hereto as Exhibit E and incorporated herein by reference.

1.5 RENT. The "Rent" reserved under this Lease, for the Term thereof, shall consist of the following:

(a) "Base Rent" as set forth in the Table for the various spaces and periods described therein per month, which shall be payable in advance on the first day of each and every calendar month during the Term of this Lease, except that Tenant shall pay the first month's Base Rent due under the Lease upon the execution and delivery of this Lease by Tenant; and

(b) "Additional Rent" consisting of any and all other sums of money as shall become payable by Tenant to Landlord hereunder; and Landlord shall have the same remedies for default in the payment of Additional Rent as for a default in payment of Base Rent).

1.5.1 Payment of Rent. Tenant shall pay the Base Rent and Additional Rent promptly when due, without demand therefor and without any abatement, deduction, or setoff whatsoever, except as may be expressly provided in this Lease. Tenant shall pay the Rent to Landlord, in lawful money of the United States of America, at Landlord's office at the Complex or at such other place, or to such agent and at such place, as Landlord may designate by notice to Tenant. If the Commencement Date occurs on a day other than the first day of a calendar month, the Base Rent for such calendar month shall be prorated based on a 30-day month, and the balance of the first month's Base Rent theretofore paid shall be credited against the next monthly installment of Base Rent. Notwithstanding anything to the contrary in this Lease, Tenant shall pay the first month's Base Rent due hereunder, together with the Security Deposit due under S 5.1 below, upon Tenant's execution and delivery of this Lease to Landlord.

1.5.2 Interest and Late Charges. If Tenant fails to pay any Rent when due, the unpaid amounts shall bear interest from the due date until paid at a rate per annum equal to the Prime Rate plus five percent (5%) or, if less, at the highest rate of interest permitted by applicable law. As used herein, "Prime Rate" means the prime rate published in the Money Rates section of the Wall Street Journal (Western

edition) as the same may change from time to time or in a similar publication if the Wall Street Journal ceases publication or ceases publication of its Money Rates section during the Term.

Tenant acknowledges that the late payment of any monthly Rent will cause Landlord to lose the use of that money and incur costs and expenses not contemplated under this Lease, including administrative and collection costs and processing and account expenses, the exact amount of which it is difficult to ascertain. Therefore, in addition to interest, if any such installment is not received by Landlord within five (5) days from the date it is due, Tenant shall pay Landlord a late charge equal to ten percent (10%) of such installment. Landlord and Tenant agree that this late charge represents a reasonable estimate of such costs and expenses and is fair compensation to Landlord for the loss suffered from such nonpayment by Tenant. In addition, any check returned by the bank for any reason will be considered late and will be subject to all late charges plus an additional returned check fee of Twenty Dollars ($20.00). After two such occasions upon which checks have been returned in any twelve-month period, Landlord will have the right to require payment by a cashier's check or money order. Acceptance of any interest or late charge shall not constitute a waiver of Tenant's default with respect to such nonpayment by Tenant nor prevent Landlord from exercising any other rights or remedies available to Landlord under this Lease or at law or in equity, unless the payment of such interest and late charges is accompanied by all rentals then due and owning (notwithstanding anything to the contrary in S 20.2.1 below).

1.6 PROPERTY. For the purposes of this Lease, the "Property" shall mean the Building and any common or public areas or facilities, easements, corridors, lobbies, sidewalks, loading areas, driveways, landscaped areas, skywalk, parking garages and lots, and any and all other structures or facilities operated or maintained in connection with or for the benefit of the Building, and all parcels or tracts of land on which all or any portion of the Building or any of the other foregoing items are located, and any fixtures, machinery, equipment, apparatus, Systems and Equipment (as defined in S 1.6.5 below), furniture and other personal property located thereon or therein and used in connection therewith, whether title is held by Landlord or its affiliates. The Property shall also be deemed to include such other of the Complex's buildings or structures (and related facilities and parcels on which the same are located) as Landlord shall have incorporated by reference to the total square footage of the Building stated in S 1.3 above.

1.6.1 Common Areas. Tenant and its agents, employees, and invitees shall have the non-exclusive right with others designated by Landlord to the free use of the common areas in the Property and the Complex for the common areas' intended and normal purpose. The term common areas shall mean elevators, sidewalks, parking areas, driveways, hallways, stairways, public restrooms, common entrances, lobbies, and other similar public areas and access ways.

1.6.2 Athletic Facility. Notwithstanding the foregoing, the common areas do not include the Building's athletic facility (the "Athletic Facility"), which is an unsupervised and unattended weight and exercise room and shower facility. Tenant acknowledges that Landlord presently makes available (but is not obligated under this Lease to make available) the Athletic Facility for the general use of all tenants and their officers and employees, subject to such rules and regulations as Landlord may impose from time to time in its sole and absolute discretion regarding the use thereof. Tenant shall cause each of its officers and employees using the Athletic Facility to sign and deliver to Landlord an "Athletic Facility Use Agreement" in the form attached hereto as Exhibit D as such form may be revised by Landlord from time to time in its sole and absolute discretion. Tenant understands and agrees that no individual shall be permitted use of or access to the Athletic Facility unless and until such individual shall have first signed and delivered the Athletic Facility Use Agreement to Landlord. Landlord shall have the right to limit the use of the Athletic Facility in any manner it may deem necessary, or to discontinue the Athletic Facility altogether, at any time, in its sole and absolute discretion, and neither Tenant nor its officers or employees shall be entitled to any compensation, credit, allowance, or offset of expenses or Rent as a result of any such limitation or discontinuance.

1.6.3 Reservation to Landlord. Notwithstanding anything to the contrary herein, possession of areas necessary for utilities, services, safety, and operation of the Property, including the Systems and Equipment, telephone closets (whether located in the common areas or in the Premises), fire exits and stairways, perimeter walls, space between the finished ceiling of the Premises and the slab of the floor or roof of the Property there above, and the use thereof, together with the right to install, maintain, operate, repair, and replace any part of the Systems and Equipment in, through, under, or above the Premises in locations that will not materially interfere with Tenant's use of the Premises, are hereby excepted from both the Premises and the common areas and are reserved by Landlord and not demised to Tenant. Tenant's access to the telephone closets on each floor and the Building's main telephone room shall be subject to the Rules (as defined in S 13.1 below) and shall be permitted only with Landlord's written consent and under the supervision of Landlord's Building Engineer on each occasion that such access is sought.

1.6.4 Changes and Alterations of the Property. Landlord reserves the right to make repairs, alterations, additions, or improvements, structural or otherwise, in or to the Property or Complex as deemed necessary or desirable in Landlord's sole and absolute discretion, so long as such repairs or alterations do not materially and unreasonably interfere with Tenant's access to or beneficial use of the Premises for their intended purposes. Landlord reserves the right hereunder to do the following: (i) install, use, maintain, repair, and replace pipes, ducts, conduits, wires, and appurtenant meters and equipment for service to the various parts of the Property above the ceiling surfaces, below the floor surfaces, within the walls, and in the central core areas; (ii) to relocate any pipes, ducts, conduits, wires, and appurtenant meters and equipment which are located in the Premises or located elsewhere outside the Premises; (iii) expand the Building or the Complex; (iv) make changes to the Property or the Complex, including changes, expansions, and reductions in the location, size, shape, and number of driveways, entrances, loading and unloading areas, ingress, egress, direction of traffic, landscaped areas, walkways, parking spaces, and parking areas; (v) close any of the common areas, so long as reasonable access to the Premises remains available; (vi) use the common areas while engaged in making additional improvements, repairs, or alterations to the Property, Complex, or any portion thereof; and (vii) do and perform such other acts and make such other changes in, to, or with respect to the Property, Complex, common areas, and Building as Landlord may deem appropriate. The exercise of any of the foregoing rights shall not subject Landlord to claims for constructive eviction, abatement of Rent, damages, or other claims of any kind, except as otherwise expressly provided in this Lease. If Landlord enters the Premises to exercise any of the foregoing rights, Landlord shall provide reasonable advance written or oral notice to Tenant's on-site manager.

1.6.5 Systems and Equipment. As used in this Lease, "Systems and Equipment" means collectively any existing plant, machinery, transformers, duct work, intrabuilding network cables and wires that transmit voice, data, and other telecommunications signals ("INC"), and other equipment, facilities, and systems designed to supply water, heat, ventilation, air conditioning and humidity or any other services or utilities, or comprising or serving as any component or portion of the electrical, gas, steam, plumbing, sprinkler, communications, alarm, security, or fire/ life/ safety systems or equipment, or any other mechanical, electrical, electronic, computer or other systems or equipment for the Property.

2 USE

2.1 USE AND ENJOYMENT OF PREMISES. Tenant shall use and occupy the Premises for executive and general offices and for no other purpose. Notwithstanding anything contained herein to the contrary, Tenant may use portions of the Premises not to exceed one hundred fifty (150) usable square feet for the preparation and reheating of food and beverages, including the use of refrigerators, ice makers, coffee machines, hot plates, microwave ovens, or similar heating devices (but not for the actual cooking of food) for service only to Tenant's employees and business invitees.

2.1.1 Suitability. Tenant acknowledges that neither Landlord nor any agent of Landlord has made any representation or warranty with respect to the Premises, the Property, or the Complex, or with respect to the suitability of same for the conduct of Tenant's business, except as expressly provided in this Lease. Tenant's acceptance of possession of the Premises shall conclusively establish that the foregoing were at such time in satisfactory condition. Landlord makes no representation to Tenant regarding the installation, ownership, location, or suitability for Tenant's purposes of the INC in the Building.

2.1.2 Insurance Rates. Tenant shall not do or suffer anything to be done in or about the Premises, nor shall Tenant bring or allow anything to be brought into the Premises, which will in any way increase the rate of any fire insurance or other insurance upon the Property or its contents, cause a cancellation of said insurance, or otherwise affect said insurance in any manner.

2.1.3 Use to Comply with Laws. Tenant shall use the Premises in conformity with all applicable Laws, as specified in Article 6 below.

2.1.4 Floor Loading. Tenant shall not place or permit to be placed on any floor a load exceeding eighty (80) pounds per square foot or such lower floor load as such floor was designed to carry.

which shall fall on the ninetieth (90th) day after the date of Tenant's execution and delivery of this Lease to Landlord, then, in addition to Tenant's other rights and remedies, Tenant may terminate this Lease by written notice to Landlord, whereupon any moneys previously paid by Tenant to Landlord shall be reimbursed to Tenant.

3.2.2 Landlord's Work. The facilities, materials, and work to be furnished, installed, and performed in the Premises by Landlord hereunder at Landlord's sole cost and expense are referred to as the "Work." Any other installations, materials, and work which may be undertaken by or for the account of Tenant to prepare, equip, decorate, and furnish the Premises for Tenant's occupancy are referred to as the "Tenant's Work," which shall be undertaken or installed by Tenant at Tenant's sole cost and expense and which shall include the installation of Tenant's furniture, fixtures, office systems, and Tenant's data and telecommunications cables and wiring. Landlord's Work shall be constructed in accordance with the approved Plans and all applicable Laws, in a good and workmanlike manner, free of defects, and using new materials and equipment of good quality. The parties agree that Landlord's Work shall comprise the following elements and the following elements only, which Landlord shall undertake, perform, and install at Landlord's sole cost and expense on a turnkey basis, as shown on the Space Plan:

(a) removal of the middle office from Suite 306 to open a pathway to Suite 302;

(b) installation of new Building-standard carpet throughout the Premises;

(c) application of new Building-standard paint throughout the Premises; and

(d) delivery of the Premises with all Systems and Equipment serving the same in good working order and condition.

3.2.3 Readiness for Occupancy. The Premises shall be deemed ready for occupancy on the earliest date on which all of the following conditions (the "Occupancy Conditions") have first been met:

(a) **Substantial Completion of Work**. The Work has been substantially completed as determined by Landlord its reasonable discretion and, if applicable, Landlord's architect has issued a certificate of substantial completion; and it shall be so deemed notwithstanding the fact that minor or insubstantial details of construction, mechanical adjustment, or decoration remain to be performed, the noncompletion of which does not materially interfere with Tenant's beneficial use of the Premises for their intended purposes;

(b) **Access and Services**. Reasonable means of access and facilities necessary to Tenant's use and occupancy of the Premises, including corridors, elevators, stairways, heating, ventilating, air-conditioning, sanitary, water, and electrical facilities (but exclusive of parking facilities) have been installed and are in reasonably good operating order and available to Tenant; and

(c) **Required Governmental Approval**. If a building permit for the Work is required, a final inspection card or similar governmental approval (temporary or final) has been issued by the City of South San Francisco permitting use of the Premises for office purposes.

3.2.4 **Tenant Delays**. If the occurrence of any of the Occupancy Conditions and Landlord's preparation of the Premises for occupancy shall be delayed owing to either (a) any act, omission, or failure of Tenant or any of its employees, agents, or contractors which shall continue after Landlord shall have given Tenant reasonable notice that such act, omission, or failure would result in delay, and such delay shall have been unavoidable by Landlord in the exercise of reasonable diligence and prudence; or (b) the nature of any items of additional work or change orders that Landlord undertakes to perform for the account of Tenant (including any delays incurred by Landlord, after making reasonable efforts, in procuring any materials, equipment, or fixtures of a kind or nature not used by Landlord as part of its standard construction) (collectively "Tenant Delays"), then the Premises shall be deemed ready for occupancy on the date when they would have been ready but for such Tenant Delays.

3.3 EARLY ENTRY . During any period that Tenant shall be permitted to enter the Premises prior to the Commencement Date other than to occupy the same (e.g., to perform alterations or improvements), Tenant shall comply with all terms and provisions of this Lease, except those provisions requiring the payment of Rent. If Tenant shall be permitted to enter the Premises prior to the Commencement Date for the purpose of occupying the same, Rent shall commence on such date at the rate specified in the Table for the first period during which Rent is payable after the Commencement Date; and if Tenant shall commence occupying only a portion of the Premises prior to the Commencement Date, Rent shall be prorated based on the number of rentable square feet occupied by Tenant. Landlord shall permit early entry, provided the Premises are legally available and Landlord has completed any Work required under this Lease. In no event shall Tenant's early entry extend or shorten the Term of the Lease set forth in S 1.2 above. Notwithstanding anything to the contrary herein, Tenant shall have the right enter the Premises free from the obligation to pay Rent for the period commencing on the date of the parties' full execution and delivery of this Lease to each other for the limited purposes installing Tenant's furniture and fixtures and telephone and data equipment, lines, and cabling and otherwise preparing the Premises for Tenant's occupancy (but not the purpose of conducting its business therein), provided that Tenant's activity does not interfere with Landlord's completion of the Work and that Tenant has delivered to Landlord the insurance certificates and the Security Deposit required hereunder.

3.4 FINAL COMPLETION. Substantial completion shall not prejudice Tenant's rights to require full completion of any remaining items of Work; however, if Landlord notifies Tenant in writing that the Work is fully completed, and Tenant fails to object thereto in writing within fifteen (15) days thereafter specifying in reasonable detail the items of work needed to be completed and the nature of work needed to complete said items, Tenant shall be deemed conclusively to have accepted the Work as fully completed (or such portions thereof as to which Tenant has not so objected).

3.5 NOTICE OF DEFECTS. It shall be conclusively presumed upon Tenant's taking actual possession of the Premises that the same were in satisfactory condition (except for latent defects) as of the date of such taking of possession, unless within thirty (30) days after the Commencement Date Tenant shall give Landlord notice in writing specifying the respects in which the Premises were not in satisfactory condition as to patent defects, and Landlord shall repair any such patent defects of which Landlord received notice from Tenant within thirty (30) days after the Commencement Date at no cost to Tenant as soon as reasonably practicable; and as to latent defects, Tenant shall give notice in writing to Landlord whenever any such latent defect becomes apparent, and Landlord shall repair any such patent defects at no cost to Tenant as soon as reasonably practicable.

4 ADJUSTMENTS OF RENT

4.1 TAXES AND OPERATING EXPENSES . In addition to the Base Rent and all other payments due under this Lease, Tenant shall pay to Landlord, in the manner set forth in this Article 4, as Additional Rent, the following amounts:

(a) **Increased Operating Expenses**. An amount equal to Tenant's Pro Rata Share of that portion of Operating Expenses paid by Landlord during each Adjustment Period which exceeds the amount of Base Operating Expenses (as all of such terms are defined in S 4.2 below); and

(b) **Increased Taxes**. An amount equal to Tenant's Pro Rata Share of that portion of Real Estate Taxes paid by Landlord during each Adjustment Period which exceeds the amount of Base Real Estate Taxes (as all of such terms are defined in S 4.2 below).

Tenant's Pro Rata Share of (i) such increase in Operating Expenses over the Base Operating Expenses and (ii) such increase in Real Estate Taxes over the Base Real Estate Taxes is sometimes referred to collectively herein as the "Rental Adjustment."

4.2 DEFINITIONS. For the purposes of this Lease, the following definitions shall apply:

(a) **Base Operating Expenses**. "Base Operating Expenses" means the total of Operating Expenses paid by Landlord during calendar year 2019 (the "Base Expense Year"), as adjusted under S 4.5 below.

(b) **Base Real Estate Taxes**. "Base Real Estate Taxes" means the total of Real Estate Taxes paid by Landlord during calendar year 2019 (the "Base Tax Year").

(c) **Tenant's Pro Rata Share**. "Tenant's Pro Rata Share" as to the Building is the percentage labeled as such in the Table in S 1.2 and is calculated by dividing the agreed rentable area of the Premises (numerator) by the agreed rentable area of the Property (denominator) and expressing the resulting quotient as a percentage. "Tenant's Pro Rata Share" as to the Complex is the percentage labeled as such in the Table in S 1.2 as is calculated by dividing the agreed rentable area of the Premises (numerator) by the agreed rentable area of the Complex (denominator) and expressing the resulting quotient as a percentage. Tenant's Pro Rata Share shall be increased during the Term in proportio n to any increase in the area of the Premises in accordance with the formula stated herein.

(d) **Adjustment Period**. "Adjustment Period" as to Operating Expenses and Real Estate Taxes means each calendar year of which any portion occurs during the Term, excluding the Base Year and beginning with the first calendar year immediately following the Base Year.

(e) **Real Estate Taxes**. "Real Estate Taxes" means all of the following charges, whether or not now customary or in the contemplation of the parties hereto, and whether or not general, special, ordinary, or extraordinary, which Landlord shall pay during any Adjustment Period because of or in connection with the ownership, leasing, or operation of the Property:

(1) ad valorem real property taxes;

(2) any form of assessment, license fee, license tax, business license fee, commercial rental tax, levy, charge, fee, tax, or other imposition imposed by any authority, including any city, county, state, or federal governmental agency, or any school, agricultural, lighting, transportation, housing, drainage, or other improvement or special assessment district thereof;

(3) any tax on Landlord's 'right' to rent or 'right' to other income from the Building or as against Landlord's business of leasing the Building;

(4) any assessment, tax, fee, levy, or charge in substitution, partially or totally, of any assessment tax, fee, levy or charge previously included within the definition of Real Estate Taxes, it being acknowledged by Tenant and Landlord that Proposition 13 was adopted by the voters of the State of California in the Election of June, 1978, and that assessments, taxes, fees, levies, and charges may be imposed by governmental agencies for such services as fire protection, street, sidewalk, and road maintenance, refuse removal, and for other governmental services formerly provided without charge to property owners or occupants, and it being the intention of Tenant and Landlord that all such new and increased assessments, taxes, fees, levies, and charges be included within the definition of Real Estate Taxes for the purposes of this Lease;

(5) any assessment, tax, fee, levy, or charge allocable to or measured by the area of the Building or Property or the Rent payable hereunder, including any gross income tax or excise tax levied by any city, county, state, or federal governmental agency or any political subdivision thereof with respect to the receipt of such Rent, or upon or with respect to the possession, leasing, operating, management, maintenance, alteration, repair, use, or occupancy by Tenant of the Property or any portion thereof;

(6) any assessment, tax, fee, levy, or charge upon this transaction or any document to which Tenant is a party, creating or transferring an interest or an estate in the Building or Property;

(7) any assessment, tax, fee, levy, or charge by any governmental agency related to any transportation plan, fund, or system instituted within the geographic area of which the Building is a part; or

(8) reasonable legal and other professional fees, costs and disbursements incurred in connection with proceedings to contest, determine or reduce Real Estate Taxes.

Exclusions. Notwithstanding the foregoing, Real Estate Taxes shall not include (A) federal, state, or local income taxes; (B) franchise, gift, transfer, excise, capital stock, estate, succession, or inheritance taxes; or (C) penalties or interest for late payment of Real Estate Taxes; (D) taxes or assessments levied on Landlord's rental income, unless such tax or assessment is imposed in lieu of real property taxes; (E) taxes or assessments in excess of the amount which would be payable if such tax or assessment expense were paid in installments over the longest permitted term; (F) taxes or assessments imposed on land and improvements other than the Complex; or (G) taxes or assessments resulting from the improvement of any of the Complex for the sole use of other occupants.

(f) **Operating Expenses**. "Operating Expenses" means all expenses, costs, and amounts (other than Real Estate Taxes) of every kind and nature which Landlord shall pay during any Adjustment Period of which any portion occurs during the Term, because of or in connection with the ownership, management, repair, maintenance, restoration, and/or operation of the Property, including costs of the following:

(1) all expenses, costs, and amounts of every kind and nature which Landlord shall pay during any Adjustment Period of which any portion occurs during the Term, because of or in connection with the electricity, power, gas, steam, oil or other fuel, water, sewer, lighting, heating, air conditioning, and ventilating delivered to or consumed or used in or on the Property, but excluding the cost of any utilities provided by a public utility directly to any tenant in the Complex and/or billed directly and separately by such utility or Landlord to such tenant by means of separate metering or otherwise;

(2) permits, licenses, and certificates necessary to operate, manage, and lease the Property;

(3) supplies, tools, equipment, and materials used in the operation, repair, and maintenance of the Property;

(4) all insurance premiums for any insurance policies deemed necessary or desirable by Landlord (including workers' compensation, health, accident, group life, public liability, property damage, earthquake, and fire and extended coverage insurance for the full replacement cost of the Property as required by Landlord or its lenders for the Property);

(5) the deductible portion of any claim paid under any insurance policy maintained by Landlord in connection with its management and operation of the Property, excluding, however, earthquake insurance deductibles in excess of $50,000 per occurrence;

(6) accounting, legal, inspection, consulting, concierge, and other services;

(7) services of independent contractors;

(8) compensation (including employment taxes and fringe benefits) of all persons who perform duties in connection with the operation, maintenance, repair, or overhaul of the Building or Property, and equipment, improvements, and facilities located within the Property, including engineers, janitors, painters, floor waxers, window washers, security, parking personnel, and gardeners;

(9) operation and maintenance of a room for delivery and distribution of mail to tenants of the Building as required by the U.S. Postal Service (including an amount equal to the fair market rental value of the mail room premises);

(10) management of the Building or Property, whether managed by Landlord or an independent contractor (including an amount equal to the fair market value of any on-site manager's office);

(11) rental expenses for (or a reasonable depreciation allowance on) personal property used in maintenance, operation, or repair of the Property and installment equipment purchase or equipment financing agreements for such personal property;

(12) costs, expenditures, or charges (whether capitalized or not) required by any governmental or quasi-governmental authority after the Commencement Date;

(13) payments under any easement, operating agreement, declaration, restrictive covenant, or instrument pertaining to the sharing of costs in any planned development;

(14) amortization of capital expenses (including financing costs) incurred by Landlord after the Commencement Date in order to (A) comply with Laws, (B) reduce Property Operating Expenses, or (C) upgrade the utility, efficiency, or capacity of any Utility or telecommunication systems serving tenants of the Property;

(15) operation, repair, and maintenance of all Systems and Equipment and components thereof (including replacement of components); janitorial service; alarm and security service; window cleaning; trash removal; elevator maintenance; cleaning of walks, parking facilities, and building walls; removal of ice and snow; replacement of wall and floor coverings, ceiling tiles, and fixtures in lobbies, corridors, restrooms and other common or public areas or facilities; maintenance and repair of the roof and exterior fabric of the Building, including replacement of glazing as needed; maintenance and replacement of shrubs, trees, grass, sod, and other landscaped items, irrigation systems, drainage facilities, fences, curbs, and walkways; repaving and restriping parking facilities; and roof repairs;

(16) the operation of any on-site maintenance shop(s) and the operation and maintenance of the Athletic Facility, any other fitness center, conference rooms, and all other common areas and amenities in the Property;

(17) provision of shuttle busses, shuttle services, and drivers between the Complex and BART and SFO airport, as required by the Bay Area Regional
Transportation Act and deed covenants and restrictions applicable to the Complex; and

(18) any other costs or expenses incurred by Landlord which are reasonably necessary to operate, repair, manage, and maintain the Building and Property in a first-class manner and condition and which are not otherwise reimbursed by tenants of the Building.
Exclusions. Notwithstanding the foregoing, Operating Expenses shall not include (A) depreciation, interest, and amortization on Superior Mortgages

(as defined in S 18.1 below), and other debt costs or ground lease payments, if any; (B) legal fees in connection with leasing, tenant disputes, or enforcement of leases; (C) real estate brokers' leasing commissions; (D) improvements or alterations to tenant spaces; (E) the cost of providing any service directly to, and reimbursed or paid directly by, any tenant; (F) any costs expressly excluded from Operating Expenses elsewhere in this Lease; (G) costs of any items to the extent Landlord receives reimbursement from insurance proceeds or from a third party (such proceeds to be deducted from Operating Expenses in the year in which received); (H) capital expenditures, except those expressly permitted above; provided, all such permitted capital expenditures (together with reasonable financing charges) shall be amortized for purposes of this Lease over the shorter of (x) their useful lives (as determined in accordance with generally accepted accounting principles), or (y) the period during which the reasonably estimated savings in Operating Expenses equals the expenditures; (I) expense reserves; (J) costs occasioned by casualties or condemnation; and (K) costs incurred in connection with the presence of any Hazardous Material, except (i) to the extent caused by the release or emission of the Hazardous Material in question by Tenant, its employees, contractors, agents, or business invitees and (ii) customary and ordinary costs of cleaning the Building and the Property, including associated parking lots.

4.3 MANNER OF PAYMENT. To provide for current payments of the Rental Adjustment, Tenant shall pay as Additional Rent during each Adjustment Period an amount equal to Landlord's estimate of the Rental Adjustment which will be payable by Tenant for such Adjustment Period. Such payments shall be made in monthly installments, commencing on the first day of the month following the month in which Landlord notifies Tenant of the amount it is to pay hereunder and continuing until the first day of the month following the month in which Landlord gives Tenant a new notice of the estimated Rental Adjustment. It is the intention hereunder to estimate from time to time the amount of Tenant's Rental Adjustment for each Adjustment Period and then to effect a reconciliation in the following year based on the actual expenses incurred for the preceding Adjustment Period, as provided in 4.4 below.

4.4 RECONCILIATION. On or before the first day of April of each year after the first Adjustment Period (or as soon thereafter as is practical), Landlord shall deliver to Tenant a statement (the "Statement") setting forth the Rental Adjustment for the preceding year. If the actual Rental Adjustment for the preceding Adjustment Period exceeds the total of the estimated monthly payments made by Tenant for such Adjustment Period, Tenant shall pay Landlord the amount of the deficiency within thirty (30) days of the receipt of the Statement. If such total of estimated payments made exceeds the actual Rental Adjustment for such Adjustment Period, then Tenant shall receive a credit for the difference against payments of Rent next due. If the credit is due from Landlord on the Expiration Date, Landlord shall pay Tenant the amount of the credit, less any Rent then due. The obligations of Tenant and Landlord to make payments required under this S 4.4 shall survive the expiration or earlier termination of the Term of this Lease.

4.4.1 Changes in Method. So long as Tenant's obligations hereunder are not materially adversely affected thereby, Landlord reserves the right reasonably to change from time to time the manner or timing of the foregoing payments. In lieu of providing one Statement covering Real Estate Taxes and Operating Expenses, Landlord may provide separate statements, at the same or different times. No delay by Landlord in providing the Statement (or separate statements) shall be deemed a default by Landlord or a waiver of Landlord's right to require payment of Tenant's obligations for actual or estimated Real Estate Taxes or Operating Expenses. In no event shall a decrease in Real Estate Taxes or Operating Expenses below the Base Operating Expenses or Base Real Estate Taxes ever decrease the monthly Base Rent or give rise to a credit in favor of Tenant.

4.4.2 Proration of Rental Adjustment. If the Term does not commence on January 1 or does not end on December 31, Tenant's obligations to pay estimated and actual amounts towards Real Estate Taxes and Operating Expenses for such first or final calendar year shall be prorated to reflect the portion of such year(s) included in the Term. Such proration shall be made by multiplying the total estimated or actual (as the case may be) Real Estate Taxes and Operating Expenses for such calendar year(s), as well as the Base Real Estate Taxes and Base Operating Expenses, by a fraction, the numerator of which shall be the number of days of the Term during such calendar year, and the denominator of which shall be three hundred sixty-five (365).

4.5 GROSS-UP. If the Building is less than ninety-five percent (95%) occupied during the Base Period or any Adjustment Period, then Operating Expenses and Real Estate Taxes for the Base Period and/or such Adjusånent Period shall be "grossed up" to that amount of Operating Expenses and Real Estate Taxes that, using reasonable projections, would normally have been incurred during the Base Period and/or such Adjustment Period if the Building had been ninety-five percent (95%) occupied during the Base Period and/or such Adjustment Period, as determined in accordance with sound accounting and management practices, consistently applied. Only those component elements or items of expense of Operating Expenses and Real Estate Taxes that are affected by variations in occupancy levels shall be grossed up.

4.6 ADJUSTMENT OF BASE OPERATING EXPENSES. Notwithstanding anything to the contrary contained in the Lease, the parties agree that Base Operating Expenses and Operating Expenses for any subsequent Adjustment Period (herein called "Subsequent Operating Expenses") shall be subject to further adjustment by Landlord as follows:

(a) **Exclusion of Capital Expenditures**. Landlord may exclude from Base Operating Expenses capital expenditures otherwise permitted, provided Landlord shall also exclude any amortization of such expenditures from Subsequent Operating Expenses.

(b) **Elimination of Recurring Expenses**. If Landlord eliminates from any Subsequent Operating Expenses a category of recurring expenses previously included in Base Operating Expenses, Landlord may subtract such category from Base Operating Expenses commencing with such subsequent Adjustment Period.

(c) **New Recurring Expenses**. If Landlord includes a new category of recurring Subsequent Operating Expenses not previously included in Base Operating Expenses, Landlord shall also include an amount (the "Assumed Base Amount") for such category in Base Operating Expenses commencing in such subsequent Adjustment Period.

(d) **Assumed Base Amount**. The "Assumed Base Amount" under S 4.6(c) above shall be the annualized amount of expenses for such new category in the first Adjustment Period it is included, reduced by an amount determined in Landlord's sole good faith discretion (but in no event by an amount less than five percent (5%)) for each full or partial Adjustment Period that has elapsed during the Term of the Lease before such Adjustment Period.

4.7 ADJUSTMENT OF REAL ESTATE TAXES . If Base Real Estate Taxes are reduced as the result of protest, by means of agreement, as the result of legal proceedings, or otherwise, Landlord may adjust Tenant's obligations for Real Estate Taxes in all years affected by any refund of taxes following the Base Tax Year; and Tenant shall pay Landlord within thirty (30)days after notice any additional amount required by such adjustment for any Adjustment Periods that have theretofore occurred. Tenant shall be entitled to receive a share of any refund or abatement of Real Estate Taxes received by Landlord to the extent of and in proportion to Tenant's actual contribution to the amount of Real Estate Taxes paid by Landlord during the period to which such refund or abatement relates, but in no event shall Tenant be entitled to any refund with respect to Real Estate Taxes paid by Landlord during Tenant's Base Tax Year. If Real Estate Taxes for any Adjustment Period during the Term or any extension thereof shall be increased after payment thereof

by Landlord for any reason, including error or reassessment by applicable governmental authorities, Tenant shall pay Landlord upon demand Tenant's Pro Rata Share of such increased Real Estate Taxes. Tenant shall pay increased Real Estate Taxes whether Real Estate Taxes are increased as a result of increases in the assessment or valuation of the Property (whether based on a sale, change in ownership, refinancing of the Property, or otherwise), increases in the tax rates, reduction or elimination of any rollbacks or other deductions available under current law, scheduled reductions of any tax abatement, as a result of the elimination, invalidity, or withdrawal of any tax abatement, or for any other cause whatsoever. Notwithstanding the foregoing, if any Real Estate Taxes shall be paid based on assessments or bills by a governmental authority using a fiscal year other than a calendar year, Landlord may elect to average the assessments or bills for the subject calendar year, based on the number of months of such calendar year included in each such assessment or bill.

4.8 ALLOCATION WITHIN COMPLEX. So long as the Property shall be part of the Complex collectively owned or managed by Landlord or its affiliates or collectively managed by Landlord's managing agent, Landlord may allocate Real Estate Taxes and Operating Expenses within the Complex and between the buildings and sfructures comprising the Complex and the parcels on which they are located, in accordance with sound accounting and management principles. In the alternative, Landlord shall have the right to determine, in accordance with sound accounting and management principles, Tenant's Pro Rata Share of Real Estate Taxes and Operating Expenses based upon the totals of each of the same for all such buildings and structures, the land constituting parcels on which the same are located, and all related facilities, including common areas and easements, corridors, lobbies, sidewalks, elevators, loading areas, parking facilities, driveways, and other appurtenances and public areas, in which event Tenant's Pro Rata Share shall be based on the ratio of the rentable area of the Premises to the rentable area of all buildings in the Complex.

4.9 LANDLORD'S RECORDS. Landlord shall maintain records with respect to Real Estate Taxes and Operating Expenses and determine the same in accordance with sound accounting and management practices, consistently applied. Although this Lease contemplates the computation of Real Estate Taxes and Operating Expenses on a cash basis, Landlord shall make reasonable and appropriate accrual adjustments to ensure that each Adjustment Period includes substantially the same recurring items. Landlord reserves the right to change to a full accrual system of accounting so long as the same is consistently applied and Tenant's obligations are not materially adversely affected. Tenant or its representative shall have the right to examine such records, upon reasonable prior written notice specifying such records Tenant desires to examine, during normal business hours at the place or places where such records are normally kept, by sending such notice no later than forty-five (45) days following the furnishing of the Statement.

4.10 OTHER TAXES PAYABLE BY TENANT . In addition to the Base Rent and any other charges to be paid by Tenant hereunder, Tenant shall, as an element of Rent, reimburse Landlord upon demand for any and all taxes payable by Landlord (other than net income taxes) which are not otherwise reimbursable under this Lease, whether or not now customary or within the contemplation of the parties, where such taxes are upon, measured by, or reasonably attributable to (A) the cost or value of Tenant's equipment, furniture, fixtures, and other personal property located at the Premises, or the cost or value of any improvements made in or to the Premises by or for Tenant, regardless of whether title to such improvements is held by Tenant or Landlord; (B) the gross or net Rent payable under this Lease, including any rental or gross receipts tax levied by any taxing authority with respect to the receipt of the Rent hereunder; (C) the possession, leasing, operation, management, maintenance, alteration, repair, use, or occupancy by Tenant of the Premises or any portion thereof; or (D) this transaction or any document to which Tenant is a party creating or transferring an interest or an estate in the Premises. Tenant shall pay any rent tax, sales tax, service tax, transfer tax, value-added tax, or any other applicable tax on the Rent or services herein or otherwise respecting this Lease.

4.11 RENT CONTROL. If the amount of Rent or any other payment due under this Lease violates the terms of any governmental restrictions on such Rent or payment, then the Rent or payment due during the period of such restrictions shall be the maximum amount allowable under those restrictions. Upon termination of the restrictions, Landlord shall, to the extent it is legally permitted, recover from Tenant the difference between the amounts received during the period of the restrictions and the amounts Landlord would have received had there been no restriction.

5 SECURITY DEPOSIT

5.1 DEPOSIT FOR SECURITY. Tenant shall deposit with Landlord the amount of Seventy-Seven Thousand Three Hundred Fifty-Nine Dollars and Eighteen Cents ($77,359.18) (the "Security Deposit") upon Tenant's execution and delivery of this Lease to Landlord in the form of the letter of credit described in S 5.1.1 below (the "LOC"). The Security Deposit shall serve as security for the prompt, full, and faithful performance by Tenant of the terms and provisions of this Lease, including the value of future rents as damages in accordance with California Civil Code S 1951.2, as set forth in S 20.3 below. Landlord shall not be required to keep the Security Deposit separate from Landlord's general funds or pay interest on the Security Deposit.

5.1.1 LOC Requirements. Tenant shall deposit with Landlord as the Security Deposit the LOC in the form of an unconditional, irrevocable, on-demand, sight-draft, standby letter of credit in favor of Landlord, issued by any of the five largest domestic national banking associations with a rating of "A" or Silicon Valley Bank and a banking office in the San Francisco Bay Area, permitting partial draws thereon, transferable, and otherwise in a form and substance reasonably acceptable to Landlord. The LOC shall be irrevocable for a period of one year and shall by its terms be automatically renewable for successive one year periods unless both Landlord and Tenant insfruct the issuing bank otherwise, or the issuing bank provides not less than sixty (60) days prior written notice thereof to Landlord. In the event of proposed termination of the LOC, the issuing bank shall notify Landlord by certified mail, return receipt requested at least sixty (60) days prior to termination. The LOC shall remain in effect for forty-five (45) days after the expiration date or earlier termination of the Term or any renewal Term. If for any reason the LOC fails to be in effect for such term, then Tenant shall be in material default of this Lease and Landlord shall have all rights and remedies at law or pursuant to this Lease with respect to an Event of Default, including (but not limited to) the right to draw the full amount of the LOC and retain the amounts so drawn as additional security for Tenant's performance of the covenants of this Lease. All costs for the issuance of said LOC shall be paid by Tenant.

5.1.2 Application of Deposit. In the event that Tenant is in Default hereunder and fails to cure within any applicable time permitted under this Lease, or in the event that Tenant owes any amounts to Landlord upon the expiration of this Lease, Landlord may use or apply the whole or any part of the Security Deposit for the payment of Tenant's obligations hereunder. The use or application of the Security Deposit or any portion thereof shall not prevent Landlord from exercising any other right or remedy provided hereunder or under any Law and shall not be construed as liquidated damages.

5.1.3 Restoration of Full Deposit. In the event the Security Deposit is reduced by such use or application, Tenant shall deposit with Landlord, within ten (10) days after written notice, an amount sufficient to restore the full amount of the Security Deposit. If the Premises shall be expanded at any time, or if the Term shall be extended at any increased rate of Rent, the Security Deposit shall thereupon be proportionately increased.

5.1.4 Disposition of Security Deposit. Within forty-five (45) days after the Expiration Date or any earlier termination of the Lease, any remaining portion of the Security Deposit shall be returned to Tenant after deduction of all amounts due as Rent or otherwise. **Tenant expressly waives the provisions of S 1950.7 of the California Civil Code.**

6 COMPLIANCE WITH LAWS

6.1 TENANT'S COMPLIANCE WITH LAWS. Tenant shall use the Premises in compliance with all applicable federal, state, county, and local governmental and municipal laws, statutes, ordinances, rules, regulations, codes, decrees, orders, and other such requirements, and decisions by courts in cases where such decisions are considered binding precedents in the State of California (the "State"), and decisions of federal courts applying the laws of the State (collectively "Laws"). Tenant shall, at its sole cost and expense, promptly comply with each and all of such Laws, and also with the requirements of any board of fire underwriters or other similar body now or hereafter constituted to deal with the condition, use, or occupancy of the Premises, except in the case of required structural changes not friggered by Tenant's change in its particular use of the Premises or Tenant's alterations, additions, or improvements therein. Tenant shall comply with all applicable Laws regarding the physical condition of the Premises, but only to the extent that the applicable Laws pertain to the particular manner in which Tenant uses the Premises or the particular use to which Tenant puts the Premises, if different from that permitted under Article 2 of this Lease. Tenant shall also comply with all applicable Laws which do not relate to the physical condition of the Premises and with which only the occupant can comply, such as laws governing maximum occupancy, workplace smoking, VDT regulations, and illegal business operations, such as gambling. The judgement of any court of competent jurisdiction or the admission of Tenant in any judicial action, regardless of whether Landlord is a party thereto, that Tenant has violated any of such Laws shall be conclusive of that fact as between Landlord and Tenant.

6.1.1 Code Costs. Notwithstanding anything to the contrary in this Article 6, if the requirement of any public authority obligates either Landlord or Tenant to expend money in order to bring the Premises and/or any area of the Property into compliance with Laws as a result of (a) Tenant's particular use or alteration of the Premises; (b) Tenant's change in the use of the Premises; (c) the manner of conduct of Tenant's business or operation of its installations, equipment, or other property therein; (d) any cause or condition created by or at the instance of Tenant, other than by Landlord's performance of any work for or on behalf of Tenant; or (e) breach of any of Tenant's obligations hereunder, then Tenant shall bear all costs ("Code Costs") of bringing the Premises and/or Property into compliance with Laws, whether such Code Costs are related to structural or nonstructural elements of the Premises or Property.

6.2 LANDLORD'S COMPLIANCE WITH LAWS. Landlord represents that on the Commencement Date Landlord has no actual knowledge of any violation of any applicable Laws respecting the Premises. During the Term Landlord shall comply with all applicable Laws regarding the Premises and Property, except to the extent Tenant must comply under S 6.1 above.

7 HAZARDOUS MATERIALS

7.1 REGULATION OF HAZARDOUS MATERIALS. Tenant shall not transport, use, store, maintain, generate, manufacture, handle, dispose, release, or discharge any "Hazardous Material" (as defined below) upon or about the Property, nor permit Tenant's employees, agents, contractors, and other occupants of the Premises to engage in such activities upon or about the Property. However, the foregoing provisions shall not prohibit the transportation to and from, and use, storage, maintenance, and handling within, the Premises of substances customarily used in offices, provided all of the following conditions are met:

(a) such substances shall be used and maintained only in such quantities as are reasonably necessary for such permitted use of the Premises, strictly in accordance with applicable Laws and the manufacturers' instructions therefor;

(b) such substances shall not be disposed of, released, or discharged on the Property and shall be transported to and from the Premises in compliance with all applicable Laws, and as Landlord shall reasonably require;

(c) if any applicable Laws or Landlord's trash removal cont-actor requires that any such substances be disposed of separately from ordinary trash, Tenant shall make arrangements at Tenant's expense for such disposal directly with a qualified and licensed disposal company at a lawful disposal site (subject to scheduling and approval by Landlord), and shall ensure that disposal occurs frequently enough to prevent unnecessary storage of such substances in the Premises; and

(d) any remaining such substances shall be completely, properly, and lawfully removed from the Property upon expiration or earlier termination of this Lease.

7.1.1 DEFINITION OF HAZARDOUS MATERIAL. The term "Hazardous Material" for purposes hereof shall mean any chemical, substance, material, or waste or component thereof which is now or hereafter listed, defined, or regulated as a hazardous or toxic chemical, substance, material, or waste or component thereof by any federal, state, or local governing or regulatory body having jurisdiction, or which would trigger any employee or community "right-to-know" requirements adopted by any such body, or for which any such body has adopted any requirements for the preparation or disfribution of an SDS.

7.2 NOTIFICATION OF LANDLORD. Tenant shall promptly notify Landlord of (A) any enforcement, cleanup, or other regulatory action taken or threatened by any governmental or regulatory authority with respect to the presence of any Hazardous Material on the Premises or the migration thereof from or to other property; (B) any demands or claims made or threatened by any party against Tenant or the Premises relating to any loss or injury resulting from any Hazardous Material on or from the Premises; and (C) any matters where Tenant is required by law to give a notice to any governmental or regulatory authority respecting any Hazardous Material on the Premises. Landlord shall have the right (but not the obligation) to join and participate, as a party, in any legal proceedings or actions affecting the Premises initiated in connection with any environmental, health, or safety law.

7.3 LIST OF HAZARDOUS MATERIALS. At such times as Landlord may reasonably request, Tenant shall provide Landlord with a written list identifying any Hazardous Material then used, stored, or maintained upon the Premises, the use and approximate quantity of each such material, a copy of any safety data sheet ("SDS") issued by the manufacturer thereof, written information concerning the removal, transportation, and disposal of the same, and such other information as Landlord may reasonably require or as may be required by law.

7.4 CLEANUP. If any Hazardous Material is released, discharged or disposed of by Tenant or any other occupant of the Premises, or their employees, agents, or contractors, on or about the Property in violation of the foregoing provisions, Tenant shall immediately, properly, and in compliance with applicable Laws clean up and remove the Hazardous Material from the Property and any other affected property and clean or replace any affected personal property (whether or not owned by Landlord), at Tenant's expense. Such clean up and removal work shall be subject to Landlord's prior written approval (except in emergencies), and shall include any testing, investigation, and the preparation and implementation of any remedial action plan required by any governmental body having jurisdiction or reasonably required by Landlord. If Tenant shall fail to comply with the provisions of this S 7.2 within five (5) days after written notice by Landlord, or such shorter time as may be required by Laws or in order to minimize any hazard to persons or property, Landlord may (but shall not be obligated to) arrange for such compliance directly or as Tenant's agent through contractors or other parties selected by Landlord, at Tenant's expense (without limiting Landlord's other remedies under this Lease or applicable Laws). To Landlord's actual knowledge, no action, proceeding, or claim is pending or threatened regarding the Property concerning any Hazardous Material or pursuant to any environmental law.

7.5 CASUALTY DAMAGE. If any Hazardous Material is released, discharged, or disposed of on or about the Property and such release, discharge, or disposal is not caused by Tenant or other occupants of the Premises, or their employees, agents, or contractors, such release, discharge, or disposal shall be deemed casualty damage under Article 15 to the extent that the Premises or common areas serving the Premises are affected thereby; in such case, Landlord and Tenant shall have the obligations and rights respecting such casualty damage provided under Article 15 of this Lease.

7.6 REFRIGERANT. Tenant shall not install any refrigerant-containing systems or equipment, including refrigerators, freezers, supplemental HVAC systems or self-contained air conditioners, without Landlord's prior approval, which Landlord may withhold in its sole discretion. Unless Tenant shall have obtained Landlord's prior written approval to install existing equipment after an inspection, at Tenant's sole cost and expense, by Landlord's engineer for defects and proper proposed installation in the Premises, all refrigerant-containing equipment and/or systems which Tenant installs in the Premises shall be new. Whether Tenant's refrigerant-containing equipment or systems are defective and are properly installed shall be determined at the sole discretion of Landlord's engineer. If Tenant wishes to install any refrigerant-containing equipment or systems, Tenant shall obtain and provide Landlord with copies of all required permits associated with such equipment or systems.

7.6.1 Removal of Refrigerant. Notwithstanding anything to the contrary in this Lease, Tenant shall remove all refrigerant and refrigerant-containing equipment and/or systems installed in the Premises by or on behalf of Tenant prior to the Expiration Date of this Lease. Prior to the removal of any such refrigerant or refrigerant-containing equipment and/or systems, Tenant shall submit to Landlord for Landlord's approval, the names of Tenant's contactors and all plans and specifications for such removal. Tenant and Tenant's contractors shall comply with all legal requirements, industry practices and rules established by Landlord in performing such removal work. Tenant shall repair any damage to the Property or the Systems and Equipment associated with such removal, and Tenant shall be responsible for the costs associated with restoring the Property to the condition which existed immediately prior to any modification undertaken by Landlord in order to accornmodate Tenant's refrigerant-containing equipment or systems.

8 SERVICES AND UTILITIES

8.1 LANDLORD'S SERVICES. Landlord agrees to provide, on the terms and conditions specified herein, the following services and Utilities for Tenant's use and consumption in the Premises, the cost of which shall be included in Operating Expenses and reimbursed to Landlord in accordance with S 4.1 above:

(a) **Electricity.** Electricity for standard office lighting fixtures and for equipment and accessories customary for offices, provided (i) the connected electrical load of all the same does not exceed an average of four (4) watts per usable square foot of the Premises (or such lesser amount as may be available, based on the safe and lawful capacity of the existing electrical circuit(s) and facilities serving the Premises); (ii) the electricity will be at nominal 120 volts, single phase (or 110 volts, depending on available service in the Building); and (iii) the safe and lawful capacity of the existing electrical circuit(s) serving the Premises is not exceeded. Landlord will permit its elect-ic feeders, risers, and wiring servicing the Premises to be used by Tenant to the extent available and safely capable of being used for such purpose.

(b) **Telecommunications Interface.** Interface with the telephone network at the demarcation point or minimum point of enty ("MPOE") supplied by the local regulated public utility by means of Landlord's NC consisting of cable pairs with a capacity consistent with the engineering standards to which the Building was designed.

(c) **HVAC.** Heat, ventilation, and air-conditioning ("HVAC") to provide a temperature required, in Landlord's reasonable opinion and in accordance with applicable Laws, for the comfortable occupancy of the Premises during business hours (as defined in S 8.1.1 below). Landlord shall not be responsible for inadequate air-conditioning or ventilation to the extent the same occurs because Tenant uses any item of equipment consuming more than 500 watts at rated capacity without providing adequate air-conditioning and ventilation therefor.

(d) **Water.** Water for drinking, lavatory and toilet purposes at those points of supply provided for nonexclusive general use of other tenants at the Property.

(e) **Janitorial Services.** Customary office cleaning and trash removal service Monday through Friday or Sunday through Thursday in and about the Premises.

(f) **Elevator Services.** Operatorless passenger elevator service and freight elevator service (if the Property has such equipment serving the Premises, and subject to scheduling by Landlord) in common with Landlord and other tenants and their contractors, agents, and visitors.

8.1.1 Business Hours. The term business hours in this Lease shall mean the hours from 8:00 a.m. until 6:00 p.m. on Monday through Friday and from 9:00 a.m. until 1:00 p.m. on Saturday throughout the year, except for New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, and any other federally-observed holiday which may be created during the Term ("Holidays").

8.2 ADDITIONAL ELECTRICAL CAPACITY . Any additional risers, feeders, or other equipment or service proper or necessary to supply Tenant's electrical requirements will be installed by Landlord, upon written request of Tenant, at the sole cost and expense of Tenant, if, in Landlord's sole judgement, the same are necessary and will not cause permanent damage or injury to the Property, the Premises, or the Systems and Equipment or cause or create a dangerous or hazardous condition or entail excessive or unreasonable alterations, repairs, or expense or interfere with or disturb other tenants or occupants. Rigid conduit only will be allowed.

8.2.1 Approved Electrical Load. Tenant agrees not to connect any additional electrical equipment of any type to the building electric distribution system, beyond that on Tenant's approved plans for initial occupancy, other than lamps, typewriters, and other office machines which consume comparable amounts of electricity or other electrical equipment which in the aggregate consumes the same amount of electricity as those approved for initial occupancy and will not result in any overload of electrical circuits, lines, or wiring, without Landlord's prior written consent. In no event shall Tenant use or install any fixtures, equipment, or machines the use of which in conjunction with other fixtures, equipment, and machines in the Premises would result in an overload or the electrical circuits servicing the Premises. Tenant covenants and agrees that at all times its use of electric current shall never exceed the capacity of the feeders to the Building or the risers or wiring installation existing at the time in question.

8.3 ADDITIONAL TELECOMMUNICATIONS CAPACITY. If Tenant desires any telecommunications capacity in excess of that available as of the Commencement Date in the form of the INC between the MPOE and the telephone closet nearest the Premises and provided pursuant to S 8.1 above, Tenant shall bear the cost of installing additional risers or INC or replacing existing INC serving the Premises pursuant to Article 9 below.

8.4 REPLACEMENT BULBS AND TUBES. Tenant shall furnish, install, and replace, as required, all non-building-standard lighting tubes, lamps, bulbs, and ballasts required in the Premises, at Tenant's sole cost and expense. All lighting tubes, lamps, bulbs, and ballasts so installed become Landlord's property upon the expiration or sooner termination of this Lease.

8.5 TWENTY-FOUR HOURS ACCESS. Subject to the provisions of S 8.8, Tenant, its employees, agents, and invitees shall have access to the Premises twenty-four (24) hours a day, seven (7) days a week. Landlord may restrict access outside of business hours by requiring persons to show a badge or identification card issued by Landlord. Landlord shall not be liable for denying entry to any person unable to show the proper identification. Landlord may without liability temporarily close the Building if required because of a life-threatening or Building-threatening situation.

8.6 EXTRA SERVICES. Landlord shall, subject to all applicable Laws, seek to provide such utilities or services in excess of those Landlord is required to provide under S 8.1 above as Tenant may from time to time request, if the same are reasonable and feasible for Landlord to provide and do not involve modifications or additions to the Property or the Systems and Equipment and if Landlord shall receive Tenant's request within a reasonable period prior to the time such extra utilities or services are required. Landlord may comply with written or oral requests by any officer or employee of Tenant, unless Tenant shall notify Landlord of, or Landlord shall request, the names of authorized individuals (up to three (3) for each floor on which the Premises are located) and procedures for written requests. Tenant shall, for such extra utilities or services, pay such charges as Landlord shall from time to time establish.

8.6.1 Extraordinary Service Usage. If Tenant shall utilize Building services for the Premises at any time other than during business hours, Landlord shall furnish such extraordinary services (excluding air-conditioning, except as provided below) at Landlord's then-current prevailing rate for such services. In addition to the foregoing services, if Tenant shall require air-conditioning service for the Premises at any time other than during business hours, Landlord shall, upon reasonable advance notice from Tenant, furnish such after-hours air-conditioning service at Landlord's then-current prevailing rate for such services as a separate charge; provided, however, in the event Tenant requests such after-hours air-conditioning service at a time not immediately preceding or immediately succeeding times when "regular hours" service is being furnished hereunder, then Tenant must request not less than five (5) hours of after-hours air-conditioning service. Notwithstanding anything contained herein to the contrary, Landlord's prevailing rate for the extraordinary services described herein shall be subject to increase from time to time as Landlord may reasonably determine.

8.6.2 Payment for Excess Usage. All charges for extra utilities or services or those requested outside business hours shall be due at the same time as the installment of Base Rent with which the same are billed, or if billed separately, shall be due within thirty (30) days after such billing.

8.6.3 Changes in HVAC System. Use of the Premises, or any part thereof, in a manner exceeding the design conditions (including occupancy and connected electrical load) for the heating or cooling units in the Premises, or rearrangement of partitioning which interferes with normal operation of the HVAC system in the Premises, may require changes in the HVAC system servicing the Premises. Such changes shall be made by Tenant, at its expense, as Tenant's Changes pursuant to Article 9. Tenant shall not change or adjust any closed or sealed thermostat or other element of the HVAC system without Landlord's express prior written consent.

8.6.4 Separate Metering. Landlord may install and operate meters or any other reasonable system for monitoring or estimating any services or utilities used by Tenant in excess of those required to be provided by Landlord under this Article 8 (including a system for Landlord's engineer reasonably to estimate any such excess usage). If such system indicates such excess services or utilities, Tenant shall pay Landlord's reasonable charges for installing and operating such system and any supplementary air-conditioning, ventilation, heat, electrical, or other systems or equipment (or

adjustments or modifications to the existing Systems and Equipment), and Landlord's reasonable charges for such amount of excess services or utilities used by Tenant. If Tenant's use of extra utilities or services causes Landlord's regulated baseline quantities of water, gas, electricity, or any other utility or service to be exceeded, Tenant shall pay for such excess quantities of such utilities or services at the rate which is imposed upon Landlord for quantities in excess of the regulated baseline. In addition, Tenant shall pay prior to delinquency any fine or penalty which may be imposed upon or assessed against Landlord or the Building or the Property by virtue of Tenant's excess usage of any services or utilities, including water, gas, and electricity.

8.6.5 Supplemental HVAC. If Tenant operates a supplemental HVAC unit in the Premises for cooling of a dedicated server room or otherwise, whether such unit is was existing on the Commencement Date, installed by Landlord as part of Landlord's Work to prepare the Premises for Tenant's occupancy, or installed later by Tenant as a Tenant's Change, Tenant shall pay to Landlord as an extra service charge all costs of operating such supplementary HVAC unit in accordance with the provisions of S 8.6.4 above as determined by separate submetering or the reasonable estimate of Landlord's engineer.

8.7 INTERRUPTION OF SERVICES. Landlord does not warrant that any services or utilities provided hereunder for Tenant's use in the Premises will be free from shortages, failures, variations, or interruptions caused by repairs, maintenance, replacements, improvements, alterations, changes of service, strikes, lockouts, labor controversies, accidents, inability to obtain services, fuel, steam, water or supplies, governmental requirements or requests, or other causes beyond Landlord's reasonable control, including interference with light or other incorporeal hereditaments and any interruption in services or any failure to provide services to Landlord by a designated utility company at the demarcation point at which Landlord accepts responsibility for such service or at any point prior thereto, which interference impedes Landlord in furnishing plumbing, HVAC, electrical, sanitary, life safety, elevator, telecommunications, or other Building services, utilities, or the Systems and Equipment. None of the same shall be deemed an eviction or disturbance of Tenant's use and possession of the Premises or any part thereof, shall render Landlord liable to Tenant for abatement of Rent, or shall relieve Tenant from performance of Tenant's obligations under this Lease. Landlord in no event shall be liable for damages by reason of loss of profits, business interruption, or other compensatory or consequential damages.

8.8 SAFETY AND SECURITY DEVICES, SERVICES, AND PROGRAMS. The parties acknowledge that safety and security devices, services, and programs provided by Landlord, if any, while intended to deter crime and ensure safety, may not in given instances prevent theft or other criminal acts or ensure safety of persons or property, and such devices, services and programs shall not under any circumstances be deemed to be a guaranty, representation, or warranty by Landlord to Tenant or any third parties as to the safety or protection of person or property. The risk that any safety or security device, service, or program may not be effective, or may malfunction, or be circumvented by a criminal, is assumed by Tenant with respect to Tenant's property and interests; and Tenant shall obtain insurance coverage to the extent Tenant desires protection against such criminal acts and other losses, as further described in Article 14. Tenant agrees to cooperate in any reasonable safety or security program developed by Landlord or required by Law.

9 TENANT'S CHANGES

9.1 TENANT'S REQUESTED CHANGES. Tenant may, subject to S 9.2 below, from time to time during the Term of this Lease, at its expense, make such alterations, additions, installations, substitutions, improvements, and decorations (collectively "Tenant's Changes") in and to the Premises as Tenant may reasonably consider necessary for the conduct of its business in the Premises (except for changes which would require modification of the Property outside the Premises), on the following conditions:

(a) the outside appearance or the strength of the Building or of any of its structural parts shall not be affected, and Tenant shall cause no penetration of the roof or the exterior fabric of the Building;

(b) no part of the Building outside of the Premises shall be physically affected;

(c) the proper functioning of any of the Systems and Equipment shall not be adversely affected, and the usage of such systems by Tenant shall not be increased;

(d) no such change shall require the addition of new INC riser cable or expand the number of telephone pairs dedicated to the Premises by the Buildings' telecommunications engineering design;

(e) in performing the work involved in making such changes, Tenant shall be bound by and observe all of the conditions and covenants contained in the following sections of this Article 9; and

(f) with respect to Tenant's Changes, Tenant shall make all arrangements for, and pay all expenses incurred in connection with, use of the freight elevators servicing the Premises.

9.2 PLANS AND APPROVAL . Before proceeding with any Tenant's Changes, Tenant shall advise Landlord thereof and arrange a meeting with the Building Manager, the Building Architect, and/or the Building Contractor, as required by Landlord in relation to the scope of the proposed Changes. Except in extraordinary circumstances which would reasonably require an exception, all work to be performed in the Building shall be performed by the Building Contractor on the basis of plans and drawings prepared by the Building Architect. If Landlord grants permission for Tenant to utilize another contractor and/or architect for its Changes, before proceeding with any Tenant's Changes, Tenant shall submit to Landlord plans and specifications and all changes and revisions thereto for the work to be done for Landlord's reasonable approval; and Tenant shall, upon demand of Landlord, pay to Landlord the reasonable costs incurred and paid to third parties by Landlord for the review of such plans and specifications and all changes and revisions thereto by its architect, engineer, and other consultants. Landlord may as a condition of its approval require Tenant to make reasonable revisions in and to the plans and specifications. Landlord may require Tenant to post a bond or other security reasonably satisfactory to Landlord to insure the completion of such change. If Landlord consents to any Tenant's Changes or supervises the work of constructing any Tenant's Changes, such consent or supervision shall not be deemed a warranty as to the adequacy of the design, workmanship, or quality of materials, and Landlord hereby expressly disclaims any responsibility or liability for the same. Landlord shall under no circumstances have any obligation to repair, maintain, or replace any portion of such work. Notwithstanding anything to the contrary herein, provided Tenant has given Landlord not less than thirty (30) days' advance written notice of the proposed construction and a detailed description of the work to be performed, Tenant may construct non-structural Changes in the Premises without Landlord's prior approval, if the cost of any such project does not exceed Twenty-Five Thousand Dollars ($25,000); provided, however, that Landlord reserves right to require reasonable changes in the proposed Change in its reasonable discretion.

9.2.1 As-Built Plans. Within thirty (30) days after completion of Tenant's Changes requiring the submission of plans to Landlord, Tenant shall furnish to Landlord a complete set of "as-built" plans and specifications.

9.3 PERMITS AND PERFORMANCE. Tenant, at its expense, shall obtain all necessary governmental permits and certificates for the commencement and prosecution of Tenant's Changes and for final approval thereof upon completion and shall furnish copies thereof to Landlord. Tenant shall cause Tenant's Changes to be performed in compliance therewith and with all applicable Laws and requirements of public authorities and with all applicable requirements of insurance bodies, and in good and workmanlike manner, using new materials and equipment at least equal in quality and class to the original installations in the Property. Tenant's Changes shall be performed in such manner as not unreasonably to interfere with, delay, or impose any additional expense upon Landlord in the renovation, maintenance, or operation of the Property or any portion thereof, unless Tenant shall indemnify Landlord therefor to the latter's reasonable satisfaction.

9.4 CONTRACTORS. All electrical, mechanical, and plumbing work in connection with Tenant's Changes shall be performed by Landlord's contractors at Tenant's expense. If Tenant shall request any electrical, mechanical, or plumbing work in connection with Tenant's Changes, Landlord shall request Landlord's contractors to furnish Tenant with prices to perform the same prior to prosecuting same. In addition to the foregoing, and notwithstanding anything to the contrary in this Article 9, Landlord may, at Landlord's option, require that the work of constructing any Tenant's Changes be performed by Landlord's contractor, in which case the cost of such work shall be paid for before commencement of the work.

9.5 SUPERVISION AND FEE. Landlord may require that all work of constructing Tenant's Changes be performed under Landlord's supervision. If Landlord does not elect to require that Tenant use Landlord's contractor, and if Tenant chooses to use its own contractor for the work of constructing Tenant's Changes, Tenant shall pay to Landlord upon completion of any such work by Tenant's contractor an administrative fee of fifteen percent (15%) of the cost of the work, to cover Landlord's overhead in reviewing Tenant's plans and specifications and performing any supervision of the work of Tenant's Changes. If Tenant chooses to use Landlord's contractor for such work, Tenant shall pay to Landlord upon completion an administrative fee equal to five percent (5%) of the cost of the work.

9.6 RESTORATION OF FIXTURES. If any of Tenant's Changes shall involve the removal of any fixtures, equipment, or other property in the Premises which are not Tenant's Property (as defined in Article 10), such fixtures, equipment, or other property shall be promptly replaced, at Tenant's expense, with new fixtures, equipment, or other property (as the case may be) of like utility and at least equal value, unless Landlord shall otherwise expressly consent in writing; and Tenant shall, upon Landlord's request, store and preserve, at Tenant's sole cost and expense, any such fixtures, equipment or property so removed and shall return same to Landlord upon the expiration or sooner termination of this Lease. Notwithstanding anything to the contrary herein, Landlord shall have no right to require Tenant to remove any alterations unless it notifies Tenant at the time it consents to an alteration that it shall require such alteration to be removed.

9.7 MECHANIC'S LIENS. Tenant shall keep the Property and Premises free from any mechanic's, materialman's, or similar liens or other such encumbrances, including the liens of any security interest in, conditional sales of, or chattel mortgages upon, any materials, fixtures, or articles so installed in and constituting part of the Premises, in connection with any Tenant's Changes on or respecting the Premises not performed by or at the request of Landlord and shall indemnify, defend, protect, and hold Landlord harmless from and against any claims, liabilities, judgements, or costs (including attorneys' fees) arising out of the same or in connection with any such lien, security interest, conditional sale or chattel mortgage or any action or proceeding brought thereon. Tenant shall give Landlord written notice at least twenty (20) days prior to the commencement of work on any Tenant's Change in the Premises (or such additional time as may be necessary under applicable Laws), in order to afford Landlord the opportunity of posting and recording appropriate notices of nonresponsibility. Tenant shall remove any such lien or encumbrance by

bond or otherwise within thirty (30) days after written notice by Landlord; and if Tenant shall fail to do so, Landlord may pay the amount necessary to remove such lien or encumbrance, without being responsible for investigating the validity thereof. The amount so paid shall be deemed Additional Rent under this Lease payable upon demand, without limitation as to other remedies available to Landlord under this Lease. Nothing contained in this Lease shall authorize Tenant to do any act which shall subject Landlord's title to the Property or Premises to any liens or encumbrances, whether claimed by operation of law or express or implied contract. Any claim to a lien or encumbrance upon the Property or Premises arising in connection with any Work on or respecting the Premises not performed by or at the request of Landlord shall be null and void, or, at Landlord's option, shall attach only against Tenant's interest in the Premises and shall in all respects be subordinate to Landlord's title to the Property and Premises.

9.8 NOTICES OF VIOLATION. Tenant, at its expense, and with diligence and dispatch, shall procure the cancellation or discharge of all notices of violation arising from or otherwise connected with Tenant's Changes which shall be issued by any governmental, public, or quasi-public authority having or asserting jurisdiction. However, nothing herein contained shall prevent Tenant from contesting, in good faith and at its own expense, any such notice of violation, provided that Landlord's rights hereunder are in no way compromised or diminished thereby.

9.9 INDUSTRIAL RELATIONS. Tenant agrees that the exercise of its rights pursuant to the provisions of this Article 9 or any other provision of this Lease shall not be done in a manner which would create any work stoppage, picketing, labor disruption, or dispute or violate Landlord's union contracts affecting the Property and/or Complex or interfere with the business of Landlord or any Tenant or occupant of the Building. Tenant shall, immediately upon notice from Landlord, cease any activity, whether or not permitted by this Lease, giving rise to such condition. If Tenant fails to do so, Landlord, in addition to any rights available to it under this Lease and pursuant to Law, shall have the right to an ex parte injunction without notice.

10 TENANT'S PROPERTY

10.1 FIXTURES AND IMPROVEMENTS. All fixtures, equipment, improvements, alterations, and appurtenances attached to or built into the Premises at the commencement of or during the Term of this Lease, including cabinets, sinks, faucets, appliances, hot water heaters, etc. (collectively "Improvements"), whether or not by or at the expense of Tenant, shall be and remain a part of the Premises, shall be deemed the property of Landlord, and shall not be removed by Tenant, except as expressly provided in Article 11 below.

10.2 TENANT'S PROPERTY AND TRADE FIXTURES. All movable partitions, trade fixtures, office machinery and equipment, communications equipment, and computer equipment (whether or not attached to or built into the Premises) which are installed in the Premises by or for the account of Tenant, without expense to Landlord and which can be removed without structural damage to the Property, and all furniture, furnishings, and other articles of movable personal property owned by Tenant and located in the Premises (collectively "Tenant's Property") shall be and shall remain the property of Tenant and may be removed by it at any time during the Term of this Lease; provided that if any of Tenant's Property is removed, Tenant or any party or person entitled to remove same shall repair or pay the cost of repairing any damage to the Premises or to the Property resulting from such removal. Any equipment or other property for which Landlord shall have granted any allowance or credit to Tenant or which has replaced such items originally provided by Landlord at Landlord's expense shall not be deemed to have been installed by or for the account of Tenant, without expense to Landlord, and shall not be considered Tenant's Property.

11 CONDITION UPON SURRENDER

11.1 CONDIT10N AND RESTORATION . At or before the Expiration Date or the date of any earlier termination of this Lease, or as promptly as practicable using Tenant's best efforts after such an earlier termination date, Tenant, at its expense, shall do all of the following:

(a) surrender possession of the Premises in as good condition as existed on the Commencement Date, ordinary wear and tear casualties, condemnation, Hazardous Materials (other than those released or emitted by Tenant, its employees, contractors, invitees, or other occupants of the Premises), alterations, or other interior improvements which Tenant is permitted to surrender at the termination of this Lease and repairs that Tenant is not responsible for under this Lease excepted;

(b) surrender all keys, any key cards, and any parking stickers or cards to Landlord and give Landlord in writing the combinations of any locks or vaults then remaining in the Premises;

(c) remove from the Premises all of Tenant's Property, including any data wiring and cabling that Tenant has installed, except such items thereof as Tenant shall have expressly agreed in writing with Landlord were to remain and to become the property of Landlord; and

(d) fully repair any damage to the Premises or the Property resulting from such removal.

Tenant's obligations herein shall survive the expiration or earlier termination of the Lease, unless expressly provided to the contrary herein. All Improvements and other items in or upon the Premises (except Tenant's Property), whether installed by Tenant or Landlord, shall be Landlord's property and shall remain upon the Premises, all without compensation, setoff, allowance, or credit to Tenant; provided, however, that if Landlord so directs by notice at the time it gives consent, Tenant shall promptly remove such of the Improvements in the Premises as are designated in such notice and shall restore the Premises to their condition prior to the installation of such Improvements. Notwithstanding the foregoing, Landlord shall not require removal of customary office improvements installed as part of Landlord's Work under S 3.2 above (except as expressly provided to the contrary therein), or installed by Tenant with Landlord's written approval (except as expressly required by Landlord in connection with granting such approval).

11.2 TENANT'S FAILURE TO REMOVE OR RESTORE . If Tenant shall fail to perform any repairs or restoration or fail to remove any items from the Premises as required under this Article 11, Landlord may do so, and Tenant shall pay Landlord the cost thereof upon demand. All property removed from the Premises by Landlord pursuant to any provisions of this Lease or any Law may be handled or stored by Landlord at Tenant's expense, and Landlord shall in no event be responsible for the value, preservation, or safekeeping thereof. All property not removed from the Premises or retaken from storage by Tenant within thirty (30) days after expiration or earlier termination of this Lease or Tenant's right to possession shall at Landlord's option be conclusively deemed to have been conveyed by Tenant to Landlord as if by bill of sale without payment by Landlord. Unless prohibited by applicable Laws, Landlord shall have a lien against such property for the costs incurred in removing and storing the same.

12 REPAIRS AND MAINTENANCE

12.1 TENANT'S CARE OF PREMISES. Except for customary cleaning and trash removal provided by Landlord under S 8.1 above and damage covered under Article 15, Tenant shall keep the Premises in good and sanitary condition, working order, and repair, including carpet, wall-covering, doors pertinent to and within the Premises, plumbing, all telecommunications cables and wiring within Tenant's Premises ("IW") from the interface of such IW with the INC, and other fixtures, equipment, alterations, and improvements, whether installed by Landlord or Tenant. In addition, Tenant, at its expense, shall promptly make all repairs, ordinary or extraordinary, interior or exterior, structural or otherwise, in and about the Premises and the Property, as shall be required by reason of (a) the performance or existence of Tenant's Work or Tenant's Changes; (b) the installation, use, or operation of Tenant's Property in the Premises; (c) the moving of Tenant's Property in or out of the Building; or (d) the misuse or neglect of Tenant or any of its employees, agents, or contractors. Tenant, at its expense, shall replace all doors or other glass that are scratched, damaged, or broken in or about the Premises during the Term and shall be responsible for all repairs, maintenance, and replacement of wall and floor coverings in the Premises and for the repair and maintenance of all lighting fixtures therein. All repairs except for emergency repairs made by Tenant as provided herein shall be performed by contractors or subcontractors approved in writing by Landlord prior to commencement of such repairs, which approval shall not be unreasonably withheld or delayed. If Tenant does not promptly make such arrangements, Landlord may, but need not, make such repairs, maintenance, and replacements, and the costs paid or incurred by Landlord therefor shall be reimbursed by Tenant promptly after request by Landlord. Notwithstanding anything to the contrary herein, Landlord shall perform and construct, and Tenant shall have no responsibility to perform or construct, any repair, maintenance or improvements (i) necessitated by the acts or omissions of Landlord or any other occupant of the Building, or their respective agents, employees, or contractors; (ii) for which Landlord has a right of reimbursement from others; (iii) to the structural portions of the Premises, including foundations and areas beneath foundations; or (iv) to the heating, ventilating, air conditioning, electrical, water, sewer, and plumbing systems serving the Building.

12.2 LANDLORD'S CARE OF PROPERTY . Landlord, at its expense, shall keep and maintain the common areas of the Property and the Systems and Equipment serving the Premises in good working order, condition, and repair and shall make all repairs, structural and otherwise, interior and exterior, as and when needed in or about the Premises, except for those repairs for which Tenant is responsible pursuant to S 12.1 above or any other provisions of this Lease. Landlord shall maintain and repair all INC in the Building, and Tenant shall have no right to make repairs to INC. The cost of Landlord's maintenance and repairs pursuant to this Article 12 shall be reimbursed to Landlord to the extent provided in Article 4 above.

12.3 WAIVER BY TENANT. Tenant waives the benefits of any statute now or hereafter in effect which would otherwise afford Tenant the right to make repairs at Landlord's expense or to terminate this Lease because of Landlord's failure to keep the Premises in good order, condition, and repair.

13 RULES AND REGULATIONS

13.1 OBSERVANCE AND MODIFICATION . Tenant and its employees and agents shall faithfully observe and comply with the Rules and Regulations attached hereto as Exhibit C (the "Rules") and such reasonable changes therein (whether by modification, elimination, or addition) as Landlord at any time or times hereafter may make and communicate in writing to Tenant, so long as such changes do not unreasonably affect the conduct of Tenant's business in the Premises, except as required by any applicable Law; provided, however, that in case of any conflict or inconsistency between the provisions of this Lease and any of the Rules as originally promulgated or as changed, the provisions of this Lease shall control.

13.2 APPLICATION TO TENANT. Nothing in this Lease shall be construed to impose upon Landlord any obligation to Tenant to enforce the Rules or the terms, covenants, or conditions in any other lease, as against any other tenant, and Landlord shall not be liable to Tenant for violation of the same by any other tenant or its employees, agents, or visitors.

14 INSURANCE AND INDEMNIFICATION

14.1 TENANT'S INSURANCE. Tenant shall obtain and maintain in effect at all times during Tenant's possession of the Premises the following insurance coverages and policies:

14.1.1 Liability Insurance. Tenant shall maintain a policy of commercial general liability insurance, which shall include coverages for (a) personal injury; (b) broad-form contractual liability; and (c) broad-form property damage liability. The minimum limits of liability shall be a combined single limit with respect to each occurrence of not less than Two Million Dollars ($2,000,000) and an aggregate limit of not less than Three Million Dollars ($3,000,000). Such limits may be met through any combination of primary and excess liability policies, provided that any umbrella or excess liability policy shall be in following form. The policy shall contain a cross-liability endorsement and a severability of interest clause. Tenant shall increase the insurance coverage as required by Landlord's lender or if Landlord's insurance consultant believes that the coverage is not adequate.

14.1.2 Tenant's Business Auto Liability Insurance. Tenant shall maintain business auto liability insurance with an "any auto, owned, non-owned, and hired" endorsement in an amount not less than Two Million Dollars ($2,000,000) combined single limit.

14.1.3 Tenant's Business Personal Property Insurance. Tenant shall maintain on all of its business personal property, including valuable business papers and accounts receivable; operating supplies; inventory; and furniture, fixtures, and equipment (whether owned, leased, or rented) (collectively "Business Personal Property") an "all risk" property damage insurance policy including coverages for sprinkler leakage and containing an agreed amount endorsement (or, if applicable, a business owner's policy with a no-coinsurance provision) in an amount not less than one hundred percent (100%) of the full replacement cost valuation of such Business Personal Property. The proceeds from any such policy shall be used by Tenant for the replacement of such Business Personal property.

14.1.4 Workers' Compensation Insurance. Tenant shall maintain workers' compensation insurance as required by law and employer's liability insurance in an amount not less than Five Hundred Thousand Dollars ($500,000).

14.1.5 Business Interruption/Extra Expense Insurance. Tenant shall maintain business interruption or (if applicable) contingent business interruption and extra expense insurance in such amounts as will reimburse Tenant for direct or indirect loss of earnings and incurred costs attributable to the perils commonly covered by Tenant's property insurance described in S 14.1.3 above but in no event less than the average total of Tenant's annual net profits plus annual continuing business expenses during the three-year period immediately preceding such interruption or loss. Such insurance will be carried with the same insurer that issues the insurance for Tenant's Business Personal Property pursuant to S 14.1.2 above.

14.1.6 Other Coverage. Tenant, at its cost, shall maintain such other insurance as Landlord may reasonably require from time to time, but in no event may Landlord require any other insurance which is not then available at commercially reasonable rates and is inconsistent with the requirements of comparable buildings in the area of South San Francisco.

14.2 TENANT'S INSURANCE CRITERIA. All insurance required to be maintained by Tenant under this Lease shall conform to the following criteria:

(i) Tenant's insurance shall be issued by insurance companies authorized to do business in the State of California with a financial rating of at least A-:VIII for any property insurance and at least A-:VIII for any liability insurance, as rated in the most recent edition of Best's Insurance Reports.

(ii) Tenant's commercial general liability insurance shall be issued as primary and noncontributory to any insurance maintained by Landlord.

(iii) Tenant's liability insurance policies shall name Tenant as the insured and Landlord, Landlord's agents, and any Lessors and Holders (as such terms are defined in S 18.1 below) whose names shall have been furnished to Tenant as additional insureds.

(iv) Should Tenant receive a notice of cancellation from the insurer of any of the insurance required in this Lease, Tenant shall notify Landlord in writing within five (5) business days of receipt of such notice. Tenant will take all reasonable steps to remedy the cause of any such cancellation or shall find replacement insurance meeting the requirements of this Lease, such that no lapse in the required insurance shall occur. Tenant shall provide written notice to Landlord that the pending cancellation has been rescinded or shall provide a certificate of insurance evidencing the replacement insurance, by the date the pending cancellation was to become effective.

(v) with respect to damage to or loss of Tenant's Business Personal Property, a waiver of subrogation must be obtained, as required under S 14.4 below.

14.2.1 Blanket Coverage. All of the insurance requirements set forth herein on the part of Tenant to be observed shall be deemed satisfied if the Premises are covered by a blanket insurance policy complying with the limits, requirements, and criteria contained in this Article 14 insuring all or most of Tenant's facilities in California.

14.2.2 Evidence of Coverage. A duplicate original policy or a certificate of insurance shall be deposited with Landlord at the commencement of the Term or, if earlier, upon Tenant's taking possession of the Premises; and on renewal of the policy a certificate of insurance listing the insurance coverages required hereunder and naming the appropriate additional insureds shall be deposited with Landlord not less than seven (7) days before expiration of the policy.

14.3 LANDLORD'S INSURANCE. Landlord shall maintain "all risk" property damage insurance containing an agreed amount endorsement covering not less than one hundred percent (100%) of the full insurable replacement cost valuation of (y) the Building and the tenant improvements, betterments, and the alterations thereto; and (z) Landlord's personal property, business papers, furniture, fixtures, and equipment (collectively "Landlord's Property"), exclusive of the costs of excavation, foundations and footings, and risks required to be covered by Tenant's insurance, and subject to commercially reasonable deductibles. Landlord shall also obtain and keep in full force the following policies of insurance: (a) commercial general liability insurance; (b) loss of rent insurance (also known as rent continuation insurance); (c) workers' compensation insurance, if required by applicable Law; and (d) such other insurance as Landlord deems appropriate or as may be required by any Holder or Lessor.

14.4 RELEASES AND WAIVERS OF SUBROGATION. The purpose of this provision is to allow Landlord and Tenant to allocate and assume certain risks to coincide with insurance coverages required to be maintained pursuant to the terms to this Lease. Landlord and Tenant recognize the benefit that each will receive from the waivers of subrogation each is required to obtain pursuant to this S 14.4 and that there are significant advantages to each in connection with minimizing duplication of insurance coverages. Accordingly, Landlord and Tenant agree to accept and place the limitations which follow on each other's respective liabilities and responsibility for damages in order to coincide with required insurance coverages.

14.4.1 Tenant's Property Agreement. In light of Tenant's agreement to insure Tenant's Business Personal Property in accordance with S 14.1.3 above, notwithstanding anything to the contrary in this Lease (but subject to S 14.5 below), Tenant agrees that Landlord will have no liability to Tenant in the event Landlord negligently damages or destroys all or any part of Tenant's Business Personal Property. Tenant will cause to be placed in its insurance policies covering Tenant's Business Personal Property a waiver of subrogation so that its insurance company will not become subrogated to Tenant's rights and will not be able to proceed against Landlord in connection with any such damage or destruction.

14.4.2 Landlord's Property Agreement. In light of Landlord's agreement to insure Landlord's Property in accordance with S 14.3 above, notwithstanding anything to the contrary in this Lease (but subject to S 14.5 below), Landlord agrees that Tenant will have no liability to Landlord in the event that Tenant negligently damages or destroys all or any part of Landlord's Property. Landlord will cause to be placed in its insurance policies covering Landlord's Property a waiver of subrogation so that its insurance company will not become subrogated to Landlord's rights and will not be able to proceed against Tenant in connection with any such damage or destruction.

14.4.3 Tenant's Release. Notwithstanding anything to the contrary in this Lease (but subject to S 14.5 below), Landlord shall not be responsible or liable to Tenant for any damages or destruction to Tenant's Business Personal Property caused by Landlord's employees, agents, visitors, invitees, guests, or independent contractors (collectively "Landlord's Associates"), and Tenant hereby releases Landlord from any claims, liabilities, demands, losses, damages, consequential damages, and the like, including reasonable attorneys' fees and court costs (collectively "Claims") resulting from damage or destruction to Tenant's Business Personal Property caused directly or indirectly by Landlord and/or Landlord's Associates; provided, however, that nothing herein shall be deemed to release Landlord's independent contractors from any such Claims Tenant may have against Landlord's independent contractors.

14.4.4 Landlord's Release. Notwithstanding anything to the contrary in this Lease (but subject to S 14.5 below), Tenant shall not be responsible or liable to Landlord for any damages or destruction to Landlord's Property caused by Tenant's employees, agents, visitors, invitees, guests, or independent contractors (collectively "Tenant's Associates"), and Landlord hereby releases Tenant from any Claims resulting from damage or destruction to Landlord's Property caused directly or indirectly by Tenant and/or Tenant's Associates; provided, however, that nothing herein shall be deemed to release Tenant's independent contractors from any such Claims Landlord may have against Tenant's independent contractors.

14.4.5 Damage to Business and Loss of Rents. In light of Landlord's agreement to carry continuation of rent insurance pursuant to S 14.3 above and Tenant's agreement to carry business interruption insurance (extra expense insurance) in accordance with S 14.1.5 above, in the event that Landlord's Property is damaged or destroyed because of any act or conduct, negligent or otherwise, by Tenant and/or by Tenant's Associates, Landlord shall have no rights against Tenant by virtue of such damage or destruction, and Landlord hereby releases Tenant from all Claims, including claims for loss of rent, by Landlord directly or indirectly resulting from the damage or destruction of Landlord's Property by conduct by Tenant and/or by Tenant's Associates. Likewise, in the event that Tenant's Business

Personal Property is damaged or destroyed because of any act or conduct, negligent or otherwise, by Landlord and/or by Landlord's Associates, Tenant shall have no rights against Landlord by virtue of such damage or destruction, and Tenant hereby releases Landlord from all Claims by Tenant directly or indirectly resulting from the damage or destruction to Tenant's Business Personal Property by the conduct of Landlord and/or Landlord's Associates, including Claims for loss of business or loss of profits. Notwithstanding the foregoing, nothing herein shall be deemed to release Tenant's or Landlord's independent contractors from any liability to Tenant and/ or Landlord.

14.4.6 Injury and Death to Individuals. Landlord and Tenant understand that waivers of subrogation do not apply to injury to and death of individuals. Landlord and Tenant shall each carry insurance, as provided by this Article 14, in connection with injury and death to individuals. Landlord hereby agrees to indemnify and hold Tenant harmless from any Claims which Tenant may otherwise have with respect to injury or death to individuals occurring within the Property but outside the Premises, except to the extent that such injury or death is caused by Tenant and/or Tenant's Associates, through negligence or otherwise, and is not covered by the insurance Landlord is required to carry under this Lease. Likewise, Tenant agrees to indemnify, defend, protect, and hold Landlord harmless from any Claims for injury or death to persons occurring within the Premises or caused, directly or indirectly, by Tenant or Tenant's Associates outside the Premises, except to the extent such injuries or death are caused by Landlord and/or Landlord's Associates, through negligence or otherwise, and are not covered by the insurance Tenant is required to carry under this Lease.

14.4.7 Abatement of Rent. Except as may be expressly provided elsewhere in this Lease, Tenant shall not be entitled to Rent abatement and shall not otherwise have, and hereby releases Landlord from, any Claims resulting from Tenant's inability to utilize all or any part of the Premises, except to the extent that Tenant is unable to use all or any part of the Premises and does not use all or any part of the Premises as a result of Landlord's intentional decision to refuse to provide access to the Building and/or the Premises and/or to provide services and/or utilities to Tenant as required to beprovided by Landlord to Tenant pursuant to this Lease, where such refusal is not caused by a Force Majeure occurrence.

14.4.8 Availability of Waiver of Subrogation. If an insurance policy cannot be obtained with a waiver of subrogation or is obtainable only by the payment of an additional premium charge above that charged by insurance companies issuing policies without waiver of subrogation, the party undertaking to obtain the insurance shall notify the other party of this fact. The other party shall have a period of ten (10) days after receiving the notice either to place the insurance with a company that is reasonably satisfactory to the other party and that will carry the insurance with a waiver of subrogation at no additional cost or to agree to pay the additional premium if such a policy is obtainable at additional cost. If the insurance cannot be obtained or the party in whose favor a waiver of subrogation is desired refuses to pay the additional premium charged, the other party is relieved of the obligation to obtain a waiver of subrogation with respect to the particular insurance involved.

14.5 OTHER CASES OF DAMAGE OR INJURY. In all cases not covered by the foregoing provisions of this Article 14, Tenant hereby assumes all risk of damage to property or injury to persons in, upon, or about the Premises from any cause other than the active negligence or intentional misconduct of, or violation of this Lease by, Landlord and its agents or employees. Without limiting the generality of the foregoing, Landlord shall not be liable for injury or damage which may be sustained by the person, goods, wares, merchandise, or property of Tenant or Tenant's Associates or any other person in or about the Premises caused by or resulting from fire, steam, electricity, gas, water or rain, which may leak or flow from or into any part of the Premises, or from the breakage, leakage, obstruction, or other defects of the Systems and Equipment, pipes, sprinklers, wires, INC, appliances, plumbing, heating, air-conditioning, or lighting fixtures of the same, whether the damage or injury results from conditions arising upon the Premises or upon other portions of the Property, the Complex, or from other sources. Landlord shall not be liable for any damages arising from any act or omission of any other tenant or occupant of the Property or

Complex. In all cases not covered by the foregoing provisions of this Article 14, Tenant shall indemnify, defend, protect, and hold Landlord harmless against (a) any and all Claims arising from any death or injury to any person or damage to any property whatsoever occurring in, on, or about the Premises or any part thereof, and (b) any and all Claims occurring in, on or about any of the Common Areas, the Property, or the Complex, when such injury or damage is caused in whole or in part by the act, negligence, fault, or omission of any duty with respect to the same by Tenant or Tenant's Associates. In all cases not covered by the foregoing provisions of this Article 14, Tenant shall further indemnify, defend, protect, and hold Landlord harmless from and against any and all Claims arising from any breach or default in the performance of any obligation on Tenant's part to be performed under this Lease, or arising from any act or negligence of Tenant or Tenant's Associates, and from and against all costs, attorneys' fees, expenses, and liabilities incurred in connection with any such Claim or any action or proceeding brought thereon. In case any action or proceeding be brought against Landlord by reason of any such Claim, Tenant, upon notice from Landlord, shall defend the same at Tenant's expense by counsel reasonably satisfactory to Landlord; provided, however, that Tenant shall not be liable in any case for damage to property or death or injury to person(s) occasioned by the active negligence or intentional misconduct of, or violation of this lease by, Landlord or Landlord's Associates, unless covered by insurance Tenant is required to provide.

15 DAMAGE OR DESTRUCTION

15.1 Loss COVERED BY INSURANCE. If at any time prior to the expiration or termination of this Lease the Premises or the Property is wholly or partially damaged or destroyed by any casualty which results in a loss to Landlord that is fully covered by insurance maintained by Landlord or for Landlord's benefit (or required to be maintained by Landlord pursuant to S 14.3 above), which casualty renders the Premises totally or partially inaccessible or unusable by Tenant in the ordinary conduct of Tenant's business, the parties agree that the following provisions shall modify their obligations under this Lease after such damage or destruction.

15.1.1 Repairs Which Can Be Completed Within Six (6) Months. Within thirty (30) days after Tenant's written notice to Landlord of such damage or destruction, Landlord shall provide Tenant with notice of its determination of whether the damage or destruction can be repaired within six (6) months after the commencement of the work of repairing such damage or destruction without the payment of overtime or other premiums. If all repairs to Premises or Property can, in Landlord's judgement, be completed within six (6) months following the date of the commencement of the work of repairing such damage or destruction without the payment of overtime or other premiums, Landlord shall, at Landlord's expense, repair the same; and this Lease shall remain in full force and effect, except that a proportionate reduction of the Base Rent shall be allowed Tenant to the extent that the Premises shall be rendered inaccessible or unusable by Tenant and are not used by Tenant during the period of time that such portion is unusable or inaccessible and not used by Tenant.

15.1.2 Repairs Which Cannot Be Completed Within Six (6) Months. If all such repairs to the Property and Premises cannot, in Landlord's judgement, be completed within six (6) months following the commencement of the work of repairing such damage or destruction without the payment of overtime or other premiums, Landlord shall notify Tenant of such determination; and in such an event, either Landlord or Tenant may, at its option, upon written notice to the other party given within sixty (60) days after the occurrence of such damage or destruction, elect to terminate this Lease as of the date of the occurrence of such damage or destruction. In the event that neither Landlord nor Tenant elects to terminate the Lease in accordance with the foregoing provisions, then Landlord shall, at Landlord's expense, repair such damage or destruction; and in such event, this Lease shall continue in full force and effect, except that the Base Rent shall be proportionately reduced as provided in S 15.1.1 above; provided, however, that if any such repair is not commenced by Landlord within ninety (90) days after the occurrence of such damage or destruction or is not substantially completed by Landlord within nine (9) months after the occurrence of such damage or destruction, then in either such event Tenant may, at its option, upon written notice to Landlord, elect to terminate this Lease as of the date

of Landlord's receipt of such notice. Notwithstanding the foregoing, Tenant shall have no right to terminate this Lease in the situation just described if all of the following conditions are met: (x) Landlord shall have informed Tenant in its notice of determination that the repair of such damage or destruction could not be substantially completed by Landlord within nine (9) months after the occurrence of such damage or destruction; (y) Tenant shall not have elected to terminate the Lease by written notice delivered to Landlord within sixty (60) days after the occurrence of such damage or destruction; and (z) Landlord shall have commenced the work of repairing such damage or destruction.

15.2 Loss NOT COVERED BY INSURANCE. If at any time prior to the expiration or earlier termination of this Lease the Premises or the Property is totally or partially damaged or destroyed in connection with a casualty, which loss to Landlord is not fully covered by insurance maintained by Landlord or for Landlord's benefit (or required to be maintained by Landlord pursuant to S 14.3 above); and if such damage renders the Premises inaccessible or unusable to Tenant for their intended purpose in the ordinary course of its business, Landlord may, at its option, upon written notice given to Tenant within sixty (60) days after Tenant's written notice to Landlord of the occurrence of such damage or destruction, either (a) elect to repair or to restore such damage or destruction or (b) elect to terminate this Lease. If Landlord elects to repair or restore such damage or destruction, this Lease shall continue in full force and effect, except that the Base Rent shall be proportionately reduced as provided in S 15.1.1 above. If Landlord does not elect by notice to Tenant to repair such damage, the Lease shall terminate as of the date of Tenant's receipt of Landlord's notice of election to terminate. Notwithstanding the foregoing, if all repairs to the Premises or the Building cannot, in Landlord's reasonable judgement, be completed within six (6) months following the date of the commencement of the work of repairing such damage or destruction without the payment of overtime or other premiums, then either Landlord or Tenant may at the option of either, upon written notice to the other party given within sixty (60) days after the occurrence of such damage or destruction, elect to terminate this Lease as of the date of such notice.

15.3 DESTRUCTION DURING FINAL YEAR. Notwithstanding anything to the contrary contained in SS 15.1 and 15.2, if the Premises or the Building are wholly or partially damaged or destroyed within the final twelve (12) months of the Term of this Lease or, if an applicable renewal option has been exercised, during the last year of any renewal term, in such a way that Tenant shall be prevented from using the Premises for at least thirty (30) consecutive days as a result of such damage or destruction, then either Landlord or Tenant may, at the option of either, by written notice to the other party delivered within ninety (90) days after the occurrence of such damage or destruction, elect to terminate the Lease as of the date of such notice.

15.4 DESTRUCr10N OF TENANT'S PROPERTY. Under no circumstances shall Landlord be required to repair any injury or damage to, or make any repairs to or replacements of, Tenant's Property. However, as part of Operating Expenses, Landlord shall cause to be insured the Improvements in the Premises which do not consist of Tenant's Property and shall cause such Improvements to be repaired and restored at Landlord's sole expense, except that Tenant shall pay any applicable deductible. Landlord shall have no responsibility for any contents placed or kept in or on the Premises or the Property by Tenant or Tenant's employees or invitees or any other person claiming through Tenant.

15.5 EXCLUSIVE REMEDY. Landlord and Tenant agree that their respective rights and obligations in the event of any damage or destruction of the Premises, Property, or Complex shall be governed exclusively by this Lease. Tenant, as a material inducement to Landlord entering into this Lease, irrevocably waives and releases Tenant's rights under California Civil Code SS 1932(2), 1933(4), and 1942, as the same may be modified or replaced hereafter. No damages, compensation, setoff, allowance, or claim shall be payable by Landlord for any inconvenience, interruption, or cessation of Tenant's business or any annoyance arising from any damage to or destruction of all or any portion of the Premises, Property, or Complex.

16 EMINENT DOMAIN

16.1 CONDEMNATION. If the whole or any material part of the Premises or Property shall be taken by power of eminent domain or condemned by any competent authority for any public or quasi-public use or purpose; or if any adjacent property or street shall be so taken, condemned, reconfigured, or vacated by such authority in such manner as to require the use, reconstruction, or remodeling of any part of the Premises or Property; or if Landlord shall grant a deed or other instrument in lieu of such taking by eminent domain or condemnation (collectively "Takings"), Landlord shall have the option to terminate this Lease upon ninety (90) days' notice, provided such notice is given no later than one hundred and eighty (180) days after the date of such Taking. Tenant shall have reciprocal termination rights, on the same terms and conditions and to be exercised in the same manner as the foregoing sentence provides, if the whole or any material part of the Premises is permanently taken, or if access to the Premises is permanently materially impaired.

16.2 RENTAL APPORTIONMENT . All Rent shall be apportioned as of the date of such termination or the date of such Taking, whichever shall first occur. If any part of the Premises shall be taken, and this Lease shall not be so terminated, the Rent shall be proportionately abated.

16.3 AWARDS AND DAMAGES . Landlord shall be entitled to receive the entire award or payment in connection with any Taking, except that Tenant shall have the right to file any separate claim available to Tenant for any taking of Tenant's personal property and fixtures belonging to Tenant and removable by Tenant upon expiration of the Term, and for moving expenses, so long as such claim does not diminish the award available to Landlord and such claim is payable separately to Tenant.

16.4 TEMPORARY CONDEMNATION . If part or all of the Premises are condemned for a limited period of time ("Temporary Condemnation"), this Lease shall remain in effect. The Rent and Tenant's obligations for the part of the Premises taken shall abate during the Temporary Condemnation in proportion to the part of the Premises that Tenant is unable to use in is business operations as a result of the Temporary Condemnation. Landlord shall receive the entire award for any Temporary Condemnation.

17 ASSIGNMENT AND SUBLETTING

17.1 CONSENT REQUIRED FOR TRANSFER. Tenant agrees that it shall not assign, sublet, mortgage, hypothecate, or encumber this Lease, nor permit or allow the Premises or any part thereof to be used or occupied by others, without the prior written consent of Landlord in each instance. The actions described in the foregoing sentence are referred to collectively herein as "Transfers" and individually as a "Transfer." If the Premises or any part thereof be sublet or occupied by anybody other than Tenant, Landlord may, after default by Tenant, collect rent from the subtenant or occupant and apply the net amount collected to the Rent herein reserved; but no Transfer, occupancy, or collection shall be deemed a waiver of the provisions hereof, the acceptance of the subtenant or occupant as tenant, or a release of Tenant from the further performance hereunder by Tenant. The consent by Landlord to a Transfer shall not relieve Tenant from obtaining the Landlord's express written consent to any further Transfer. In no event shall any permitted sublessee assign or encumber its sublease or further sublet all or any portion of its sublet space, or otherwise suffer or permit the sublet space or any part thereof to be used or occupied by others, without Landlord's prior written consent in each instance.

17.1.1 Corporate Transferor. If Tenant is a corporation, the provisions of S 17.1 shall apply to a transfer (by one or more transfers) of a majority of the stock of Tenant as if such transfer of a majority of the stock of Tenant were an assignment of this Lease. Notwithstanding the foregoing, the sale, issuance, or transfer of any stock of Tenant in connection with an equity financing shall not be deemed an assignment of this Lease or require Landlord's consent. Notwithstanding the foregoing, the sale, issuance, or transfer of any stock of Tenant in connection with an equity financing shall not be deemed an assignment of this Lease or require Landlord's consent.

17.2 NOTICE OF INTENT TO TRANSFER. If Tenant shall at any time or times during the Term of this Lease desire to assign this Lease or sublet all or part of the Premises, Tenant shall give notice thereof (the "Transfer Notice") to Landlord, which notice shall set forth all of the following:

(a) the proposed terms of the assignment or subletting, including (i) the effective or commencement date thereof, which shall be not less than thirty (30) nor more than one hundred eighty (180) days after the giving of such notice; (ii) in the case of a proposed assignment, the consideration therefor; and (iii) in the case of a proposed subletting, the rental rate to be paid by the proposed subtenant (including any escalation or Additional Rent payable), the term of the proposed sublease (including any renewal options), any work to be performed or paid for by Tenant, the amount of any security deposit, the cost and extent of any so-called "take-over" obligations to be assumed by Tenant on behalf of such subtenant, the amount of any rent concessions to be granted by Tenant, and any other additional monetary or so-called "business" terms or conditions;

(b) a statement setting forth in reasonable detail the identity of the proposed assignee or subtenant, the nature of its business, and its proposed use of the Premises; and

(c) current financial information with respect to the proposed assignee or subtenant, including its most recent financial report, and any other information which may reasonably be required by Landlord.

17.3 CONDITIONS OF CONSENT. Providing that Tenant is not in default of any of Tenant's obligations under this Lease after notice and the expiration of any applicable grace period, Landlord's consent (which must be in writing and in form reasonably satisfactory to Landlord) to the proposed assignment or sublease shall not be unreasonably withheld or delayed, provided the following conditions are met:

(a) Tenant shall have complied with the provisions of S 17.2 above;

(b) In Landlord's reasonable judgement the proposed assignee or subtenant is engaged in a business which would use the Premises, or the relevant part thereof, in a manner which is in keeping with the then-current standards of the Building, is limited to the use expressly permitted under this Lease, and will not violate any negative covenant or other restriction or agreement as to use contained in any other lease of space in the Complex;

(c) The proposed assignee or subtenant is a reputable entity or person of good character and with reasonably sufficient financial worth considering the responsibility involved (and in no event of less financial standing than Tenant), is not subject to any toxic or hazardous materials cleanup order with respect to any other property, and Landlord has been furnished with reasonable proof thereof;

(d) Neither the proposed assignee or sublessee nor any person which, directly or indirectly, controls, is controlled by, or is under common control with, the proposed assignee or sublessee or any person who controls the proposed assignee or sublessee, is then an occupant of any part of the Complex, provided Landlord then has suitable space in the Complex available for leasing. For purposes of this Lease control shall be deemed to mean ownership of more than fifty percent (50%) of all the voting stock of a corporation or more than fifty percent (50%) of all the legal and equitable interest in any other business entity;

The proposed assignee or sublessee is not a person or entity with whom Landlord is then negotiating to lease space in the Building;

(f) The form of the proposed lease shall be in form reasonably satisfactory to Landlord and shall comply with the applicable provisions of this Article 17;

Tenant shall reimburse Landlord on demand for any reasonable costs that may be incurred or paid by Landlord to third persons in connection with said assignment or sublease, including costs of making investigations as to the acceptability of the proposed assignee or subtenant and legal costs incurred in connection with the granting of any requested consent; and

(h) The sublease shall not allow the use of the Premises or any part thereof for (i) the sale of food for on or off-premises consumption or (ii) use by a foreign or domestic governmental agency.

Whether or not Landlord shall grant consent, Tenant shall pay $500.00 towards Landlord's review and processing expenses in connection with any Transfer request, as well as any reasonable legal fees incurred by Landlord, within thirty (30) days after written request by Landlord. All such fees in the foregoing paragraph shall not exceed $2,000 in the aggregate per incident.

17.4 CONTINUATION OF LEASE TERMS. Each subletting pursuant to this Article 17 shall be subject to all of the covenants, agreements, terms, provisions, and conditions contained in this Lease. Notwithstanding any such subletting to any other subtenant and/or acceptance of Rent by Landlord from any subtenant, Tenant shall remain liable for the payment of the Base Rent and Additional Rent due and to become due hereunder and for the performance of all the covenants, agreements, terms, provisions, and conditions contained in this Lease on the part of Tenant to be performed and all acts and omissions of any licensee or subtenant or anyone claiming under or through any subtenant which shall be in violation of any of the obligations of this Lease; and any such violation shall be deemed to be a violation by Tenant. Tenant further agrees that notwithstanding any such subletting, no other and further subletting of the Premises by Tenant or any person or entity claiming through or under Tenant shall or will be made except upon compliance with and subject to the provisions of this Article 17. If Landlord shall decline to give its consent to any proposed assignment or sublease, Tenant shall indemnify, defend, protect, and hold Landlord harmless against and from any and all Claims resulting from any Claims that may be made against Landlord by the proposed assignee or sublessee or by any brokers or other persons claiming a commission or similar compensation in connection with the proposed assignment or sublease.

17.5 LAPSE OF CONSENT. In the event that Landlord consents to a proposed Transfer described in the Transfer Notice and Tenant fails to execute and deliver the assignment or sublease described in the Transfer Notice to which Landlord consented within one hundred twenty (120) days after the giving of such consent, then Tenant shall again comply with all of the provisions and conditions of S 17.2 above before assigning this Lease or subletting all or part of the Premises.

17.6 TRANSFER DOCUMENTATION. With respect to each and every Transfer authorized by Landlord under the provisions of this Lease, it is further agreed as follows:

(a) no subletting shall be for a term ending later than one day prior to the Expiration Date of this Lease;

(b) no sublease shall be valid, and no subtenant shall take possession of the Premises or any part thereof, until an executed counterpart of such sublease has been delivered to Landlord;

(c) each sublease shall provide that it is subject and subordinate to this Lease and to the matters to which this Lease is or shall be subordinate, and that in the event of termination (whether by voluntary surrender or otherwise), re-entry, or dispossession by Landlord under this Lease, Landlord may, at its option, take over all of the right, title, and interest of Tenant, as sublessor, under such sublease, and such subtenant shall, at Landlord's option, attorn to Landlord pursuant to the then-executory provisions of such sublease, except that Landlord shall not be (i) liable for any previous act or omission of Tenant under such sublease; (ii) subject to any offset, credit, or allowance not expressly provided in such sublease which theretofore accrued to such subtenant against Tenant or (iii) bound by any previous modification of such sublease or by any previous prepayment of more than one month's rentals; and

(d) each assignment or sublease document must provide that the assignee or subtenant expressly assumes all obligations of the Tenant under the Lease as joint and several obligations without any release of Tenant.

17.7 TRANSFER PREMIUM. If Landlord shall give its consent to any assignment of this Lease or to any sublease, Tenant shall in consideration therefor pay to Landlord, as Additional Rent, the following amounts (collectively the "Transfer Premium"):

in the case of an assignment, an amount equal to fifty percent (50%) of all sums and other considerations paid to Tenant by the assignee for or by reason of such assignment, including sums paid for the sale of Tenant's Property, but excluding the following: (i) in the case of a sale of Tenant's Property, the then-current net unamortized or undepreciated cost thereof determined on the basis of Tenant's federal income tax returns; (ii) then-customary brokerage commissions being paid by Landlord for leasing of space in the Building or, if less, the brokerage commission paid by Tenant in connection with the assignment; (iii) reasonable legal fees and disbursements; and (iv) reasonable amounts paid by Tenant for tenant improvements constructed for the assignee; and

(b) in the case of a sublease, fifty percent (50%) of any rents, additional charge, or other consideration paid under the sublease to Tenant by the subtenant which is in excess of the Base Rent and Additional Rent accruing during the term of the sublease in respect of the subleased space (at the rate per square foot payable by Tenant hereunder) pursuant to the terms hereof, including sums paid for the sale or rental of Tenant's Property, but excluding the following: (i) in the case of the sale or lease of Tenant's Property, the then-current net unamortized or undepreciated cost thereof determined on the basis of Tenant's federal income tax returns; (ii) then-customary brokerage commissions being paid by Landlord for leasing of space in the Building or, if less, the brokerage commission paid by Tenant in connection with the sublease; (iii) reasonable legal fees and disbursements; and (iv) reasonable amounts paid by Tenant for tenant improvements constructed for the subtenant.

The sums payable as the Transfer Premium under this S 17.7 shall be paid to Landlord as and when paid by the subtenant or assignee to Tenant.

17.8 ASSUMPTION BY TRANSFEREE. Any Transfer, whether made with Landlord's consent pursuant to S 17.1 or without Landlord's consent pursuant to S 17.1.1, shall be made only if, and shall not be effective until, the assignee or subtenant shall execute, acknowledge, and deliver to Landlord an agreement in form and substance satisfactory to Landlord under which the assignee or transferee shall assume the obligations of this Lease on the part of Tenant to be performed or observed, from and after the date of Transfer, and whereby the assignee or transferee shall agree that the provisions in S 17.1 shall, notwithstanding such Transfer, continue to be binding upon it in respect of all future Transfers. The original named Tenant covenants that, notwithstanding any Transfer, whether or not in violation of the provisions of this Lease, and notwithstanding the acceptance of Base Rent and/or Additional Rent by Landlord from an assignee, transferee, or any other party, the original named Tenant shall remain fully liable for the payment of the Base Rent and Additional Rent and for the other obligations of this Lease on the part of Tenant to be performed or observed.

17.9 NO WAIVER OR DISCHARGE. The joint and several liability of Tenant and any immediate or remote successor in interest of Tenant and the due performance of the obligations of this Lease on Tenant's part to be performed or observed shall not be discharged, released, or impaired in any respect by any agreement or stipulation made by Landlord extending the time of, or modifying any of the obligations of, this Lease, or by any waiver or failure of Landlord to enforce any of the obligations of this Lease.

17.10 LISTING OF NAME. The listing of any name other than that of Tenant, whether on the doors of the Premises or the Building directory, or otherwise, shall not operate to vest any right or interest in this Lease or in the Premises, nor shall it be deemed to be the consent of Landlord to any Transfer of this Lease or to any sublease of the Premises or to the use or occupancy of the Premises by others.

17.11 NET PROFITS AGREEMENT. Anything contained in the foregoing provisions of this Article 17 to the confrary notwithstanding, neither Tenant nor any other person or entity having an interest in the possession, use, occupancy, or utilization of the Premises shall enter into any lease, sublease, license, concession, or other agreement for use, occupancy, or utilization of space in the Premises which provides for rental or other payment for such use, occupancy, or utilization based, in whole or in part, on the net income or profits derived by any person from the premises leased, used, occupied, or utilized (other than an amount based on a fixed percentage or percentages of receipts or sales); and any such purported lease, sublease, license, concession, or other agreement shall be absolutely void and ineffective as a conveyance of any right or interest in the possession, use, occupancy, or utilization of any part of the Premises.

17.12 AFFILIATES. Notwithstanding anything to the contrary in this Article 17, Landlord's consent shall not be required in the event Tenant desires to assign this Lease or sublet the Premises or any portion thereof to any corporation or entity which controls, is controlled by, or is under common control with Tenant, or to an entity related to Tenant by merger, consolidation, or reorganization, or a purchaser of substantially all of Tenant's stock or assets, provided and subject to the following conditions:

(a) Tenant shall not be in default of any of the terms, covenants, or conditions on Tenant's part to observe or perform hereunder beyond any applicable notice and cure periods;

(b) such sublet or assignment shall be subject to all of the terms, covenants, and conditions of this Lease;

(c) Tenant shall notify Landlord of such sublet or assignment in accordance with S 17.2 hereof and furnish Landlord with reasonably satisfactory evidence that such sublessee or assignee controls, is controlled by, or is under common control with Tenant; and

(d) in the event of such merger, consolidation, or transfer of substantially all of Tenant's assets, the successor to Tenant has a net worth, computed in accordance with generally-accepted accounting principles, at least equal in all material respects to the net worth of Tenant immediately prior to such merger, consolidation, or transfer; and proof satisfactory to Landlord of such net worth shall have been delivered to Landlord at least ten (10) days prior to the effective date of any such transaction.

As used herein, the terms control and common control shall be deemed to mean the ownership of fifty percent (50%) or more of all of the issued and outstanding voting shares of such corporation, or fifty percent (50%) or more of all the legal and equitable interest in any such business entities. Notwithstanding anything to the contrary herein, a sale, transfer, or issuance of Tenant's capital stock shall not be deemed an assignment, subletting, or any other transfer of this Lease or the Premises. The provisions of SS 17.3, 17.5, and 17.7 shall not apply to any assignment, subletting or transfer described in this S 17.12.

17.13 PERMITTED OCCUPANTS. Landlord hereby agrees that the provisions of this Article 17 shall not apply to the shared occupancy of individual offices in the Premises with Tenant by individuals renting not more than one (1) such office (the "Permitted Occupant"), provided that the space occupied by the Permitted Occupant shall not be separately demised or contain separate entrances, demarcations, or reception areas and the occupancy by the Permitted Occupant shall be upon and subject to all of the terms and conditions of this Lease.

18 SUBORDINATION AND ATTORNMENT

18.1 SUBORDINATION OF LEASE. This Lease and all rights of Tenant hereunder are and shall be subject and subordinate in all respects to (a) all ground leases, overriding leases, and underlying leases of the Building, Property, and/or the Complex now or hereafter existing; (b) all mortgages which may now or hereafter affect the Building, Property, or Complex and any of such leases, whether or not such mortgages shall also cover other lands and/or buildings; (c) each and every advance made or hereafter to be made under such mortgages; and (d) to all renewals, modifications, replacements, and extensions of such leases and such mortgages and spreaders and consolidations of such mortgages. This S 18.1 shall be self-operative, and no further instrument of subordination shall be required. In confirmation of such subordination, Tenant shall promptly execute and deliver any instrument that Landlord, the lessor of any such lease or the holder ("Holder") of any such mortgage or any of their respective successors in interest may reasonably request to evidence such subordination. The leases to which this Lease is, at the time referred to, subject and subordinate pursuant to this Article 18 are hereinafter sometimes referred to as "Superior Leases"; the mortgages to which this Lease is, at the time referred to, subject and subordinate are hereinafter sometimes referred to as "Superior Mortgages"; and the lessor of a superior lease or its successor in interest at the time referred to is sometimes hereinafter referred to as a "Lessor." Notwithstanding the foregoing, Tenant agrees, upon written request from Landlord or any Holder or Lessor, to reorder the relative priority of the Lease with respect to any particular Superior Mortgage or Superior Lease so as to subordinate the lien of any such Superior Mortgage or Superior Lease to the Lease. Tenant agrees to execute any instrument which Landlord or any Holder or Lessor may present in order to effect such prioritization of the Lease, provided that such instrument does not modify any material term of the Lease or increase Tenant's obligations thereunder.

18.2 NOTICE AND CURE RIGHT. In the event of any action or omission of Landlord which would give Tenant the right, immediately or after lapse of a period of time, to cancel or terminate this Lease, or to claim a partial or total eviction, Tenant shall not exercise such right unless and until (i) Tenant shall have given written notice of such act or omission to the Holder of each Superior Mortgage and the Lessor of each Superior Lease whose name and address shall previously have been furnished to Tenant in writing; and (ii) unless such act or omission shall be one which is not capable of being remedied by Landlord or such mortgage Holder or Lessor within a reasonable period of time, a reasonable period for remedying such act or omission shall have elapsed following the giving of such notice and following the time when such Holder

or Lessor shall have become entitled under such Superior Mortgage or Superior Lease, as the case may be, to remedy the same (which reasonable period shall in no event be less than the period to which Landlord would be entitled under this Lease or otherwise, after similar notice, to effect such remedy), provided such Holder or Lessor shall with due diligence give Tenant written notice of intention to remedy such act or omission and shall thereafter diligently and continuously prosecute such cure to completion.

18.3 ATTORNMENT. If the Lessor of a Superior Lease or the Holder of a Superior Mortgage shall succeed to the rights of Landlord under this Lease, whether through possession or foreclosure action or delivery of a new lease or deed, then at the request of such party so succeeding to Landlord's rights or other person having or acquiring title by virtue of such foreclosure or termination (herein sometimes referred to as "Successor Landlord") and upon such Successor Landlord's written agreement to accept Tenant's attornment, Tenant shall attorn to and recognize such Successor Landlord as Tenant's landlord under this Lease and shall promptly execute and deliver any instrument that such Successor Landlord may reasonably request to evidence such attornment. Upon such attornment this Lease shall continue in full force and effect as a direct lease between the Successor Landlord and Tenant upon all of the terms, conditions, and covenants in this Lease, except as follows:

(a) the Successor Landlord shall not be liable for any previous act or omission of Landlord under this Lease;

(b) the Successor Landlord shall not be subject to any offset (unless expressly provided for in this Lease) which shall have theretofore accrued to Tenant against Landlord;

(c) the Successor Landlord shall not be bound by any previous modification of this Lease, unless expressly provided for in this Lease, or by any previous prepayment of more than one month's Base Rent, unless such modification or prepayment shall have been expressly approved in writing by the Lessor of the Superior Lease or the Holder of the Superior Mortgage through or by reason of which the Successor Landlord shall have succeeded to the rights of Landlord under this Lease.

19 FINANCING REQUIREMENTS

19.1 LENDER-REQUESTED MODIFICATIONS. If, in connection with obtaining financing or refinancing for the Property or Complex a prospective lender shall request reasonable modifications to this Lease as a condition to such financing or refinancing, Tenant shall not withhold, delay, or unreasonably condition its consent thereto. It is agreed that, among the modifications which shall be deemed reasonable, are modifications to the subordination and attornment provisions of this Lease, modifications to the notice provisions of this Lease, modifications to the provisions of this Lease which permit the lender to cure any defaults by Landlord, and modifications to the provisions which grant additional time to cure as may be reasonably required by the lender.

19.2 FAILURE TO COMPLY. If Tenant fails or refuses to execute and deliver to Landlord, within fifteen (15) days after written notice to do so, the amendment(s) to this Lease accomplishing such reasonable modification(s), Landlord, at its sole option, shall have the right either (a) to terminate this Lease after the expiration of any applicable notice and cure periods or (b) to execute the amendment for and on behalf of Tenant as its attorney-in-fact. Tenant hereby irrevocably appoints Landlord as its attorney-in-fact solely to execute any documents required to carry out the intent of S 19.1 above on behalf of Tenant.

20 DEFAULT

20.1 TENANT'S DEFAULT. Tenant's failure to perform any of its obligations under this Lease when due and in the manner required shall constitute a material breach and default ("Event of Default") of this Lease by Tenant, subject to any cure period(s) permitted or available under applicable laws or statutes. In addition, the following shall also be deemed Events of Default hereunder:

(d) Tenant's abandonment of the Premises;

any material misrepresentation or omission herein or in any financial statements or other materials provided by Tenant or any Guarantor in connection with negotiating or entering this Lease or in connection with any Transfer under Article 17;

(f) cancellation of any guaranty of this Lease by any Guarantor;

failure by Tenant to cure within any applicable times permitted thereunder any default under any other lease for space in the Complex or any other buildings owned or managed by Landlord or its affiliates now or hereafter entered by Tenant; and any Default hereunder not cured within the times permitted for cure herein shall, at Landlord's election, constitute a default under any other such lease or leases;

(h) The levy of a writ of attachment or execution on this Lease or on any of Tenant's property;

(i) Tenant's or any Guarantor's general assignment for the benefit of creditors or arrangement, composition, extension, or adjustment with its creditors;

(j) Tenant's or any Guarantor's filing of a voluntary petition for relief, or the filing of a petition against Tenant or any Guarantor in a proceeding under the Federal Bankruptcy laws or other insolvency laws which is not withdrawn or dismissed within forty-five (45) days thereafter; or, under the provisions of any law providing for reorganization or winding up of corporations, the assumption by any court of competent jurisdiction of jurisdiction, custody, or control of Tenant or any substantial part of its property, or of any Guarantor, where such jurisdiction, custody, or control remains in force unrelinquished, unstayed, or unterminated for a period of forty five (45) days;

(k) In any proceeding or action in which Tenant is a party, the appointment of a trustee, receiver, agent, or custodian to take charge of the Premises or Tenant's Property for the purpose of enforcing a lien against the Premises or Tenant's Property; or

(1) If Tenant or any Guarantor is a partnership or consists of more than one (1) person or entity, the involvement of any partner of the partnership or other person or entity in any of the acts or events described in subsections (i) through (l) above.

Notwithstanding anything to the contrary herein, an Event of Default shall not be deemed to have occurred if Tenant fails to perform any covenant of this Lease other than its obligation timely to pay the Rent, unless such failure continues after Landlord's delivery of written notice for the shortest period reasonably necessary to effect the cure or such longer time as may reasonably be required to cure the default, provided in the latter case that Tenant immediately begins to cure such nonmonetary default and thereafter diligently and continuously prosecutes such cure to completion. In addition, the accrual of a monetary Event of Default shall be subject to the limitation stated in S 1.5.2 above.

20.2 LANDLORD'S REMEDIES. Upon the occurrence of an Event of Default hereunder, Landlord shall have the right, in addition to any other rights or remedies Landlord may have under Laws, at Landlord's option, without further notice or demand of any kind, to elect to do one of the following alternatives:

(i) Terminate this Lease and Tenant's right to possession of the Premises, re-enter the Premises, and take possession thereof; and Tenant shall have no further claim to the

Premises or under this Lease; or

(ii) Continue this Lease in effect and collect any unpaid Rent or other charges which have theretofore accrued or which thereafter become due and payable. It is intended hereunder that Landlord have the remedy described in California Civil Code S 1951.4, which provides that a landlord may continue a lease in effect after a tenant's breach and abandonment and recover rent as it becomes due, if tenant has the right to sublease or assign, subject only to reasonable limitations.

In the event of any re-entry or retaking of possession by Landlord, Landlord shall have the right, but not the obligation, to remove all or any part of Tenant's Property from the Premises and to place such property in storage at a public warehouse at the expense and risk of Tenant.

20.2.1 No Waiver of Default. The waiver by Landlord of any Event of Default or of any other breach of any term, covenant, or condition of this Lease shall not be deemed a waiver of such term, covenant, or condition or of any subsequent breach of the same or any other term, covenant, or condition. Acceptance of Rent by Landlord subsequent to any Event of Default or breach hereof shall not be deemed a waiver of any preceding Event of Default or breach other than the failure to pay the particular Rent so accepted, regardless of Landlord's knowledge of any breach at the time of such acceptance of Rent. Landlord shall not be deemed to have waived any term, covenant, or condition of this Lease, unless Landlord gives Tenant written notice of such waiver. Tenant should not rely upon Landlord's failure or delay in enforcing any right or remedy hereunder.

20.2.2 Landlord's Right to Cure. If Tenant defaults in the performance of any of its obligations under this Lease, Landlord may (but shall not be obligated to), without waiving such default, perform the same for the account and at the expense of Tenant. Tenant shall pay Landlord all costs of such performance promptly upon receipt of a bill therefor.

20.3 DAMAGES. Should Landlord elect to terminate this Lease under the provisions of S 20.2 (i) above, Landlord may recover as damages from Tenant the following:

(a) *Past Rent*: The worth at the time of the award of any unpaid Rent which had been earned at the time of termination; plus

(b) *Rent Prior to Award*: The worth at the time of the award of the amount by which the unpaid Rent which would have been earned after termination until the time of award exceeds the amount of such rental loss that Tenant proves could have been reasonably avoided; plus

(c) *Rent After Award*: The worth at the time of the award of the amount by which the unpaid Rent for the balance of the Term after the time of award exceeds the amount of the rental loss that Tenant proves could have been reasonably avoided; plus

(d) *Proximately Caused Damages*: Any other amount necessary to compensate Landlord for all detriment proximately caused by Tenant's failure to perform its obligations under this Lease or which in the ordinary course of things would be likely to result therefrom, including, but not limited to, any costs or expenses (including attorneys' fees), incurred by Landlord in (i) retaking possession of the Premises; (ii) maintaining the Premises after Tenant's default, (iii) preparing the Premises for reletting to a new tenant, including any repairs or alterations; and (iv) reletting the Premises, including brokers' commissions.

"The worth at the time of the award" as used in subsections (a) and (b) above is to be computed by allowing interest at the rate of ten percent (10%) per annum or, if different, the legal rate then applicable in California. "The worth at the time of the award" as used in subsection (c) above is to be computed by discounting the amount at the discount rate of the Federal Reserve Bank situated nearest to the Premises at the time of the award plus one percent (1 %).

20.4 LANDLORD'S DEFAULT. If Landlord fails to perform any covenant, condition, or agreement contained in this Lease within thirty (30) days after receipt of written notice from Tenant specifying a default and the relevant Lease provision, or if Landlord fails within that thirty-day period after notice to commence to cure any such default which cannot reasonably be cured within thirty (30) days, then, subject to S 21.1 below, Landlord shall be liable to Tenant for any damages sustained by Tenant as a result of Landlord's breach. Tenant shall not have the right to terminate this Lease or to withhold, reduce, or offset any amount against any payments of Rent or any other charges due and payable under this Lease, except to the extent that a specific Lease provision permits such termination or withholding, reduction, or offset of Rent.

20.5 HOLDER'S RIGHT TO CURE. Tenant shall give any Holder a copy, by registered mail, of any notice of default served upon Landlord, provided that Tenant previously has been notified in writing of the address of such Holder. If Landlord fails to cure such default within the time provided in this Lease, any such Holder shall have an additional forty-five (45) days within which to cure such default by Landlord or, if such default cannot reasonably be cured within that time, such additional time as may be necessary, provided that within such forty-five (45) day period the Holder has commenced and is pursuing the remedies necessary to cure such default (including commencement of foreclosure proceedings, if necessary to effect such cure), in which event this Lease shall not be terminated while such remedies are being so pursued.

20.6 SURVIVAL OF REMEDIES . The remedies permitted under this Article 20, the parties' indemnities under SS 14.4.3, 14.4.4, and14.4.5, and S 29.5 below shall survive the termination of this Lease.

21 LIMITATIONS 0N LANDLORD'S LIABILITY

21.1 PERSONAL LIABILITY. The liability of Landlord to Tenant for any default by Landlord under this Lease or arising in connection herewith or with Landlord's operation, management, leasing, repair, renovation, alteration, or any other matter relating to the Property or the Premises shall be limited to the value of the interest of Landlord in the Property (and the rental proceeds thereof). Under no circumstances shall Landlord ever be liable for consequential or punitive damages, including damages for lost profits or for business interruption. Tenant agrees to look solely to Landlord's interest in the Property (and the rental proceeds thereof) for the recovery of any judgement against Landlord, and Landlord shall not be personally liable for any such judgement or deficiency after execution thereon. The limitations of liability contained in this Article 21 shall apply equally and inure to the benefit of Landlord's present and future partners, beneficiaries, officers, directors, trustees, shareholders, agents, and employees, and their respective partners, heirs, successors, and assigns. Under no circumstances shall any present or future general or limited partner of Landlord (if Landlord is a partnership), or trustee or beneficiary (if Landlord or any partner of Landlord is a trust) or corporate officer, director, or shareholder (if Landlord or any partner of Landlord is a corporation or company) or member (if Landlord is a limited liability company) have any liability for the performance of Landlord's obligations under this Lease.

21.2 LIABILITY UPON TRANSFER. The term Landlord as used in this Lease, so far as covenants or obligations on the part of the Landlord are concerned, shall be limited to mean and include only the owner or owners, at the time in question, of the fee title to, or a lessee's interest in a ground lease or master lease of the Property. In the event of any transfer, assignment, or other conveyance or transfer of any such title or interest, Landlord herein named (and in case of subsequent transfers or conveyances, the current grantor) shall be automatically freed and relieved from and after the date of such transfer, assignment, or conveyance of all liability with respect to the performance of any covenants or obligations on the part of Landlord contained in this Lease thereafter to be performed; and, without further agreement, the transferee of such title or interest shall be deemed to have assumed and agreed to observe and perform any and all obligations of Landlord hereunder, during its ownership of the Premises. Landlord may transfer its interest in the Premises without the consent of Tenant, and such transfer or subsequent transfer shall not be deemed a violation on Landlord's part of any of the terms and conditions of this Lease.

22 ESTOPPEL CERTIFICATES

22.1 REQUEST AND DELIVERY. Within ten (10) days following any written request Landlord may make from time to time, Tenant without any charge therefor, shall execute, acknowledge, and deliver a statement certifying the following: (a) the Commencement Date of this Lease; (b) the fact that this Lease is unmodified and in full force and effect or, if there have been modifications hereto, that this Lease is in full force and effect, as modified, and stating the date and nature of such modifications; (c) the date to which the Rent and other sums payable under this Lease have been paid; (d) the fact that, to Tenant's current, actual knowledge, there are no current defaults under this Lease by either Landlord or Tenant except as specified in the statement; and (e) such other matters as may be reasonably requested by Landlord. Landlord and Tenant intend that any statement delivered pursuant to this Article 22 may be relied upon by any Holder, Lessor, beneficiary, purchaser, or prospective purchaser of the Building, the Complex, or any interest therein. Tenant's failure to deliver any such statement within the specified ten-day period shall constitute a material default hereunder, and Tenant shall indemnify, defend, protect, and hold Landlord harmless from and against any and all Claims which Landlord may sustain or incur as a result of or in connection with Tenant's failure or delay in delivering such statement.

22.2 ELECTION TO SELL BUILDING. If Landlord elects to sell the Building or to obtain loans secured by a lien on the Building, Tenant, promptly after demand, shall include with the estoppel certificate(s) provided to any prospective purchaser or lender as required under this Article 22 any financial statements of Tenant reasonably required by the purchaser or lender. The financial statements so provided shall be kept confidential as to any parties other than the purchaser or lender.

23 NOTICES

23.1 MANNER OF DELIVERY. Any notice required or permitted under this Lease shall be in writing and shall be delivered in at least one of the following ways: (a) personally or by private hand-delivery messenger service; (b) by depositing the same in the United States mail, postage prepaid, registered or certified, return receipt requested; (c) by depositing such notice, postage prepaid, with Federal Express or another nationally-recognized private overnight delivery service; or (d) by any other means permitted or required by applicable California law or statutes relevant in the context in which such notice is given. Each such notice shall be addressed to the intended recipient at such party's address set forth as follows, or at such other address as such party has theretofore specified by written notice delivered in accordance with this S 23.1:

if to Landlord:

KASHIWA FUDOSAN AMERICA, INC.
c/o RiverRock Real Estate Group, Inc.
Attn: Property Manager
400 Oyster Point Boulevard, Suite 117

South San Francisco, CA 94080

copy to:

Metro Properties, LLC, Agent
Attn: Oyster Point Asset Manager
11150 West Olympic Boulevard, Suite 1090
Los Angeles, CA 90064

if to Tenant before the Commencement Date:

MYOKARDIA, INC.
Attn: General Counsel
333 Allerton Avenue
South San Francisco, CA 94080

and, if the Tenant after the Commencement Date:

MYOKARDIA, INC.
Attn: General Manager
395 Oyster Point Boulevard, Suite 306
South San Francisco, CA 94080

23.2 REQUIRED CONTENTS. Every notice (other than the giving or withholding of consent or approval under the provisions of the Lease) given to a party shall state the section of the Lease pursuant to which the notice is given; the period of time within which the recipient of the notice must respond (or, if no response is required, a statement to that effect); and if applicable, that the failure to object to the notice within the stated time period will be deemed to be the equivalent of the recipient's approval, consent to, or satisfaction with the subject matter of the notice.

23.3 PRESUMPTION OF RECEIPT. Any notice delivered personally or by private messenger service shall be deemed delivered on the next day following the deposit of such notice at the recipient's address. Any notice delivered by Federal Express or another nationally-recognized private overnight delivery service shall be deemed delivered on the earlier of (y) the second day following deposit thereof with the carrier or (z) the delivery date shown on the carrier's record of delivery. Any notice delivered by mail in the manner specified in S 23.1 shall be deemed delivered on the earlier of (a) the third day following deposit thereof in the United States Mail or (b) the delivery date shown on the return receipt prepared in connection therewith. Refusal by Tenant or Landlord to accept either certified or registered mail shall constitute a waiver of such notice by the respective party.

24 BROKERS

24.1 TENANT'S REPRESENTATION. Tenant represents and warrants to Landlord that Tenant has dealt with no broker in connection with this Lease other than CBRE, Inc. and Cushman & Wakefield of California, Inc. Tenant shall be responsible for all foreseeable consequences of damages (including attorneys' fees and costs) resulting from any claims that may be asserted against Landlord by any other broker, finder, or other person with whom Tenant has or purportedly has dealt in connection with this Lease, and Tenant agrees to indemnify, defend, protect, and hold Landlord harmless in connection with any such Claims which may be asserted.

25 RIGHTS RESERVED TO LANDLORD

25.1 ACCESS TO PROPERTY. All of the Property except the inside surfaces of all walls, windows, and doors bounding the Premises (including exterior Building walls, core corridor walls and doors, and any core corridor entrance) and any space in or adjacent to the Premises used for shafts, stacks, pipes, conduits, fan rooms, ducts, electric, or other utilities, sinks or other Building facilities, and the use thereof, as well as access thereto through the Premises for the purpose of operation, maintenance, decoration, and repair, are reserved to Landlord. Tenant shall permit Landlord to install, use, replace, and maintain pipes, ducts, and conduits within the demising walls, bearing columns, and ceilings of the Premises.

25.2 CONTROL OF PROPERTY. Except to the extent expressly limited herein, Landlord reserves full rights to control the Property (which rights may be exercised without subjecting Landlord to claims for constructive eviction, abatement of Rent, damages, or other claims of any kind), including more particularly the following rights:

(a) **Name, Address, Access**. To change the name or street address of the Property; install and maintain signs on the exterior and interior of the Property; retain at all times, and use in appropriate instances, keys to all doors within and into the Premises; grant to any Person the right to conduct any business or render any service at the Property, whether or not it is the same or similar to the use permitted Tenant by this Lease; and have access for Landlord and other tenants of the Property to any mail chutes located on the Premises according to the rules of the United States Postal Service.

(b) **Entry into Premises**. To enter the Premises at reasonable hours for reasonable purposes, including inspection and supplying cleaning service or other services to be provided Tenant hereunder, to show the Premises to current and prospective lenders, ground lessors, insurers, and prospective purchasers, tenants and brokers, at reasonable hours; and if Tenant shall abandon the Premises at any time, or shall vacate the same during the last three (3) months of the Term, to decorate, remodel, repair, or alter the Premises.

(c) **Safety Measures**. To limit or prevent access to the Property, shut down elevator service, activate elevator emergency controls, or otherwise take such action or preventative measures deemed necessary by Landlord for the safety of tenants or other occupants of the Property or the protection of the Property and other property located thereon or therein, in case of fire, invasion, insurrection, riot, civil disorder, public excitement or other dangerous condition, or threat thereof.

(d) **Improvements**. To decorate and to make alterations, additions and improvements, structural or otherwise, in or to the Property or any part thereof, and any adjacent building, structure, parking facility, land, street or alley (including changes and reductions in corridors, lobbies, parking facilities and other public areas and the installation of kiosks, planters, sculptures, displays, escalators, mezzanines, and other structures, facilities, amenities and features therein, and changes for the purpose of connection with or entrance into or use of the Property in conjunction with any adjoining or adjacent building or buildings, now existing or hereafter constructed). In connection with such matters, or with any other repairs, maintenance, improvements or alterations, in or about the Property, Landlord may erect scaffolding and other structures reasonably required, and during such operations may enter upon the Premises and take into and upon or through the Premises, all materials required to make such repairs, maintenance, alterations or improvements, and may close public entry ways, other public areas, restrooms, stairways or corridors.

25.3 LANDLORD'S RIGHT TO MAINTAIN. Except as expressly otherwise provided in this Lease, Landlord shall have no liability to Tenant by reason of any inconvenience, annoyance, interruption, or injury to business arising from Landlord's making any repairs or changes which Landlord is required or permitted to make by this Lease, by any other lease or agreement affecting the Property, or by Law, in or to any portion of the Property, Complex, or the Premises, including the Systems and Equipment and appurtenances of the Property or the Premises, provided that Landlord shall use due diligence with respect thereto and shall perform such work, except in case of emergency, at times reasonably convenient to Tenant and otherwise in such manner as will not materially diminish Tenant's beneficial enjoyment of the Premises for their intended use.

25.4 REASONABLE NOTICE. In connection with entering the Premises to exercise any of the foregoing rights, Landlord shall: (a) provide reasonable advance written or oral notice to Tenant's on-site manager or other appropriate person (except in emergencies, or for routine cleaning or other routine matters), and (b) take reasonable steps to avoid any unreasonable interference with Tenant's business.

26 HOLDING OVER

26.1 HOLDOVER. Unless Landlord expressly agrees otherwise in writing, Tenant shall pay Landlord one hundred fifty percent (150%) of the amount of Rent then applicable prorated on per diem basis for each day Tenant shall retain possession of the Premises or any part thereof after expiration of the Term or earlier termination of this Lease, together with all damages sustained by Landlord on account thereof. In the case of any such holdover, the Lease shall be converted to a month-to-month tenancy which either party may terminate upon written notice of not less than thirty (30) days to the other. Tenant shall remain bound to comply with all provisions of this Lease until Tenant vacates the Premises and shall be subject to the provisions of S 11.1 above.

26.2 PERMISSIVE MONTH-TO-MONTH TENANCY. Notwithstanding the foregoing to the contrary, at any time before or after expiration or earlier termination of the Term of the Lease, Landlord may serve notice advising Tenant of the amount of Rent and other terms required, should Tenant desire to enter a monthto-month tenancy. If Tenant shall hold over more than one full calendar month after such notice, Tenant shall thereafter be deemed a month-to-month tenant, on the terms and provisions of this Lease then in effect, as modified by Landlord's notice, except that Tenant shall not be entitled to any renewal or expansion rights contained in this Lease or any amendments hereto.

27 PARKING

27.1 AVAILABLE PARKING . Subject to the terms and conditions contained in the balance of this Article 28, Landlord agrees to make available to Tenant during the Term of this Lease and any renewal term up to a maximum of seventy-seven (77) parking spaces on a non-exclusive basis in the area(s) designated by Landlord for parking in the Building's parking lots and/or facility (the "Parking Facility"). Said parking spaces shall be in locations designated by Landlord, and parking shall be on a first-come-first-served, unassigned, nonreserved basis. Landlord reserves the right to designate different locations or different parking areas for Tenant's use without any liability to Tenant and Tenant agrees that any change shall not give rise to any claims or offset against Landlord hereunder. Tenant shall abide by any and all parking regulations and rules established from time to time by Landlord or Landlord's parking operator. Landlord reserves the right in its sole and absolute discretion to restrict or prohibit the use of the Parking Facility for any vehicles other than passenger automobiles, such as full-sized vans or trucks. Tenant shall not permit any vehicles belonging to Tenant or Tenant's employees, agents, customers, contractors, or invitees to be loaded, unloaded, or parked in areas other than those designated by Landlord for such activities and shall not permit any such vehicles to be parked overnight in the Parking Facility; provided, Tenant may apply for an Overnight Parking Permit from Landlord's Property Manager for limited periods for good cause relating to Tenant's business, subject to such rules and regulations governing such overnight parking as Landlord's Property Manager may establish from time to time. A failure to comply with the foregoing provisions shall afford Landlord the right without notice to remove any vehicles involved and to charge the cost to Tenant, which cost shall be immediately due and payable upon demand by Landlord.

27.2 USE AT TENANT'S OWN RISK. Landlord shall have no obligation to monitor the use of the Parking Facility. Tenant's and its employees' use of the Parking Facility shall be at the sole risk of Tenant and its employees. Unless caused by the willful harmful act of Landlord, Landlord shall have no responsibility or liability for any injury or damage to any person or property by or as a result of the use of the Parking Facility (or substitute parking) by Tenant and its employees, whether by theft, collision, criminal activity, or otherwise, and Tenant hereby assumes, for itself and its employees, all risks associated with any such occurrences in or about the Parking Facility.

28 MISCELLANEOUS PROVISIONS.

28.1 GENERAL DEFINITIONS. The definitions which follow shall apply generally to the provisions of this Lease.

(a) The term ***business days*** means Monday through Friday inclusive, excluding Holidays as defined in S 8.1.1 above. Throughout this Lease, wherever days is used the term shall refer to calendar days. Wherever the term business days is used the term shall refer to business days as defined hereunder.

(b) The term ***mortgage*** shall include any mortgage or deed of frust, and the term mortgagee shall include a frustee.

(c) The terms ***include, including***, and ***such as*** shall each be construed as if followed by the phrase "without limitation." The rule of eiusdem generis shall not be applicable to limit a general statement following or referrable to an enumeration of specific matters to matters similar to the matters specifically mentioned.

(d) The term ***obligations under this Lease*** and words of like import shall mean the covenants to pay Rent and Additional Rent under this Lease and all of the other covenants and conditions contained in this Lease. Any provision in this Lease that one party or the other or both shall do or not do or shall cause or permit or not cause or permit a particular act, condition, or circumstance shall be deemed to mean that such party so covenants or both parties so covenant, as the case may be.

(e) The term ***Tenant's obligations hereunder*** and words of like import and the term ***Landlord's obligations hereunder*** and words of like import shall mean the obligations under this Lease which are to be performed or observed by Tenant, or by Landlord, as the case may be. Reference to ***performance*** of either party's obligations under this Lease shall be construed as "performance and observance."

(f) Reference to Tenant being or not being **in default hereunder** or words like import shall mean that Tenant is in default in the performance of one or more of Tenant's obligations hereunder, or that Tenant is not in default in the performance of any of Tenant's obligations hereunder, or that a condition of the character described in S 20.1 above has occurred and continues or has not occurred or does not continue, as the case may be.

(g) References to Landlord as having ***no liability to Tenant*** or being ***without liability to Tenant*** shall mean that Tenant is not entitled to terminate this Lease or to claim actual or constructive eviction, partial or total, or to receive any credit, allowance, setoff, abatement, or diminution of Rent, or to be relieved in any manner of any of its other obligations hereunder, or to be compensated for loss or injury suffered or to enforce any other kind of liability whatsoever against Landlord under or with respect to this Lease or with respect to Tenant's use or occupancy of the Premises.

(h) The term ***requirements of insurance bodies*** and words of like import shall mean rules, regulations, orders, and other requirements of the California Board of Fire Underwriters and/or the California Fire Insurance Rating Organization and/ or any other similar body performing the same or similar functions and having jurisdiction or cognizance of the Property and/or the Premises.

(i) The term ***repair*** shall be deemed to include restoration and replacement as may be necessary to achieve and/or maintain good working order and condition.

(j) Reference to ***termination of this Lease*** includes expiration or earlier termination of the Term of this Lease or cancellation of this Lease pursuant to any of the

provisions of this Lease or to Law. Upon a termination of this Lease, the Term and estate granted by this Lease shall end at noon of the date of termination as if such date were the date of expiration of the Term of this Lease, and neither party shall have any further obligation or liability to the other after such termination, except as shall be expressly provided for in this Lease and except for any such obligation as by its nature or under the circumstances can only be, or by the provisions of this Lease may be, performed after such termination; and in any event, unless expressly provided to the contrary in this Lease, any liability for a payment or obligation which shall have accrued to or with respect to any period ending at the time of termination shall survive the termination of this Lease.

(k) The term ***in full force and effect*** when herein used in reference to this Lease as a condition to the existence or exercise of a right on the part of Tenant shall be construed in each instance as including the further condition that at the time in question no default on the part of Tenant exists, and no event has occurred which has continued to exist for such period of time (after the notice, if any, required by this Lease), as would entitle Landlord to terminate this Lease or to dispossess Tenant.

(1) The term ***Tenant*** shall mean Tenant herein named or any assignee, heir, distribute, executor, administrator, legal representative, or other successor in interest (immediate or remote) of Tenant herein named, while such Tenant or such assignee or other successor in interest, as the case may be, is in possession of the Premises as owner of the Tenant's estate and interest granted by this Lease and also, if Tenant is not a single individual or a corporation, all of the persons, firms, and corporations then comprising Tenant; and their liability hereunder shall be joint and several.

28.2 LIGHT AND AIR. No diminution of light, air or view by any structure which may hereafter be erected (whether or not by Landlord) shall entitle Tenant to any reduction of Rent under this Lease, result in any liability of Landlord to Tenant, or in any other way affect this Lease.

28.3 WAIVER OF TERMS. If either Landlord or Tenant waives the performance of any term, covenant, or condition contained in this Lease, such waiver shall not be deemed to be a waiver of the term, covenant, or condition itself or a waiver of any subsequent breach of the same or any other term, covenant, or condition contained herein. Furthermore, the acceptance of Rent by Landlord shall not constitute a waiver of any preceding breach by Tenant of any term, covenant, or condition of this Lease, regardless of Landlord's knowledge of such preceding breach at the time Landlord accepts such Rent. Failure by Landlord to enforce any of the terms, covenants, or conditions of this Lease for any length of time shall not be deemed to waive or to decrease the right of Landlord to insist thereafter upon strict performance by Tenant. Waiver by Landlord of any term, covenant, or condition contained in this Lease may only be made by a written document signed by Landlord.

28.4 FAILURE TO DELIVER STATEMENTS. Landlord's failure during the Term of this Lease to prepare and deliver any of the Statements, estimates, notices, or bills contemplated or required under this Lease, or Landlord's failure to make a demand, shall not in any way cause Landlord to forfeit or surrender its rights to collect any of the foregoing items of Rent which may have become due during the Term of this Lease.

28.5 ATTORNEY'S FEES. In the event that any action or proceeding (including arbitration) is brought to enforce or interpret any term, covenant, or condition of this Lease on the part of Landlord or Tenant, the prevailing party in such action or proceeding (whether after trial or upon appeal) shall be entitled to recover from the party not prevailing its expenses therein, including reasonable attorneys' fees and all allowable costs as fixed by the court.

28.6 CORPORATE REVIEW FEES. Notwithstanding anything to the contrary in this Lease, Tenant agrees to reimburse Landlord for its reasonable costs and/or attorneys' fees incurred in the review of (i) any transaction with respect to which Tenant is required to give notice under S 17.13 of the Lease and/or (ii) any other change of name, registration, corporate status or merger, acquisition, consolidation, transfer, loan, security, or collateral transaction, or other matter related to Tenant's legal or corporate status or the financing of any loan or collateral or security associated with the same requiring Landlord's attention and need to seek legal advice, which shall not exceed $2,000 in the aggregate as to each such instance.

28.7 JURY TRIAL. Tenant and Landlord each hereby waive their respective rights to a trial by jury under applicable Laws in the event of any litigation or dispute between Landlord and Tenant arising out of or in connection with this Lease and the parties' performance thereunder.

28.8 MERGER. Notwithstanding the acquisition (if same should occur) by the same party of the title and interests of both Landlord and Tenant under this Lease, there shall never be a merger of the estates of Landlord and Tenant under this Lease, but instead the separate estates, rights, duties, and obligations of Landlord and Tenant, as existing hereunder, shall remain unextinguished and continue, separately, in full force and effect until this Lease expires or otherwise terminates in accordance with the express provisions herein contained.

28.9 No MERGER ON VOLUNTARY SURRENDER. A voluntary or other surrender of this Lease by Tenant or the mutual cancellation of this Lease shall not work a merger and shall, at the option of Landlord, terminate all or any existing subleases or subtenancies, or may, at the option of Landlord, operate as an assignment to it of any or all such subleases or subtenancies.

28.10 CONSENT. Notwithstanding anything contained in this Lease to the contrary, Tenant shall have no claim and hereby waives the right to any claim against Landlord for money damages by reason of any refusal, withholding, or delaying by Landlord of any consent, approval, statement, or satisfaction; and in such event, Tenant's only remedies therefor shall be an action for specific performance, injunction, or declaratory judgement to enforce any right to such consent, approval, statement, or satisfaction.

28.11 COUNTERPARTS. This Lease may be executed in multiple counterparts, each of which shall be deemed an original and all of which together shall constitute one and the same instrument.

28.12 FINANCIAL STATEMENTS. In order to induce Landlord to enter into this Lease, Tenant agrees that, if its financial statements are not publicly available, it shall promptly furnish Landlord, from time to time (but no more frequently than once per calendar year), upon Landlord's written request, with financial statements reflecting Tenant's current financial condition. Tenant represents and warrants that all financial statements, records, and information furnished by Tenant to Landlord in connection with this Lease are and shall be true, correct, and complete in all respects.

28.13 GENDER AND NUMBER. Words used in neuter gender include the feminine and masculine, where applicable, and words used in the singular or plural shall include the opposite number if appropriate.

28.14 JOINT AND SEVERAL OBLIGATION . If more than one person executes this Lease as Tenant, each of them is jointly and severally liable for the keeping, observing, and performing of all of the terms, covenants, conditions, provisions, and agreements of this Lease to be kept, observed, and performed by Tenant. The term Tenant as used in this Lease shall mean and include each of such signatories jointly and severally. The act of or notice from, or notice or refund to, or the signature of, any one or more of such signatories with respect to the tenancy or this Lease, including any renewal, extension, expiration, termination, or modification of this Lease, shall be binding upon each and all of the persons executing this Lease as Tenant with the same force and effect as if each and all of them had so acted or so given or received such notice or refund or so signed.

28.15 HEADINGS AND SECTION NUMBERS. The headings and titles of the articles and sections of this Lease are used for convenience only and shall have no effect upon the construction or interpretation of this Lease. Wherever a reference is made in this Lease to a particular article or section, such reference shall be deemed to include all subsections following such section reference, unless the contrary is expressly provided in connection with such reference. All references in this Lease to numbered articles, numbered sections, and lettered exhibits are references to articles and sections of this Lease and exhibits annexed to (and thereby made part of) this Lease, as the case may be, unless expressly otherwise designated in the context.

28.16 TIME. Time is of the essence of this Lease and all of its provisions.

28.17 APPLICABLE LAW. This Lease shall in all respects be governed by and interpreted in accordance with the laws of the State of California without reference to its conflicts of law principles. If suit is brought by a party to this Lease, the parties agree that jurisdiction of such action shall be vested exclusively in the state courts of the State of California, County of San Mateo, or in the United States District Court for the Northern District of California, and with its execution and delivery of this Lease Tenant waives any defense it might otherwise have against the jurisdiction of such courts.

28.18 SEVERABILITY. If any provision of this Lease or the application thereof to any person or circumstance shall be invalid or unenforceable to any extent, the remainder of this Lease and the application of such provision to other persons or circumstances shall not be affected thereby and shall be enforced to the greatest extent permitted by law.

28.19 SIGNS. Tenant shall not place or permit to be placed in or upon the Premises where visible from outside the Premises or any part of the Building, any signs, notices, drapes, shutters, blinds or window coatings, or displays of any type without the prior written consent of Landlord. Landlord shall consent to the location at the cost of Tenant of a building standard sign on or near the entrance of the Premises and shall include Tenant in the Building and Complex directories located in the Building. Landlord reserves the right in Landlord's sole discretion to place and locate on the roof and exterior of the Building and Complex and in any area of the Building and the Complex not leased to Tenant, such signs, notices, displays and similar items as Landlord deems appropriate in the proper operation of the Building and the Complex.

28.20 EXECUTION BY LANDLORD. The submission of this document for examination and negotiation does not constitute an offer to lease, or a reservation of, or option for, the Premises. This document becomes effective and binding only upon execution and delivery hereof by Tenant and by Landlord. No act or omission of any employee or agent of Landlord or of Landlord's broker shall alter, change or modify any of the provisions hereof.

28.21 USE OF NAME. Tenant shall not use the name of the Building or Complex for any purpose other than the address of the business to be conducted by Tenant in the Premises. Tenant shall not use any picture of the Building or Complex in its advertising, stationery or in any other manner so as to imply that the entire Building or Complex is leased by Tenant. Landlord expressly reserves the right at any time to change the name or street address of the Building and/or Complex without in any manner being liable to Tenant therefor.

28.22 NONRECORDABILITY OF LEASE. Tenant agrees that in no event shall this Lease or a memorandum hereof be recorded without Landlord's express prior written consent, which consent Landlord may withhold in its sole discretion.

28.23 CONSTRUCTION. All provisions hereof, whether covenants or conditions, shall be deemed to be both covenants and conditions. The definitions contained in this Lease, shall be used to interpret the Lease. All rights and remedies of Landlord and Tenant shall, except as otherwise expressly provided, be cumulative and non-exclusive of any other remedy at law or in equity.

28.24 FORCE MAJEURE DELAYS. This Lease and the obligations of Tenant hereunder shall not be affected or impaired because Landlord is unable to fulfill any of its obligations hereunder or is delayed in doing so, if such inability or delay is caused by reason of force majeure, strike, labor troubles, acts of God, acts of government, unavailability of materials or labor, or any other cause beyond the reasonable control of Landlord (collectively "Force Majeure Delays").

28.25 AUTHORITY. If Tenant is a corporation, Tenant represents and warrants that Tenant is qualified to do business in California and that each individual executing this Lease on behalf of Tenant is duly authorized to execute and deliver this Lease on behalf of Tenant and shall deliver appropriate certification to that effect if requested. If Tenant is a limited liability company, partnership, joint venture, or other unincorporated association, Tenant represents and warrants that each individual executing this Lease on behalf of Tenant is duly authorized to execute and deliver this Lease on behalf of Tenant and that this Lease is binding on Tenant. Furthermore, Tenant agrees that the execution of any written consent hereunder, or any written modification or termination of this Lease, by any general partner or member of Tenant or any other authorized agent of Tenant, shall be binding on Tenant.

28.26 NONDISCLOSURE. Tenant agrees that it shall not disclose any of the matters set forth in this Lease or disseminate or distribute any information concerning the terms, covenants, or conditions thereof to any person, firm, or entity, other than a prospective assignee or subtenant of the Premises, without first obtaining the express written approval of Landlord; provided, however, that Tenant may disclose the contents of this Lease to any director, officer, or employee of Tenant, to Tenant's lawyers, accountants, or other third party consultants or professionals, to any lenders, investors, or others to whom Tenant provides financial statements, or in response to any legally effective demand for disclosure pursuant to court order or from any other properly constituted legal authority or as otherwise required by law.

28.27 QUIET ENJOYMENT. So long as Tenant is not in default under this Lease beyond any applicable notice and cure periods, Tenant shall have quiet enjoyment of the Premises for the Term, subject to all the terms and conditions of this Lease and all liens and encumbrances prior to this Lease.

ACCESS INSPECTION DISCLOSURE. Pursuant to California Civil Code S 1938, Landlord hereby notifies Tenant that, as of the date of this Lease, the Premises have not undergone inspection by a "Certified Access Specialist" to determine whether the Premises meet all applicable construction-related accessibility standards under California Civil Code S 55.53, and the Premises have not been determined to meet all applicable construction-related accessibility standards pursuant to Civil Code S 55.53. In addition, Civil Code S 1938(e) requires that the following language be inserted into this Lease:

> *A Certified Access Specialist (CASp) can inspect the subject premises and determine whether the subject premises comply with all of the applicable construction-related accessibility standards under state law. Although state law does not require a CASP inspection of the subject premises, the commercial property owner or lessor may not prohibit the lessee or tenant from obtaining a CASP inspection of the subject premises for the occupancy or potential occupancy of the lessee or tenant, if requested by the lessee or tenant. The parties shall mutually agree on the arrangements for the time and manner of the CASP inspection, the payment of the fee for the CASP inspection, and the cost of making any repairs necessary to correct violations of construction-related accessibility standards within the premises.*

Landlord is acting in compliance with applicable Laws by inserting the foregoing paragraph into this Lease, but Landlord thereby expresses no opinion as to the meaning or applicability of S 1938 and offers no legal advice as to its meaning or applicability. Tenant is informed and agrees that it will seek its own legal counsel if it has questions regarding the meaning of S 1938 or its applicability to this Lease.

28.28 LANDLORD'S REPRESENTATIVE. Tenant acknowledges and agrees that, in executing this Lease, TAK Development, Inc., a California corporation, is acting solely in its capacity as Landlord's authorized attorney-in-fact. TAK Development, Inc. is not acquiring or assuming any legal liability or obligation to any other party executing this Lease, and any claim or demand of any such other party arising under or with respect to this Lease shall be made and enforced solely against Landlord.

28.29 EXHIBITS AND ATTACHMENTS . All exhibits and attachments referred to in the body of this Lease are deemed attached hereto and incorporated herein by reference. The parties have attached the following exhibits to the Lease prior to execution:

Exhibit A	**Site Plan**
Exhibit B	**Floor Plan of Premises**
Exhibit C	**Rules and Regulations**
Exhibit D	**Athletic Facility Use Agreement**
Exhibit E	**Commencement Date Agreement**

28.30 ENTIRE AGREEMENT. This Lease, together with its exhibits, contains all the agreements of the parties hereto and supersedes any previous negotiations. There have been no representations made by the Landlord or understandings made between the parties other than those set forth in this Lease and its exhibits. This Lease may not be modified except by a written instrument duly executed by the parties hereto.

In witness Whereof, the parties have executed this Lease as of the date first above written.

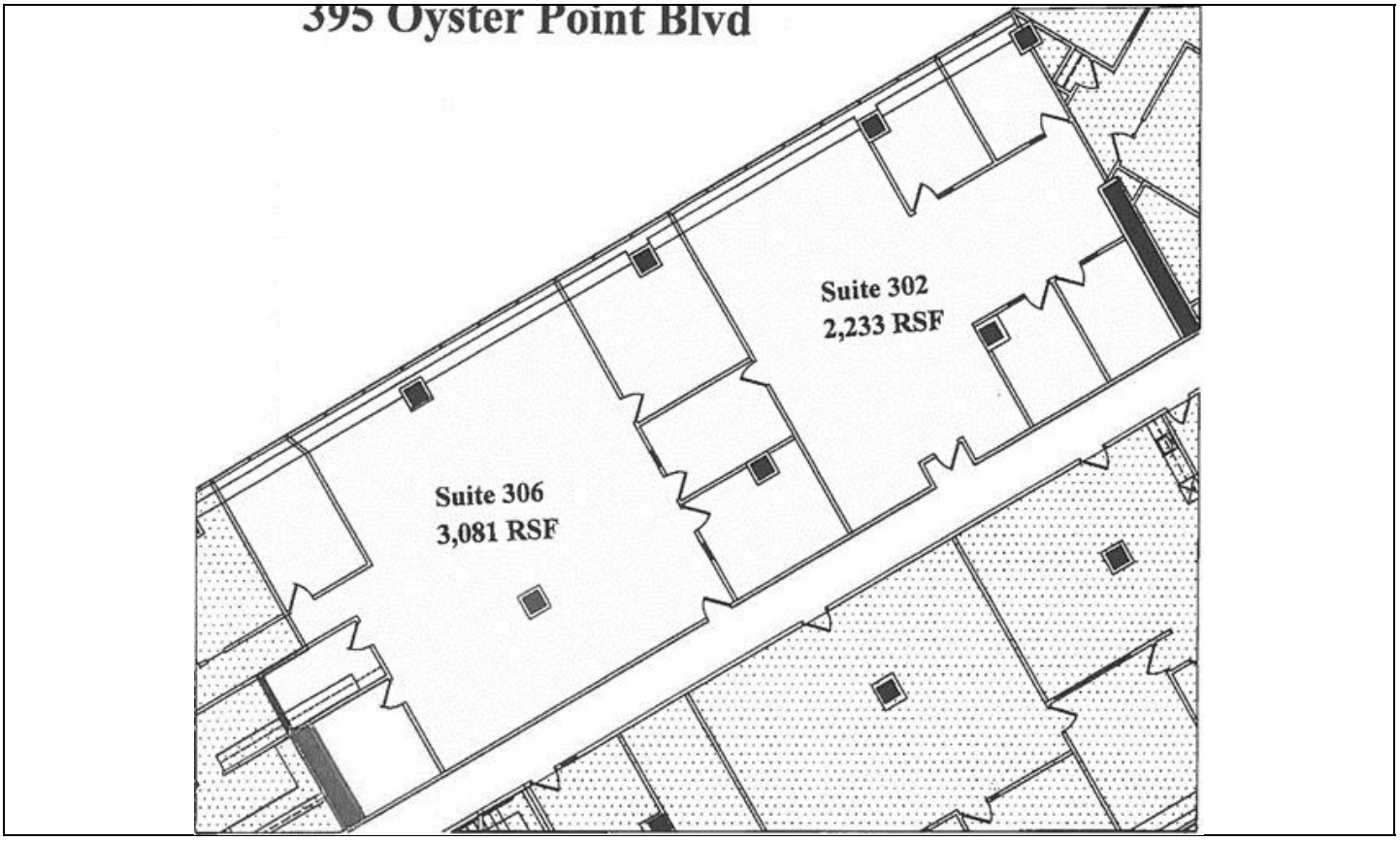
Landlord:	Tenant:
KASHIWA FUDOSAN AMERICA, INC., a California corporation	MYOKARDIA, INC., a Delaware corporation
By: TAK Development, Inc., a California corporation	By: /s/ T. Anastasios Gianakakos
Its: Attorney-in-Fact	T. Anastasios Gianakakos
By: /s/ Tomoki Miura	Its: CEO
Tomoki Miura, Senior Manager	
/s/ Robert L. Delsman	
Robert L. Delsman	
Approved as to Legal Form & Sufficiency	
Berkeley, California	
2018-11-14 13:08:2308'00'	

EXHIBIT A

SITE PLAN /
PARKING LOT LAYOUT
11/06/06

EXHIBIT B, p. 1

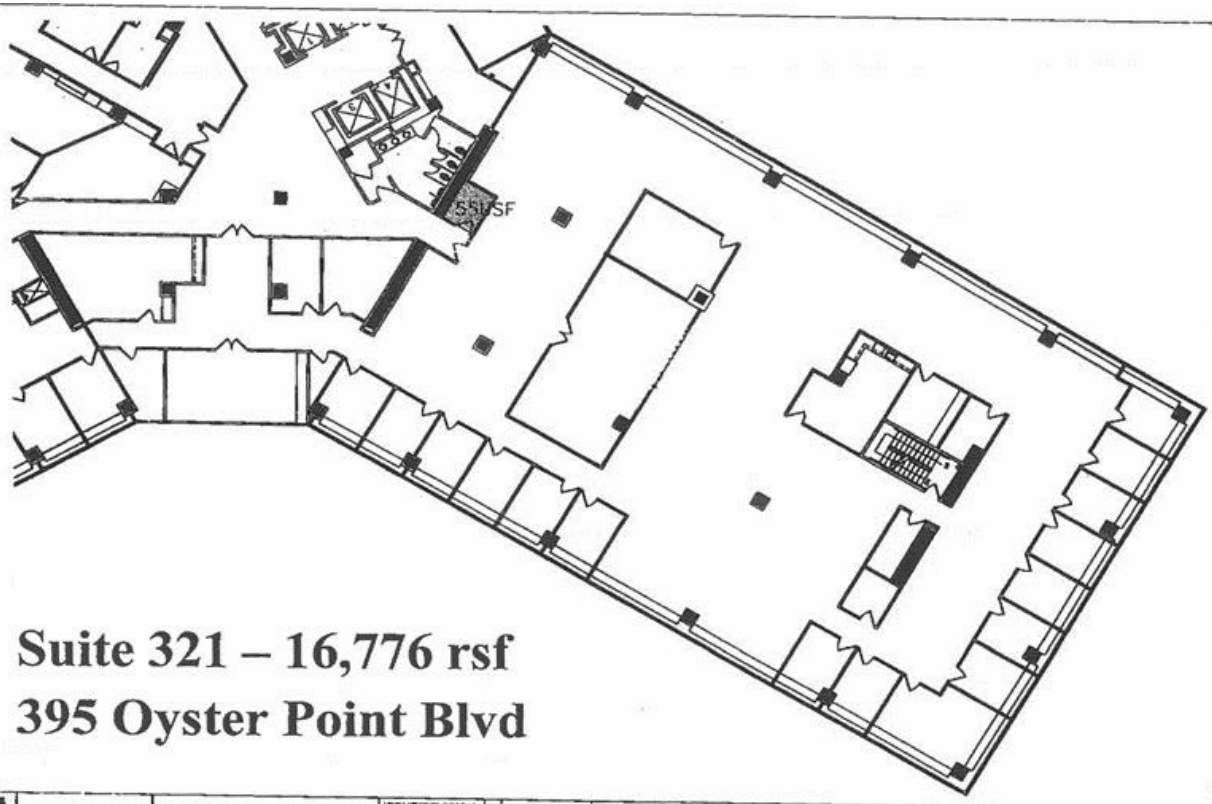
Suite 302-306 - 5,314 RSF



395 Oyster Point Blvd

	CUSHMAN &	395 OYSTER POINT BLVD.	SCALE:1/8”-1’-0”
	WAKEFIELD	SOUTH SAN FRANCISCO, CA	DATE:12.04.17
MSA architecture + design 360 22nd Street, Suite 800 Oakland, CA 94612 P 415541.0977 www.msaf.com			PROJECT NO: 17080
	ISSUE/REVISION:		MP - 1

EXHIBIT B, p. 2



Suite 321 – 16,776 rsf
395 Oyster Point Blvd

MSA architecture + design
340 22nd Street, Suite 800
Oakland, CA 94612
p 510.541.0977

CUSHMAN & WAKEFIELD

395 OYSTER POINT BLVD.
SO. SAN FRANCISCO, CA

ISSUE/REVISION:

SCALE: AS NOTED
DATE: 01.26.2018
PROJECT NO: 17174

TF-1

[Exhibit C]

OYSTER POINT MARINA PLAZA

Rules and Regulations

1. The sidewalks, doorways, halls, stairways, vestibules and other similar areas shall not be obstructed by Tenant or used by Tenant for any purpose other than ingress to and egress from the Premises and going from one part of the Building to another part.

2. Plumbing fixtures shall be used only for their designated purpose, and no foreign substances of any kind shall be thrown therein. Damage to any such fixture resulting from misuse by Tenant or any employee or invitee of Tenant shall be repaired at the expense of Tenant.

3. Tenant shall not install any radio or television antenna, loudspeaker, or other device on the roof or exterior walls of the Building. No TV or radio or recorder shall be played in such a manner as to cause a nuisance to any other tenant.

4. There shall not be used in any space, or in the public halls of the Building, either by Tenant or others, any hand trucks except those equipped with rubber tires and side guards or such other material handling equipment as Landlord may approve. No other vehicles of any kind shall be brought by any tenant into the Building or kept in or about its premises.

5. Tenant shall store all its trash and garbage within its Premises. No material shall be placed in the hallways or in the trash boxes or receptacles if such material is of such nature that it may not be disposed of in the ordinary and customary manner of removing and disposing of office building trash and garbage in the City of South San Francisco without being in violation of any law or ordinance governing such disposal. All garbage and refuse disposal shall be made only through entryways and elevators provided for such purposes and at such times as Landlord shall designate.

6. The requirements of tenants will be attended to only upon application in writing at the office of the Building. Employees of Landlord shall not perform any work or do anything outside of their regular duties unless under special instructions from Landlord.

7. These Rules and Regulations are in addition to, and shall not be construed to in any way modify or amend, in whole or in part, the agreements, covenants, conditions, and provisions of any lease of premises in the Building.

8. Tenant shall not occupy the Building or permit any portion of the Building to be occupied for the manufacture or direct sale of liquor, narcotics, or tobacco in any form, or as a medical office, barber shop, manicure shop, music or dance studio, or employment agency. Tenant shall not conduct in or about the Building any auction, public or private, without the prior written approval of Landlord.

9. Tenant shall not use in the Building any machines, other than standard office machines such as typewriters, calculators, personal computers, photocopiers, and similar machines, without the prior written approval of Landlord. All office equipment and any other device of any electrical or mechanical nature shall be placed by Tenant in the Premises in settings approved by Landlord, so as to absorb or prevent any vibration, noise, or annoyance. Tenant shall not cause improper noises, vibrations, or odors within the Building.

10. Tenant shall not enter the mechanical rooms, air conditioning rooms, electrical closets, janitorial closets, or similar areas or go upon the roof of the Building without the prior written consent of Landlord.

11. Tenant shall not mark, paint, drill into, cut, string wires within, or in any way deface any part of the Building, without the prior written consent of Landlord and as Landlord may direct. Should Landlord grant approval, Tenant agrees to assume full responsibility and warrants that, should a contractor other than the Building Contractor be used, Tenant's contractor will strictly abide by Landlord's guidelines for work contracted directly by Tenant. Upon removal of any wall decorations or installations or floor coverings by Tenant, any damage to the walls or floors shall be repaired by Tenant at Tenant's sole cost

and expense. This rule shall apply to all work performed in the Building, electrical devices, and attachments, and installations of any nature affecting floors, walls, woodwork, trim, windows, ceilings, equipment, or any other portion of the Building. Plans and specifications for such work, prepared at Tenant's sole expense, shall be submitted to Landlord and shall be subject to Landlord's prior written approval in each instance before the commencement of work. All installations, alterations, and additions shall be constructed by Tenant in a good and workmanlike manner, and only good grades of materials shall be used in connection therewith.

12. Tenant will not place objects on window sills or otherwise obstruct the exterior wall window covering.

13. The Tenant will keep all doors opening to the exterior of the Building, all fire doors, and all smoke doors closed at all times.

14. If Tenant uses the Premises after regular business hours or on non-business days Tenant shall lock any entrance doors to the Building or to the Premises used by Tenant immediately after using such doors.

15. The Tenant shall not use any portion of the Premises for lodging.

16. Landlord reserves the right to exclude or expel from the Building any person who, in the judgement of Landlord is intoxicated or under the influence of liquor or drugs, or who shall in any manner do any act in violation of any of the rules and regulations of the Building.

17. Tenant shall not park or attach any bicycle or motor driven cycle on or to any part of the Premises, the Building, or within the landscaping.

18. In all carpeted areas where desks and chairs are utilized, Landlord shall require Tenant, at Tenant's own cost, to place mats under each and every chair or use chairs on 1 1/2" wide rollers at minimum in order to protect said carpeting from unnecessary wear and tear.

19. Signs, advertisements, graphics, or notices visible in or from public corridors shall be subject to Landlord's written approval. Nails, screws, and other attachments to the Building require prior written consent from Landlord.

20. Landlord shall be notified in writing in advance of any and all contractors and technicians rendering any installation service to Tenant, and such contractors and technicians shall be referred to Landlord for approval and supervision prior to performing services. This applies to all work performed in the Building, including installation of telephone and communications lines and equipment, electrical devices, and all installations affecting floors, walls, woodwork, windows, ceilings, and any other physical portions of the Building.

21. Landlord shall be notified in writing in advance of any movement in or out of the Building of furniture, office equipment, or other bulky or heavy material which requires the use of elevators, stairways, or Building entrance and lobby; and such movement shall be restricted to hours established by Landlord and any other requirements of Landlord, including the use of elevator pads and the placement of masonite panel on the path of travel to protect flooring. All such movement shall be under Landlord's supervision, and the use of an elevator for such movements shall be restricted to the Building's freight elevators. Arrangements with Landlord should be made regarding the time, method, and routing of movement, and Tenant shall assume all risks of damage to articles moved and injury to persons or public resulting from such moves. Landlord shall not be liable for any acts or damages resulting from any such activity.

22. Landlord reserves the right to restrict access to all telephone closets, cabling, conduits, and risers in the Property. Tenant shall not have access for any reason to any of the aforementioned areas of the Property without the written permission of Landlord and the supervision of Landlord's Building Engineer. The means by which telephone, telegraph, and similar wires are to be introduced to the Premises and the location of telephones, call boxes, and other office equipment affixed to the Premises, shall be subject to the prior written approval of Landlord.

23. Any damage done to the Building by the movement of Tenant's property, or done by Tenant property while in the Building, shall be at Tenant’s expense.

24. All door pertinent to Tenant's Premises and all other Building door outside the Premises (other than smoke or heat-activated fire doors) are to be kept closed and not blocked open at all times, as they are fire control doors.

25. Tenant shall cooperate with Landlord in maintaining the Premises. Tenant shall not employ any person for the purpose of such cleaning other than the Building's cleaning and maintenance personnel.

26. To insure orderly operation of the Building, no deliveries of water, soft drinks, newspapers, or other such items to any Premises shall be made except by persons appointed or approved by Landlord in writing.

27. Nothing shall be swept or thrown into the corridors, halls elevator shafts, or stairways. No birds, fish, or animals of any kind shall be brought into or kept in, on, or about the Premises without the written permission of Landlord.

28. Except for trained and certified service dogs assisting the disabled consistent with the ADA and registered with Landlord's Property Manager, Tenant shall not bring into or keep in, on, or about the Premises or Property any birds, fish, dogs, cats, or animals of any kind without the express written permission of Landlord, which Landlord shall have the right to withhold or deny in its sole and absolute discretion. If Landlord elects to grant such permission with respect to the presence of animals in, on, or about the Premises or Property, it shall be conditioned upon Tenant's agreement to indemnify Landlord in writing with respect to the presence and activities of any such animals in, on, or about the Premises of Property and an increase in Tenant's liability insurance coverage commensurate with the associated increased liability exposure of Landlord, as determined by Landlord in its sole and absolute discretion.

29. No machinery of any kind, except for standard electronic office machinery such as personal computers, typewriters, and photocopiers, shall be operated by Tenant in the Premises without the prior written approval of the Landlord.

30. No cooking shall be done in the Premises, except that the use by Tenant of Underwriter's Laboratory approved microwave ovens and equipment for brewing coffee, tea, or other hot beverages shall be permitted, provided such use is in accordance with all applicable codes, laws, and ordinances.

31. Tenant shall not install any food, soft drink, or other vending machine within the Premises.

32. Tenant shall not use or keep on its Premises any kerosene, gasoline, or inflammable or combustible fluid or material other than limited quantities reasonably necessary for the operation and maintenance of office equipment. Tenant shall not use or keep any noxious gas or substances in the Premises or permit the Premises to be used in a manner offensive or objectionable to Landlord or other occupants of the Building by reason of noise, odors, or vibrations, or interfere in any way with other Tenants or those having business therein.

33. Tenant shall not tamper with or attempt to adjust temperature control thermostats in the Premises. Landlord shall make adjustments in thermostats on call from Tenant.

34. Tenant shall comply with all measures instituted by Landlord in its sole and absolute discretion for the security of the Premises, Property, and Complex, and all personnel using the same, including the use of service passes issued by Landlord for after-hours movement of office equipment or packages and signing a security register in Building lobby after hours. Nothing herein shall be construed to impose any obligation or requirement that Landlord provide any security services in the Premises, Property, or Complex, or any particular level or type of security services.

35. Landlord will initially furnish Tenant with a reasonable number of keys for entrance doors into the Premises and may charge Tenant for additional keys thereafter. All such keys shall remain the property of Landlord. No additional locks are allowed on any door of the Premises. At termination of this Lease, Tenant shall surrender to Landlord all keys to the Premises and give to Landlord the combination of all locks for safes and vault doors, if any, in the Premises.

36. Landlord retains the right, without notice or liability to any Tenant, to change the name and street address of the Building.

37. Canvassing, peddling, soliciting, and distribution of handbills in the Building are prohibited, and Tenant will cooperate to prevent these activities.

38. The Building hours of operation (excluding Holidays) are:

8:00 a.m. to 6:00 p.m.	Monday through Friday
9:00 a.m. to 1:00 p.m.	Saturday

39. Landlord reserves the right to rescind any of these Rules and regulations and to make future Rules and regulations required for the safety, protection, and maintenance of the Building, the operation and preservation of good order thereof, and the protection and comfort of the tenants and their employees and visitors. Such Rules and regulations and all modifications thereto shall, upon written notice, be binding as if originally included herein.

OYSTER POINT MARINA PLAZA

OYSTER POINT MARINA PLAZA

Athletic Facility Use Agreement & Release of Liability

THIS IS A LEGALLY BINDING AGREEMENT. READ IT CAREFULLY.

1,_____hereby acknowledge that my use of the exercise facility (the "Facility") at 395 / 400 Oyster Point Boulevard, owned by KASHIWA FUDOSAN AMERICA, INC. ("Landlord"), as well as any activities in which I may engage in conjunction with my use of the Facility, is entirely voluntary.

I AM AWARE THAT PARTICIPATING IN ATHLETIC ACTIVITIES AND THE USE OF THE EXERCISE FACILITY MAY BE HAZARDOUS AND THAT IT IS NOT POSSIBLE FOR LANDLORD TO GUARANTEE THAT OTHER PATRONS USING THE FACILITY WILL COMPLY WITH ALL ESTABLISHED RULES AND REGULATIONS. I AM VOLUNTARILY PARTICIPATING IN THESE ATHLETIC ACTIVITIES AND UTILIZING THE FACILITY WITH FULL KNOWLEDGE OF THE DANGER INVOLVED. I HEREBY AGREE TO ACCEPT AND ASSUME ANY AND ALL RISKS OF PROPERTY Loss, PERSONAL INJURY, OR DEATH, WHETHER OR NOT CAUSED BY THE NEGLIGENCE OF LANDLORD, LANDLORD'S EMPLOYEES OR AGENTS, OR ANY OTHER PATRON OR GUEST USING THESE FACILITIES.

_____
[initial here]

In exchange, as lawful consideration for being permitted by Landlord to participate in activities on Landlord's property and use its exercise Facility, I hereby agree that I, my heirs, next of kin, successors, and assigns will not sue, make a claim against, attach the property of or prosecute Landlord or Landlord's agents and employees for injury, death, or damage resulting from the negligence or other acts, howsoever caused, by any of Landlord's employees, agents, contractors, or patrons as a result of my participation in these activities or use of the exercise Facility. In addition, I hereby release and discharge Landlord from all actions, claims, or demands that I, my heirs, next of kin, successors, or assigns now have or may hereafter have for any loss of property, personal injury, death, or damage resulting from my participation in these activities or use of the facilities.

I HAVE CAREFULLY READ THIS AGREEMENT AND FULLY UNDERSTAND ITS CONTENTS. I AM AWARE THAT THIS IS A RELEASE OF LIABILITY AND A CONTRACT BETWEEN MYSELF AND LANDLORD AND SIGN IT OF MY OWN FREE WILL.

FACILITY HOURS: **Monday - Friday:6:00 am to 9:00 pm**
Saturday: 9:00 am to 1:00 pm and CLOSED ON SUNDAYS
NO GUESTS ALLOWED! - NO OVERNIGHT LOCKERS ALLOWED!

REIMBURSEMENT POLICY: You must fill out a Key Fob Return Form when you return your Key Fob. The form will ask for your new mailing address where the reimbursement check will be mailed. No cash will be received or refunded at any time.

Participant Signature: _____ Gender:Male / Female Date: _____
Company Name/Tenant: _____ Building: _____ Suite: _____

Key Fob No.: _____ New_____ Existing_____ Total: $_____ Check No.:_____

Witness

I certify that the person whose signature appears above acknowledged in my presence that he or she has read and fully understands the meaning and consequences of the foregoing Agreement and Release of Liability and the he or she signed it in my presence.

Witness: _____
_____ Date: _____

[name typed or printed]

WARNING: USE OF STEROIDS TO INCREASE STRENGTH OR GROWTH CAN CAUSE SERIOUS HEALTH PROBLEMS. STEROIDS CAN KEEP TEENAGERS FROM GROWING TO THEIR FULL HEIGHT; THEY CAN ALSO CAUSE HEART DISEASE, STROKE, AND DAMAGED LIVER FUNCTION. MEN AND WOMEN USING STEROIDS MAY DEVELOP FERTILITY PROBLEMS, PERSONALITY CHANGES, AND ACNE. MEN CAN ALSO EXPERIENCE PREMATURE BALDING AND DEVELOPMENT OF BREAST TISSUE. THESE HEALTH HAZARDS ARE IN ADDITION TO THE CIVIL AND CRIMINAL PENALTIES FOR UNAUTHORIZED SALE, USE, OR EXCHANGE OF ANABOLIC STEROIDS. California Civil Code ، 1812.67

[EXHIBIT E]

OYSTER POINT MARINA PLAZA

Lease Commencement Date Agreement

This LEASE COMMENCEMENT DATE AGREEMENT (the "Agreement") is made as of _____ between KASHIWA FUDOSAN AMERICA, INC., a California corporation ("Landlord") and _____, a _____ ("Tenant").

Tenant and Landlord acknowledge and agree as follows:

1. Tenant has received a fully-executed counterpart of the Lease dated as of _____ for premises commonly known as Suite _____ at _____ Oyster Point Boulevard in the Oyster Point Marina Plaza business part.

2. The Commencement Date of the Lease for all purposes thereunder is _____20 __, and the Expiration Date is _____, 20__.

3. Tenant acknowledges and agrees that, in executing this Agreement, TAK Development, Inc., a California corporation, is acting solely in its capacity as Landlord's authorized attorney-in-fact. TAK Development, Inc. is not acquiring or assuming any legal liability or obligation to any other party executing this Agreement or the Lease, and any claim or demand of any such other party arising under or with respect to this Agreement or the Lease shall be made and enforced solely against Landlord.

IN WITNESS WHEREOF, Landlord and Tenant have executed this Agreement as of the date first above written.

Landlord:	*Tenant*:
KASHIWA FUDOSAN AMERICA, INC., a corporation	_____ a _____ California
By: TAK Development, Inc., a California corporation	By: _____
Its: Attorney-in-Fact	_____ [name typed]
By: _____ Tomoki Miura, Senior Manager	Its: _____

TABLE OF CONTENTS

INDEX OF DEFINED TERMS

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Forms S-3 (Nos. 333-223526, 333-219220 and 333-215443) and Forms S-8 (Nos. 333-229699, 333-222866, 333-215822, and 333-207674) of MyoKardia, Inc. of our report dated February 28, 2019 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP
San Jose, California
February 28, 2019

Exhibit 31.1

CERTIFICATIONS

I, T. Anastasios Gianakakos, certify that:

1. I have reviewed this Annual Report of MyoKardia, Inc. on Form 10‑K for the period ended December 31, 2018 as filed with the Securities and Exchange Commission on the date hereof (the "Report");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a‑15(e) and 15d‑15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a‑15(f) and 15d‑15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

February 28, 2019

/s/ T. Anastasios Gianakakos
T. Anastasios Gianakakos
Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATIONS

I, Taylor Harris, certify that:

1. I have reviewed this Annual Report of MyoKardia, Inc. on Form 10‑K for the period ended December 31, 2018 as filed with the Securities and Exchange Commission on the date hereof (the "Report");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a‑15(e) and 15d‑15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a‑15(f) and 15d‑15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

February 28, 2019

/s/ Taylor Harris
Taylor Harris
Chief Financial Officer
(Principal Financial and Accounting Officer)

Exhibit 32.1

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 of MyoKardia, Inc. (the "Company") on Form 10‑K for the period ended December 31, 2018 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, T. Anastasios Gianakakos, the Chief Executive Officer of MyoKardia, Inc. (the "Company"), do hereby certify in accordance with 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes‑Oxley Act of 2002 that, based upon my knowledge:

1. This Annual Report on Form 10-K of the Company, to which this certification is attached as an exhibit (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.

February 28, 2019

/s/ T. Anastasios Gianakakos
T. Anastasios Gianakakos
Chief Executive Officer
(Principal Executive Officer)

A signed original of this written statement required by Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. Section 1350), has been provided to MyoKardia, Inc. and will be retained by MyoKardia, Inc. and furnished to the Securities and Exchange Commission or its staff upon request. This certification accompanies the Form 10-K to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of MyoKardia, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Form 10-K), irrespective of any general incorporation language contained in such filing.

Exhibit 32.2

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 of MyoKardia, Inc. (the "Company") on Form 10-K for the period ended December 31, 2018 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Taylor Harris, Chief Financial Officer, Finance and Corporate Development (Principal Financial and Accounting Officer) of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
2. Information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

February 28, 2019

/s/ Taylor Harris
Taylor Harris
Chief Financial Officer
(Principal Financial and Accounting Officer)

A signed original of this written statement required by Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. Section 1350), has been provided to MyoKardia, Inc. and will be retained by MyoKardia, Inc. and furnished to the Securities and Exchange Commission or its staff upon request. This certification accompanies the Form 10-K to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of MyoKardia, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Form 10-K), irrespective of any general incorporation language contained in such filing.