RIGEL PHARMACEUTICALS INC
Form 10-K
February 28, 2019
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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

Commission file number 0 29889

RIGEL PHARMACEUTICALS, INC.

(Exact name of registrant as specified in its charter)

Delaware	94 3248524
(State or other jurisdiction of incorporation or organization)	(IRS Employer Identification No.)
1180 Veterans Blvd. South San Francisco, California	94080
(Address of principal executive offices)	(Zip Code)

(650) 624 1100

(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 $.001 per share	The Nasdaq Global Market

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

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

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 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 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10 K or any amendment to this Form 10 K.

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

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

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

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

The approximate aggregate market value of the Common Stock held by non affiliates of the registrant, based upon the closing price of the registrant's Common Stock as reported on the Nasdaq Global Market on June 30, 2018, the last business day of the registrant's most recently completed second fiscal quarter, was $470,773,135. Shares of the registrant's outstanding Common Stock held by each executive officer, director and affiliates of the registrant's outstanding Common Stock have been excluded. The determination of affiliate status for the purposes of this calculation is not necessarily a conclusive determination for other purposes.

As of February 21, 2019, there were 167,171,505 shares of the registrant's Common Stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Items 10, 11, 12, 13 and 14 of Part III of this Annual Report on Form 10 K incorporate information by reference from the definitive proxy statement for the registrant's 2019 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission pursuant to Regulation 14A not later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10 K.

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FORWARD LOOKING STATEMENTS

This Annual Report on Form 10 K contains statements indicating expectations about future performance and other forward looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the Securities Act), Section 21E of the Securities Exchange Act of 1934, as amended (the Exchange Act), and the Private Securities Litigation Reform Act of 1995, that involve risks and uncertainties. We usually use words such as “may,” “will,” “should,” “could,” “expect,” “plan,” “anticipate,” “might,” “believe,” “estimate,” “predict,” “intend” or the negative of similar expressions to identify these forward looking statements. These statements appear throughout this Annual Report on Form 10 K and are statements regarding our current intent, belief or expectation, primarily with respect to our operations and related industry developments. Examples of these statements include, but are not limited to, statements regarding the following: our business and scientific strategies; the progress of our product development programs, including clinical testing, and the timing of commencement and results thereof; our corporate collaborations, and revenues that may be received from collaborations and the timing of those potential payments; our drug discovery technologies; our research and development expenses; protection of our intellectual property; and sufficiency of our cash resources and need for additional capital. You should not place undue reliance on these forward looking statements. Our actual results could differ materially from those anticipated in these forward looking statements for many reasons, including as a result of the risks and uncertainties discussed under the heading “Risk Factors” in Part I, Item 1A of this Annual Report on Form 10 K. A forward looking statement speaks only as of the date on which it is made, and, except as required by law, we undertake no obligation to update any forward looking statement to reflect events or circumstances after the date on which the statement is made or to reflect the occurrence of unanticipated events. New factors emerge from time to time, and it is not possible for us to predict which factors will arise. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward looking statements.

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PART I

Item 1. Business

Overview

Rigel Pharmaceuticals, Inc., is a biotechnology company dedicated to discovering, developing and providing novel small molecule drugs that significantly improve the lives of patients with immune and hematologic disorders, cancer and rare diseases. Our pioneering research focuses on signaling pathways that are critical to disease mechanisms. Our first U.S. Food and Drug Administration (FDA) approved product is TAVALISSE® (fostamatinib disodium hexahydrate), an oral spleen tyrosine kinase (SYK) inhibitor, for the treatment of adult patients with chronic immune thrombocytopenia (ITP) who have had an insufficient response to a previous treatment. Our current clinical programs include an upcoming Phase 3 study of fostamatinib in autoimmune hemolytic anemia (AIHA) and an ongoing Phase 1 study of R835, a proprietary molecule from our interleukin receptor associated kinase (IRAK) program. In addition, we have product candidates in development with partners BerGenBio ASA (BerGenBio), Daiichi Sankyo (Daiichi), Aclaris Therapeutics (Aclaris), and AstraZeneca AB (AZ).

Business Update

In April 2018, we received FDA approval of our first product TAVALISSE® (fostamatinib disodium hexahydrate), an oral SYK inhibitor, for the treatment of adult patients with chronic immune thrombocytopenia who have had an insufficient response to a previous treatment. TAVALISSE was launched in the U.S. on May 29, 2018. Sales grew approximately 50% in the fourth quarter of 2018 compared to the third quarter of 2018, which was driven, in part, by continued use of the product as an early treatment option in steroid refractory patients and strong continuation of therapy among patients. For the year ended December 31, 2018, we reported $13.9 million in net product sales of TAVALISSE. With our fully integrated commercial team consisting of sales, marketing, market access, and commercial operations functions, we continue to execute on our commercial strategy to access the U.S. ITP market estimated to be over $1.0 billion annually.

Our execution of our global strategy for commercialization of fostamatinib outside of the U.S. has made significant progress since the fourth quarter of 2018. Our recent commercial collaborations with Kissei Pharmaceutical Co., Ltd. (Kissei) and Grifols, S.A. (Grifols), lay the groundwork for us to advance fostamatinib globally and to access the worldwide ITP market which is estimated to be over $1.8 billion annually. Kissei is a leading Japanese pharmaceutical company with significant development experience and a track record of commercial success in Asian markets. Grifols is one of the largest intravenous immunoglobulin (IVIG) providers globally that has established relationships with European hematologists and hematologist/oncologists, as well as a distribution infrastructure across the E.U. Fostamatinib is on track for potential E.U. approval by the end of 2019, which could enable a product launch in

initial European markets as early as 2020.

In October 2018, we entered into an exclusive license and supply agreement with Kissei to develop and commercialize fostamatinib in all current and potential indications in Japan, China, Taiwan and the Republic of Korea. Under the agreement, we received an upfront payment of $33.0 million with the potential for up to $147 million in development, regulatory and commercial milestone payments. We will also receive product transfer price payments in the mid to upper twenty percent range based on tiered net sales for the exclusive supply of fostamatinib to Kissei.

In January 2019, we entered into an exclusive license agreement with Grifols to commercialize fostamatinib in all indications, including chronic ITP, AIHA, and IgAN, in Europe and Turkey. Under the agreement, we received an upfront payment of $30.0 million, with the potential for $297.5 million in total regulatory and commercial milestones, which includes a $20 million payment upon approval from the European Medicines Agency (EMA) for fostamatinib in chronic ITP. We will also receive stepped double-digit royalty payments based on tiered net sales which may reach 30% of net sales. In return, Grifols receives exclusive rights to fostamatinib in human diseases, including chronic ITP, AIHA, and IgAN, in Europe and Turkey. In the event that, in 2021, after the second anniversary of the agreement, fostamatinib has not been approved by the EMA for the treatment of ITP in Europe, Grifols will have the option during a six-month time-frame to terminate the entire agreement which would terminate all their rights to ITP, AIHA, and all other

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indications. In this limited circumstance, we will pay Grifols $25.0 million and regain all rights to fostamatinib in Europe and other territories. We retain the global rights to fostamatinib outside the Kissei and Grifols territories.

In November 2018, our pivotal Phase 3 trial design for fostamatinib in warm AIHA was submitted to the FDA. Results from our recent Phase 2 suggest that fostamatinib could potentially be an effective treatment option. Preparations for patient enrollment in our pivotal trial have begun and we are on track for study initiation in the first half of 2019. For the site selection process, we are leveraging the locations and relationships from our Phase 3 trial in chronic ITP. Additionally, in January 2018, the FDA awarded Orphan Drug Designation to fostamatinib for the treatment of warm AIHA.

In June 2018, we initiated a Phase 1 study to assess safety, tolerability, pharmacokinetics and pharmacodynamics of R835, a proprietary molecule from our IRAK program, in healthy subjects. We have several additional molecules which were discovered in our labs that are currently under development.

In May 2018, we completed an underwritten public offering in which we sold 18,400,000 shares of our common stock pursuant to an effective registration statement at a price to the public of $3.90 per share and received net proceeds of approximately $67.2 million after deducting underwriting discounts and commissions and offering expenses.

Executive Team Appointments

In May 2018, we announced that Dean Schorno was appointed as the Company’s Executive Vice President and Chief Financial Officer. In March 2018, we announced that Stacy Markel was appointed as the Company’s Executive Vice President of Human Resources.

Strategy

Our goal is to become a successful commercial stage biopharmaceutical company. We aim to expand our commercial business in the U.S. on our own and globally through partnerships, and continue our research and development of novel small molecule drugs that significantly improve the lives of patients with immune and hematological disorders, cancer and rare diseases through our innovative drug discovery platform. We continue to build and maintain a strong commercial team in the U.S. to execute successfully on our commercialization strategy for TAVALISSE in chronic ITP. We also entered into partnerships for the expansion of fostamatinib into Europe and Asia, and will be concentrating on the further development of the utility of fostamatinib in other indications on our own or by our partners.

The key elements to our business and scientific strategy are to:

- maximize the opportunity to successfully commercialize TAVALISSE in the United States, where we believe a company our size can effectively compete in rare disease markets;

- assist our global commercialization partners in Europe and Asia in maximizing the revenue potential for fostamatinib;

- develop and commercialize fostamatinib for possible additional indications, including AIHA;

- develop drug candidates and establish strategic collaborations with pharmaceutical and biotechnology companies to further develop and market our product candidates.

- develop a diverse portfolio of drug candidates that address focused therapeutic indications or that represent significant market opportunities; and

- utilize our research engine to discover and validate new product candidates in focused therapeutic indications.

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Our Product Portfolio

The following table summarizes our portfolio:

Product in Commercial Launch

TAVALISSE in ITP

Disease background. Chronic ITP affects an estimated 65,000 adult patients in the U.S. In patients with ITP, the immune system attacks and destroys the body's own blood platelets, which play an active role in blood clotting and healing. ITP patients can suffer extraordinary bruising, bleeding and fatigue as a result of low platelet counts. Current therapies for ITP include steroids, blood platelet production boosters that imitate thrombopoietin (TPOs) and splenectomy.

Orally-available fostamatinib program. Taken in tablet form, fostamatinib blocks the activation of SYK inside immune cells. ITP is typically characterized by the body producing antibodies that attach to healthy platelets in the blood stream. Immune cells recognize these antibodies and affix to them, which activates the SYK enzyme inside the immune cell, and triggers the destruction of the antibody and the attached platelet. When SYK is inhibited by fostamatinib, it interrupts this immune cell function and allows the platelets to escape destruction. The results of our Phase 2 clinical trial, in which fostamatinib was orally administered to sixteen adults with chronic ITP, published in Blood, showed that fostamatinib significantly increased the platelet counts of certain ITP patients, including those who had failed other currently available agents.

We designed a Phase 3 clinical program, called fostamatinib in thrombocytopenia (FIT), in which a total of 150 ITP patients were randomized into two identical multi-center, double-blind, placebo-controlled clinical trials. The patients were diagnosed with persistent or chronic ITP, and had blood platelet counts consistently below 30,000 per microliter of blood. Two-thirds of the subjects received fostamatinib orally at 100 mg bid (twice daily) and the other third received placebo on the same schedule. Subjects were expected to remain on treatment for up to 24 weeks. At week four of treatment, subjects who failed to meet certain platelet count and met certain tolerability thresholds could have their dosage of fostamatinib (or corresponding placebo) increased to 150 mg bid. The primary efficacy endpoint of this program was a stable platelet response by week 24 with platelet counts at or above 50,000 per microliter of blood for at least four of the final six qualifying blood draws. In August 2015, the FDA granted our request for Orphan Drug designation for fostamatinib for the treatment of ITP.

On August 30, 2016, we announced the results of the first study, reporting that fostamatinib met the study's primary efficacy endpoint. The study showed that 18% of patients receiving fostamatinib achieved a stable platelet response compared to none receiving a placebo control (p=0.0261). On October 20, 2016, we announced the results of the second study, reporting that the response rate was 18%, consistent with the first study. However, one patient in the

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placebo group (4%) achieved a stable platelet response, therefore the difference between those on treatment and those on placebo did not reach statistical significance (p=0.152) and the study did not meet its primary endpoint. Using the most conservative sensitivity analysis, rather than the protocol's prespecified analysis, one more patient in the second study is considered a non-responder, resulting in 8 of 50 (16%) responders on fostamatinib (p = 0.256 vs. placebo). When the data from both studies are combined, however, this difference is statistically significant (p=0.007).

Patients from the FIT studies were given the option to enroll in a long-term open-label extension study and receive treatment with fostamatinib, also a Phase 3 trial. A total of 123 patients enrolled in this study. All the patients who responded to fostamatinib in the FIT studies and enrolled in the long-term open-label extension study maintained a median platelet count of 106,500/uL at a median of 16 months. In addition, there were 44 placebo non-responders that enrolled in the long-term open-label extension study. 41 of these patients had at least 12 weeks of follow-up. Of those, 9 patients (22%) have achieved a prospectively defined stable platelet response, which is statistically significant (p=0.0078) and similar to the response rate fostamatinib achieved in the parent studies.

A stable response was defined as a patient achieving platelet counts of greater than 50,000/uL on more than 4 of the 6 visits between weeks 14 and 24, without rescue medication. In the post-study analysis we performed, a clinically-relevant platelet response was defined to include patients achieving one platelet count over 50,000/uL during the first 12 weeks of treatment, in absence of rescue medication, but who did not otherwise meet the stable response criteria. Once the platelet count of greater than 50,000/uL is achieved, a loss of response was defined as two consecutive platelet counts of less than 30,000/uL in any subsequent visits. In the combined dataset of both stable and clinically-relevant platelet responders for the FIT studies, the response rate was 43% (43/101), compared to 14% (7/49) for placebo (p=0.0006).

The most frequent adverse events were gastrointestinal-related, and the safety profile of the product was consistent with prior clinical experience, with no new or unusual safety issues uncovered.

On April 17, 2018, we announced that the FDA had approved TAVALISSE for the treatment of thrombocytopenia in adult patients with chronic ITP who have had an insufficient response to a previous treatment. On April 30, 2018, we announced that the American Journal of Hematology published positive results from the FIT Phase 3 clinical program. We launched TAVALISSE in the U.S. on our own in May 2018. In October 2018, we announced that the EMA has validated the MAA for fostamatinib in adult chronic immune thrombocytopenia, which initiated the MAA review process. We anticipate a decision from the CHMP of the EMA by the fourth quarter of 2019.

Commercial launch activities, including sales and marketing

A significant portion of our operating expenses in 2018 is related to our commercial launch activities for TAVALISSE. Specifically, our marketing and sales efforts are focused on targeting hematologists and

hematologist-oncologists in the United States, who manage chronic adult ITP patients.

We have a fully integrated commercial team consisting of sales, marketing, market access, and commercial operations functions. Our sales team promotes TAVALISSE in the U.S. wherein, in the ordinary course of the business, we use customary pharmaceutical company practices to market our products in the U.S. and concentrate our efforts on hematologists and hematologists-oncologists. TAVALISSE is sold initially through third-party wholesale distribution and specialty pharmacy channels and group purchasing organizations before being ultimately prescribed to patients. To facilitate our commercial activities in the U.S., we also enter into arrangements with various third-parties, including advertising agencies, market research firms and other sales-support-related services as needed. We believe that our commercial team and distribution practices are adequate to ensure that our marketing efforts reach our target customers and deliver our products to patients in a timely and compliant fashion. Also, to help ensure that all eligible patients in the U.S. have appropriate access to TAVALISSE, we have established a comprehensive reimbursement and patient support program called Rigel One Care (ROC). Through ROC, we provide co-pay assistance to qualified, commercially insured patients to help minimize out-of-pocket costs and provide free drug to uninsured or under-insured patients who meet certain clinical and financial criteria. In addition, ROC is designed to provide comprehensive reimbursement support services, such as prior authorization support, benefits investigation and appeals support.

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Competitive landscape for TAVALISSE

Our industry is intensely competitive and subject to rapid and significant technological change. TAVALISSE is competing with other existing therapies. In addition, a number of companies are pursuing the development of pharmaceuticals that target the same diseases and conditions that we are targeting. For example, there are existing therapies and drug candidates in development for the treatment of ITP that may be alternative therapies to TAVALISSE.

Currently, corticosteriods remain the most common first line therapy for ITP, occasionally in conjunction with intravenous immuglobulin (IVIg) or anti-Rh(D) to help further augment platelet count recovery, particularly in emergency situations. However, it has been estimated that frontline agents lead to durable remissions in only a small percentage of newly-diagnosed adults with ITP. Moreover, concerns with steroid-related side effects often restrict therapy to approximately four weeks. As such, many patients progress to persistent or chronic ITP, requiring other forms of therapeutic intervention. In long-term treatment of chronic ITP, patients are often cycled through several therapies over time in order to maintain a sufficient response to the disease.

Other approaches to treat ITP are varied in their mechanism of action, and there is no consensus about the sequence of their use, according to the most recent ITP guideline from the American Society of Hematology. Options include splenectomy, thrombopoietin receptor agonists (TPO-RAs) and various immunosuppressants (such as rituximab). The response rate criteria of the above-mentioned options vary, precluding a comparison of response rates for individual therapies.

Even with the above treatment options, a significant number of patients remain severely thrombocytopenic for long durations and are subject to risk of spontaneous or trauma-induced hemorrhage. The addition of fostamatinib to the treatment options could be beneficial since it has a different mechanism of action than any of the therapies that are currently available. Fostamatinib is a potent and relatively selective SYK inhibitor, and its inhibition of Fc receptors and B-cell receptors of signaling pathways make it a potentially broad immunomodulatory agent.

Other products in the U.S. that are approved by the FDA to increase platelet production through binding and TPO receptors on megakaryocyte precursors include PROMACTA® (Novartis) and Nplate® (Amgen, Inc.).

Fostamatinib in Global Markets

Fostamatinib in Europe/Turkey

In January 2019, we entered into an exclusive commercialization license agreement with Grifols to commercialize fostamatinib for the treatment, palliation, or prevention of human diseases, including chronic or persistent ITP, AIHA, and IgAN in Europe and Turkey. Pursuant to the terms of the license agreement, Grifols received exclusive rights to commercialize, and non-exclusive rights to develop, fostamatinib in Europe and Turkey. Grifols also received an exclusive option to expand the territory under its exclusive and non-exclusive licenses to include the Middle East, North Africa and Russia (including Commonwealth of Independent States). The parties' collaboration is governed through a joint governance committee.

We are responsible for performing and funding certain development activities for fostamatinib for ITP and AIHA in Europe and Turkey and Grifols is responsible for all other development activities for fostamatinib in such territory. We will retain the global rights to fostamatinib outside the Grifols territories and those rights previously granted to Kissei. We remain responsible for the manufacture and supply of fostamatinib for all development and commercialization activities under the agreement. In connection with the agreement, we will enter into a supply agreement with Grifols pursuant to which we will supply Grifols with filled and finished product for use under the license agreement.

Under the terms of the agreement, we received an upfront cash payment of $30.0 million and will be eligible to receive regulatory and commercial milestones of up to $297.5 million, which includes a $17.5 million payment for EMA approval of fostamatinib for the first indication, currently anticipated to be for the treatment of chronic ITP, and a $2.5 million creditable advance royalty payment due upon EMA approval of fostamatinib in the first indication. We will

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also receive tiered royalty payments ranging from the mid-teens to 30% of net sales of fostamatinib in Europe and Turkey. In return, Grifols receives exclusive rights to fostamatinib in human diseases, including chronic ITP, AIHA, and IgAN, in Europe and Turkey. In the event that, in 2021, after the second anniversary of the agreement, fostamatinib has not been approved by the EMA for the treatment of ITP in Europe, Grifols will have the option during a six-month time-frame to terminate the entire agreement which would terminate all their rights to ITP, AIHA, and all other indications. In this limited circumstance, we will pay Grifols $25.0 million and regain all rights to fostamatinib in Europe and other territories. We retain the global rights to fostamatinib outside the Kissei and Grifols territories.

Fostamatinib in Japan/Asia

In October 2018, we entered into an exclusive license and supply agreement with Kissei to develop and commercialize fostamatinib in all current and potential indications in Japan, China, Taiwan and the Republic of Korea. Kissei is a Japan-based pharmaceutical company addressing patients' unmet medical needs through its research, development and commercialization efforts, as well as through collaborations with partners.

Under the terms of the agreement, Rigel received an upfront cash payment of $33.0 million, with the potential for an additional $147 million in development and commercial milestone payments, and will receive product transfer price payments in the mid to upper twenty percent range based on tiered net sales for the exclusive supply of fostamatinib. Kissei receives exclusive rights to fostamatinib in ITP and all future indications in Japan, China, Taiwan, and the Republic of Korea. Rigel retains the global rights, excluding these Asian countries, to develop and commercialize fostamatinib in ITP and any additional indications.

Kissei will initially seek local country approval for fostamatinib in ITP and conduct clinical studies as required by the country's Pharmaceuticals and Medical Devices Agency. Japan has the third highest prevalence of chronic ITP in the world behind the U.S. and EU.

Clinical Stage Programs

Fostamatinib—AIHA

Disease background. AIHA is a rare, serious blood disorder where the immune system produces antibodies that result in the destruction of the body's own red blood cells. Symptoms can include fatigue, shortness of breath, rapid heartbeat, jaundice or enlarged spleen. While no medical treatments are currently approved for AIHA, physicians generally treat acute and chronic cases of the disorder with corticosteroids, other immuno-suppressants, or

splenectomy. Research has shown that inhibiting SYK with fostamatinib may reduce the destruction of red blood cells. This disorder affects an estimated 40,000 Americans, for whom no approved treatment options currently exist.

Orally available fostamatinib program. We conducted our Phase 2 clinical trial, also known as the SOAR study, in patients with warm AIHA. This trial was an open-label, multi-center, two-stage study that evaluated the efficacy and safety of fostamatinib in patients with warm AIHA who had previously received treatment for the disorder, but have relapsed. The primary efficacy endpoint of this study was to achieve increased hemoglobin levels by week 12 of greater than 10 g/dL, and greater than or equal to 2 g/dL higher than baseline.

In October 2017, we announced that, on a top-line, preliminary basis, Stage 1 of the AIHA study enrolled 17 patients who have had at least one post-baseline hemoglobin measure. In January 2018, we also announced the updated top-line data as of December 2017 for this open-label study in which 47% of these patients (8 patients out of 17) have responded to fostamatinib treatment. Of the 17, six patients, including the last two patients enrolled, responded during the 12-week evaluation period and an additional two patients met the response criteria in the extension study after 12 weeks of dosing. In February 2018, an additional patient in the Stage 1 extension study met the response criteria. As of February 2018, 53% of evaluable patients (9 of 17) have responded to fostamatinib treatment. The safety profile was consistent with the existing fostamatinib safety database. Given that the Stage 1 of the study met its primary efficacy endpoint, we began enrollment of Stage 2 of this study, in which we planned to enroll 20 patients under the same protocol. After we met with the FDA regarding the pathway of our AIHA program, we stopped enrollment of Stage 2 of this study at the end of August 2018 and planned to proceed with the pivotal Phase 3 trial.

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We submitted our pivotal Phase 3 trial design for the treatment of warm AIHA to the FDA in November 2018. The trial is a placebo-controlled study of approximately 80 patients with primary or secondary warm AIHA who have failed at least one prior treatment. The primary endpoint is anticipated to be a durable hemoglobin response by week 24, defined as Hgb > 10 g/dL and > 2 g/dL greater than baseline and durability response, with the response not being attributed to rescue therapy. Enrollment is expected to begin in the first half of 2019.

In January 2018, the FDA granted our request for Orphan Drug designation for fostamatinib for the treatment of AIHA.

Fostamatinib—IgAN

Disease background. IgAN is an autoimmune disease that severely affects the functioning of the kidneys. An estimated 12,000 Americans are diagnosed with this type of glomerulonephritis each year, with 25% of whom will eventually require dialysis and/or kidney transplantation over time. IgAN is characterized by the deposition of IgA immune complexes in the glomeruli of the kidneys leading to an inflammatory response and subsequent tissue damage that ultimately disrupts the normal filtering function of the kidneys. By inhibiting SYK in kidney cells, fostamatinib may block the signaling of IgA immune complex receptors, reduce the deposition of IgA immune complexes and arrest or slow destruction of the glomeruli.

Orally-available fostamatinib program. Our Phase 2 clinical trial in patients with IgAN, called SIGN (SYK Inhibition for Glomerulonephritis) completed enrollment for its first and second cohorts. In January 2017, we announced that the first cohort in the Phase 2 study of fostamatinib in IgAN was completed in various centers throughout Asia, the U.S. and Europe. This cohort evaluated the efficacy, safety, and tolerability of the lower dose of fostamatinib (100mg BID, n=26; placebo n=12) as measured by change in proteinuria, renal function, and histology (comparing the pre- and post-study renal biopsies). The primary efficacy endpoint was the mean change in proteinuria from baseline at 24 weeks. The study found that at 24 weeks, fostamatinib was well tolerated with a good safety profile. The second cohort evaluated a higher dose of fostamatinib (150mg BID) and completed enrollment in August 2017.

In April 2018, we announced that trial did not achieve statistical significance for its primary endpoint, which was mean change in proteinuria comparing fostamatinib dose groups to placebo controls in all patients studied. However, in a pre-specified subgroup analysis of patients with greater than 1 gram/day of proteinuria at baseline, the initial data showed a greater reduction in proteinuria in fostamatinib-treated patients relative to placebo patients (this finding did not reach statistical significance). Patients with greater than 1 gram/day of proteinuria have an increased risk of disease progression and represent an unmet medical need. Current guidance for clinical trials in IgAN recommends studying patients with greater than 1 gram/day of proteinuria at entry. We decided to stop any further internal development of this program in the U.S.

R835, an Oral IRAK1/4 Inhibitor for Autoimmune and Inflammatory Diseases

Orally Available IRAK 1/4 Inhibitor Program. During the second quarter of 2018, we selected R835, a proprietary molecule from our IRAK preclinical development program, for human clinical trials. This investigational candidate, R835, is an orally available, potent and selective inhibitor of IRAK1 and IRAK4 that blocks inflammatory cytokine production in response to toll-like receptor (TLR) and the interleukin-1 (IL-1R) family receptor signaling. TLRs and IL- 1Rs play a critical role in the innate immune response and dysregulation of these pathways can lead to a variety of inflammatory conditions including psoriasis, rheumatoid arthritis, inflammatory bowel disease and gout (among others). R835 prevents cytokine release in response to TLR and IL-1R activation in vitro. R835 is active in multiple rodent models of inflammatory disease including psoriasis, arthritis, lupus, multiple sclerosis and gout. Preclinical studies show that R835 inhibits both the IRAK1 and IRAK4 signaling pathways, which play a key role in inflammation and immune responses to tissue damage. Dual inhibition of IRAK1 and IRAK4 allows for more complete suppression of pro-inflammatory cytokine release.

We initiated a Phase 1 study to assess safety, tolerability, pharmacokinetics and pharmacodynamics of R835 in healthy subjects in the second quarter of 2018. This Phase 1 study is a randomized, placebo-controlled, double-blind trial

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in up to 91 healthy subjects, ages 18 to 55. The study design aims to assess the tolerability and safety of R835 in both single ascending and multiple ascending doses. We expect to complete our Phase 1 study in 2019.

Partnered Clinical Programs

R548 (ATI-501 and ATI-502) - Aclaris

Aclaris is developing ATI-501 and ATI-502, an oral and topical Janus Kinase (JAK) 1/3 inhibitor. ATI- 501 is being developed as an oral treatment for patients with alopecia areata (AA), including the more severe forms of AA that result in total scalp hair loss, known as alopecia totalis (AT), and total hair loss on the scalp and body, known as alopecia universalis (AU). Aclaris recently started a Phase 2 clinical trial of its investigational JAK inhibitor ATI-501 oral suspension in patients with AA, including AT and AU. In December 2018, Aclaris announced that it has completed enrollment of AUAT-201 Oral, a randomized, double-blinded, parallel-group, placebo-controlled trial to evaluate the safety, efficacy and dose response of three concentrations of ATI-501 oral suspension for the treatment of AA. Topline data from the AUAT-201 Oral trial are expected in the third quarter of 2019.

In 2017, three Phase 2 studies with the topical treatment ATI-502 in AA and Vitiligo were initiated. AA-202 Topical and AUATB-201 Topical are ongoing Phase 2 clinical trials of ATI-502 for the treatment of AA in the U.S. and Australia, respectively. In November 2018, Aclaris completed enrollment of AA-201 Topical, a randomized, double-blinded, parallel-group, placebo-controlled trial to evaluate the safety, efficacy and dose response of two concentrations of ATI-502 for the treatment of AA. Topline data from the AA-201 Topical trial are expected in the second quarter of 2019.

BGB324 - BerGenBio

BerGenBio is conducting Phase 1/2 studies with BGB324 (bemcentinib), a first-in-class selective AXL kinase inhibitor, as a single agent in relapsed acute myeloid leukemia (AML) and myelodysplastic syndrome (MDS); and in combination with erlotinib (Tarceva®) in advanced (EGFR-positive) non-small-cell lung carcinoma. BerGenBio is also conducting Phase 2 studies with BGB324 in combination with KEYTRUDA® (pembrolizumab) in non-small cell adenocarcinoma of the lung and triple negative breast cancer in collaboration with another company. In October 2018, BerGenBio announced that the first patient had been dosed in the second stage of the Phase 2 studies in BGB324 in combination with KEYTRUDA®.

DS-3032 - Daiichi

DS-3032 is an investigational oral selective inhibitor of the murine double minute 2 (MDM2) protein currently being investigated by Daiichi in three Phase 1 clinical trials for solid and hematological malignancies including AML, acute lymphocytic leukemia, chronic myeloid leukemia in blast phase, lymphoma and MDS.

Preliminary safety and efficacy data from a Phase 1 study of DS-3032 suggests that DS-3032 may be a promising treatment for hematological malignancies including relapsed/refractory AML and high-risk MDS. Evaluation of additional dosing schedules of DS-3032 is underway and combination studies with fostamatinib are currently being conducted by Daiichi.

AZ-D0449 – AZ

AZ is currently conducting a Phase 1 study in healthy volunteers and patients with mild asthma to investigate the safety, anti-inflammatory effect of inhaled AZ-D0449. The study, which follows the single and multiple ascending doses, is currently recruiting patients.

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Research/Preclinical Programs

We are conducting proprietary research in the broad disease areas of inflammation/immunology, immuno-oncology and cancers. Within these disease areas, our researchers are investigating mechanisms of action as well as screening compounds against potential novel targets and optimizing those leads that appear to have the greatest potential.

Sponsored Research and License Agreements

We conduct research and development programs independently and in connection with our corporate collaborators. As of December 31, 2018, we are a party to a collaboration agreement with ongoing performance obligations, with Kissei for the development and commercialization of fostamatinib in Japan, China, Taiwan and the Republic of Korea. As of December 31, 2018, we are also a party to collaboration agreements, but do not have ongoing performance obligations with Aclaris for the development and commercialization of JAK inhibitors for the treatment of AA and other dermatological conditions, AZ for the development and commercialization of R256, an inhaled JAK inhibitor, BerGenBio for the development and commercialization of AXL inhibitors in oncology, and Daiichi to pursue research related to MDM2 inhibitors, a novel class of drug targets called ligases. All of the abovementioned agreements fall under the scope of Accounting Standards Codification (ASC) Topic 808, Collaboration Arrangements, but are accounted for following ASC Topic 606, Revenue From Contracts with Customers, as allowed under ASC Topic 808.

Under these agreements, which we entered into in the ordinary course of business, we received or may be entitled to receive upfront cash payments, payments contingent upon specified events achieved by such partners and royalties on any net sales of products sold by such partners under the agreements. Total future contingent payments to us under all of these agreements could exceed $369.9 million if all potential product candidates achieved all of the payment triggering events under all of our current agreements (based on a single product candidate under each agreement). Of this amount, up to $58.0 million relates to the achievement of development events, up to $220.6 million relates to the achievement of regulatory events and up to $91.3 million relates to the achievement of certain commercial or launch events. This estimated future contingent amount does not include any estimated royalties that could be due to us if the partners successfully commercialize any of the licensed products. Future events that may trigger payments to us under the agreements are based solely on our partners' future efforts and achievements of specified development, regulatory and/or commercial events.

Kissei License Agreement

In October 2018, we entered into an exclusive license and supply agreement with Kissei to develop and commercialize fostamatinib in all current and potential indications in Japan, China, Taiwan and the Republic of Korea. Kissei is responsible for performing and funding all development activities for fostamatinib in the above-mentioned territories. We received an upfront cash payment of $33.0 million with the potential for up to an additional $147.0 million in development, regulatory and commercial milestone payments, and will receive mid to upper twenty percent, tiered, escalated net sales-based payments for the supply of fostamatinib. Under the agreement, we are obligated to grant Kissei the license rights on fostamatinib on the territories above, as well as supply Kissei

with drug product for use in clinical trials and pre-commercialization activities. We remain responsible for the manufacture and supply of fostamatinib for all development and commercialization activities under the agreement.

We accounted for this agreement following ASC 606 and identified the following distinct performance obligations at inception of the agreement namely: (a) granting of the license, (b) supply of fostamatinib for clinical use and (c) material right associated with discounted fostamatinib that are supplied for use other than clinical or commercial. We concluded that the granting of the license is distinct relative to the other performance obligations. Moreover, we determined that the upfront fee of $33.0 million represents the transaction price and was allocated to the performance obligations based on our best estimate of the relative standalone selling price as follows: (a) for the license, we estimated the standalone selling price using the adjusted market assessment approach to estimate its standalone selling price in the licensed territories; (b) for the supply of fostamatinib and the material right associated with discounted fostamatinib, we estimated the standalone selling price using the cost plus expected margin approach. Variable consideration of $147.0 million related to future development and regulatory milestones was fully constrained due to the fact that it was probable that a significant reversal of cumulative revenue would occur, given the inherent uncertainty of success with

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these future milestones. We will recognize revenues related to the supply of fostamatinib and material right upon delivery of fostamatinib to Kissei. For sales-based milestones and royalties, we determined that the license is the predominant item to which the royalties or sales-based milestones relate to. Accordingly, we will 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 has been allocated has been satisfied (or partially satisfied). We will re-evaluate the transaction price in each reporting period and as uncertain events are resolved or other changes in circumstances occur.

As of December 31, 2018, we have granted Kissei the license rights over fostamatinib. Accordingly, we recognized $30.6 million of the $33.0 million upfront fee as allocated revenue for the delivered license during the year ended December 31, 2018. At December 31, 2018, performance obligations related to the supply of fostamatinib and material right associated with discounted fostamatinib supply have not yet been satisfied. Accordingly, as of December 31, 2018, the allocated transaction price of $2.4 million on these two unsatisfied performance obligations were recorded as deferred revenue in the balance sheet.

BMS Collaboration Agreement

In February 2015, we entered into a collaboration agreement with Bristol- Myers Squibb Company (BMS) for the discovery, development and commercialization of cancer immunotherapies based on our extensive portfolio of small molecule TGF beta receptor kinase inhibitors. Under the collaboration agreement, BMS will have exclusive rights and will be solely responsible for the clinical development and commercialization of any products. Pursuant to the collaboration agreement with BMS, we received a noncreditable and non-refundable upfront payment of $30.0 million in March 2015. We were also entitled to receive development and regulatory contingent fees that could exceed $309.0 million for a successful compound approved in certain indications. In addition, we were eligible to receive tiered royalties on the net sales of any products from the collaboration. BMS also agreed to reimburse us for agreed upon costs based on a contractual cost per full-time equivalent employee in connection with the performance of research activities during the research term. Under the collaboration agreement, we were obligated to provide the following deliverables: (i) granting of license rights to our program, (ii) participation in the Joint Research Committee, and (iii) performance of research activities. We concluded that these deliverables were a single unit of accounting as the license did not have stand-alone value apart from the other deliverables. Accordingly, the $30.0 million upfront payment was recognized ratably as revenue from the effective date of the agreement and was fully amortized in September 2016, the end of the research term. We believed that straight-line recognition of this revenue was appropriate as the research was performed ratably over the research period. During the year ended December 31, 2016, we recognized revenue of $13.4 million relating to the upfront payment and $290,000 and relating to the research activities we performed. As of September 30, 2016, all deliverables under the agreement had been delivered. In November 2016, we were notified by BMS that it has designated one compound as an early drug candidate and received $3.0 million in December 2016, triggered by this development event. In July 2018, BMS notified us that they will discontinue their participation in the preclinical collaboration of cancer immunotherapies based on our small molecule TGF beta receptor kinase inhibitors which originally commenced in 2015. The agreement was terminated in August 2018.

BerGenBio License Agreement

In June 2011, we entered into an exclusive license agreement with BerGenBio, pursuant to which BerGenBio has exclusive rights for the development and commercialization of an oncology program. Pursuant to the agreement, we are entitled to receive milestone and royalty payments in certain circumstances, and revenue share payments in certain circumstances. Where the revenue share payment provisions are triggered, the milestone and royalty payment provisions cease to be applicable. BerGenBio is responsible for all activities it wishes to perform under the license we granted to it. In February 2017, we received $3.3 million from BerGenBio as a result of BerGenBio advancing BGB324, an AXL kinase inhibitor licensed under the agreement, to a Phase 2 clinical study. In June 2016, we received contingent payments of $1.7 million relating to a time-based non-refundable fee and $2.0 million relating to BerGenBio's exercise of certain option rights before the prescription period to exercise the rights expired. All deliverables under the agreement had been previously delivered, as such, the above payments of $3.3 million in 2017 and $3.7 million in 2016, triggered by the above time-based and contingent events were recognized as revenue during the years ended December 31, 2017 and 2016, respectively.

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In September 2018, BerGenBio served us with a notice of arbitration seeking declaratory relief related to the interpretation of provisions under the license agreement, particularly as they relate to the rights and obligations of the parties in the event of the license or sale of a product by BerGenBio and/or the sale of BerGenBio to a third party. The arbitration panel dismissed four of the six declarations sought by BerGenBio, and we thereafter consented to one of the remaining declarations requested by BerGenBio. On February 27, 2019, the arbitration panel issued a determination granting the declaration sought by BerGenBio on the remaining issue, and held that in the event of a sale of shares by BerGenBio's shareholders where there is no monetary benefit to BerGenBio, we would not be entitled to a portion of the proceeds from such a sale. In this circumstance, where the revenue share is not triggered, the milestone and royalty payment provisions remain in effect. We are still reviewing this determination. We believe the determination will not have a material adverse effect on our operations, cash flows or financial condition.

Our Discovery Engine

The approaches that we use in connection with both our proprietary product development programs and our corporate collaborations are designed to identify protein targets for compound screening and validate the role of those targets in the disease process. Unlike genomics based approaches, which begin by identifying genes and then searching for their functions, our approach identifies proteins that are demonstrated to have an important role in a specific disease pathway. By understanding the disease pathway, we attempt to avoid studying genes that will not make good drug targets and focus only on the subset of expressed proteins of genes that we believe are specifically implicated in the disease process.

We begin by developing assays that model the key events in a disease process at the cellular level. We then identify potential protein targets. In addition, we identify the proteins involved in the intracellular process and prepare a map of their interactions, thus giving us a comprehensive picture of the intracellular disease pathway. We believe that our approach has a number of advantages, including:

- improved target identification: it focuses only on the subset of expressed proteins of genes believed to be specifically implicated in the disease process;
- rapid validation of protein targets: it produces validated protein targets quickly because it uses key events in the disease process as the basis to design the functional, disease based screen;
- improved disease pathway mapping: it produces a comprehensive map of the intracellular disease pathway, enabling the identification of a large number of potential protein targets;
- informed target selection: it provides a variety of different types of targets and information concerning the role each plays in their endogenous state to better select targets more susceptible to pharmaceutical intervention;
- efficient compound screening: it increases the probability and speed with which compound screening will identify "hits" because it provides detailed knowledge of the target that can be used to guide the design of the compound screen; and
- risk reduction: it may reduce the risk of failure in the product development process due to serious side effects, including toxicity or other reasons, by selecting only targets that are specific to the disease in question and that have no apparent role in other cell types or signaling pathways.

Because of the very large numbers of screens employed, our technology is labor intensive. The complexity of our technology requires a high degree of skill and diligence to perform successfully. We believe we have been and will continue to be able to meet these challenges successfully and increase our ability to identify targets for drug discovery.

Pharmacology and Preclinical Development

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We believe that the rapid characterization and optimization of compounds identified in high throughput screening (HTS) will generate high quality preclinical development candidates. Our pharmacology and preclinical development group facilitates lead optimization by characterizing lead compounds with respect to pharmacokinetics, potency, efficacy and selectivity. The generation of proof of principle data in animals and the establishment of standard pharmacological models with which to assess lead compounds represent integral components of lead optimization. As programs move through the lead optimization stage, our pharmacology and preclinical development groups support our chemists and biologists by performing the necessary studies, including toxicology, for IND application submissions.

Clinical Development

We have assembled a team of experts in drug development to design and implement clinical trials and to analyze the data derived from these trials. The clinical development group possesses expertise in project management and regulatory affairs. We work with external clinical research organizations with expertise in managing clinical trials, drug formulation, and the manufacture of clinical trial supplies to support our drug development efforts.

Intellectual Property

We are able to protect our technology from unauthorized use by third parties only to the extent that it is covered by valid and enforceable patents or is effectively maintained as a trade secret. Accordingly, patents and other proprietary rights are an essential element of our business. As of December 31, 2018, we had 60 pending patent applications and 386 issued and active patents in the United States, as well as corresponding pending foreign patent applications and issued foreign patents. Our policy is to file patent applications to protect technology, inventions and improvements to inventions that are commercially important to the development of our business. We seek U.S. and international patent protection for a variety of technologies, including new screening methodologies and other research tools, target molecules that are associated with disease states identified in our screens, and lead compounds that can affect disease pathways. We also intend to seek patent protection or rely upon trade secret rights to protect other technologies that may be used to discover and validate targets and that may be used to identify and develop novel drugs. We seek protection, in part, through confidentiality and proprietary information agreements. We are a party to various license agreements that give us rights to use technologies in our research and development

We currently hold a number of issued patents in the United States, as well as corresponding applications that allow us to pursue patents in other countries, some of which have been allowed and/or granted and others of which we expect to be granted. Specifically, in most cases where we hold a U.S. issued patent, the subject matter is covered at least by an application filed under the Patent Cooperation Treaty (PCT), which is then used or has been used to pursue protection in certain countries that are members of the treaty. Our patents extend for varying periods according to the date of patent filing or grant and the legal term of patents in the various countries where patent protection is obtained. Some of these patents may be eligible for patent term extensions, depending on their subject matter and length of time required to conduct clinical trials. Our material patents relate to fostamatinib, an oral SYK inhibitor, that is the active pharmaceutical ingredient in TAVALISSE, and R406, the active metabolite of fostamatinib. These patents will expire in 2023, 2026, 2028, 2030, 2031, 2032 and 2034.

Fostamatinib. Fostamatinib is covered as a composition of matter in a U.S. issued patent that has an expected expiration date of September 2031, after taking into account a patent term adjustment and extension rules. Fostamatinib is also covered under broader composition of matter claims in a U.S. issued patent that has an expiration date in March 2026, after taking into account a patent term adjustment. Additional patents covering fostamatinib composition of matter, methods for use, formulations, methods for making and intermediates expire in 2023, 2026, 2028, 2030, 2032 and 2034. Corresponding applications have been filed in foreign jurisdictions under the PCT, and are at various stages of prosecution. Of note, a patent covering fostamatinib as a composition of matter and in compositions for use treating various diseases has been granted by the European Patent Office.

R406. R406 is covered as a composition of matter in a U.S. issued patent and, with a patent term adjustment, has an expiration date in February 2025. R406 is also covered under two broader composition of matter patents issued in the U.S. expiring in February 2023 and July 2024. Methods of using R406 to treat various indications and compositions of matter covering certain intermediates used to make R406 are also covered under patents described above. Corresponding applications have been filed in foreign jurisdictions under the PCT and are at various stages of

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prosecution.

Competition

The biotechnology and pharmaceutical industries are intensely competitive and subject to rapid and significant technological change. Many of the drugs that we are attempting to discover will be competing with existing therapies. In addition, a number of companies are pursuing the development of pharmaceuticals that target the same diseases and conditions that we are targeting.

There are existing therapies and drug candidates in development for the treatment of ITP that may be alternative therapies to TAVALISSE. Currently, corticosteriods remain the most common first line therapy for ITP, occasionally in conjunction with intravenous immuglobulin (IVIg) or anti-Rh(D) as added agents to help further augment platelet count recovery, particularly in emergency situations. However, it has been estimated that frontline agents lead to durable remissions in only a small percentage of newly-diagnosed adults with ITP. Moreover, concerns with steroid-related side effects often restrict therapy to approximately four weeks. As such, many patients progress to persistent or chronic ITP, requiring other forms of therapeutic intervention.

Other approaches to treat ITP are varied in their mechanism of action, and there is no consensus about the sequence of their use, according to the most recent ITP guideline from the American Society of Hematology. Options include splenectomy, TPO-RAs and various immunosuppressants (such as rituximab). The response rate criteria of the above-mentioned options vary, precluding a comparison of response rates for individual therapies.

Even with the above treatment options, a significant number of patients remain severely thrombocytopenic for long durations and are subject to risk of spontaneous or trauma-induced hemorrhage. The addition of fostamatinib to the treatment options could be beneficial since it has a different mechanism of action than the TPO agonists. Fostamatinib is a potent and relatively selective SYK inhibitor, and its inhibition of Fc receptors and B-cell receptors signaling pathways make it a potentially broad immunomodulatory agent.

Other products in the U.S. that are approved by the FDA to increase platelet production through binding and TPO receptors on megakaryocyte precursors include PROMACTA® (Novartis) and Nplate® (Amgen, Inc.).

We face, and will continue to face, intense competition from pharmaceutical and biotechnology companies, as well as from academic and research institutions and government agencies, both in the United States and abroad. Some of these competitors are pursuing the development of pharmaceuticals that target the same diseases and conditions as our research programs. Our major competitors include fully integrated pharmaceutical companies that have extensive drug discovery efforts and are developing novel small molecule pharmaceuticals. We also face significant competition from organizations that are pursuing the same or similar technologies, including the discovery of targets that are useful in compound screening, as the technologies used by us in our drug discovery efforts.

Competition may also arise from:

- new or better methods of target identification or validation;
- other drug development technologies and methods of preventing or reducing the incidence of disease;
- new small molecules; or
- other classes of therapeutic agents.

Our competitors or their collaborative partners may utilize discovery technologies and techniques or partner with collaborators in order to develop products more rapidly or successfully than we or our collaborators are able to do. Many of our competitors, particularly large pharmaceutical companies, have substantially greater financial, technical and human resources and larger research and development staffs than we do. In addition, academic institutions, government agencies and other public and private organizations conducting research may seek patent protection with respect to

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potentially competitive products or technologies and may establish exclusive collaborative or licensing relationships with our competitors.

We believe that our ability to compete is dependent, in part, upon our ability to create, maintain and license scientifically advanced technology and upon our and our collaborators' ability to develop and commercialize pharmaceutical products based on this technology, as well as our ability to attract and retain qualified personnel, obtain patent protection or otherwise develop proprietary technology or processes and secure sufficient capital resources for the expected substantial time period between technological conception and commercial sales of products based upon our technology. The failure by any of our collaborators or us, including our commercial team, in any of those areas may prevent the successful commercialization of our potential drug targets.

Many of our competitors, either alone or together with their collaborative partners, have significantly greater experience than we do in:

· identifying and validating targets;
· screening compounds against targets; and
· undertaking preclinical testing and clinical trials.

Accordingly, our competitors may succeed in obtaining patent protection, identifying or validating new targets or discovering new drug compounds before we do.

Our competitors might develop technologies and drugs that are more effective or less costly than any that are being developed by us or that would render our technology and product candidates obsolete and noncompetitive. In addition, our competitors may succeed in obtaining the approval of the FDA or other regulatory agencies for product candidates more rapidly. Companies that complete clinical trials, obtain required regulatory agency approvals and commence commercial sale of their drugs before us may achieve a significant competitive advantage, including certain patent and FDA marketing exclusivity rights that would delay or prevent our ability to market certain products. Any drugs resulting from our research and development efforts, or from our joint efforts with our existing or future collaborative partners, might not be able to compete successfully with competitors' existing or future products or obtain regulatory approval in the United States or elsewhere.

We face and will continue to face intense competition from other companies for commercial and collaborative arrangements with pharmaceutical and biotechnology companies, for establishing relationships with academic and research institutions and for licenses to additional technologies. These competitors, either alone or with their collaborative partners, may succeed in developing technologies or products that are more effective than ours.

Our ability to compete successfully will depend, in part, on our ability to:

· identify and validate targets;
· discover candidate drug compounds that interact with the targets we identify;
· attract and retain scientific and product development personnel;
· obtain patent or other proprietary protection for our new drug compounds and technologies; and
· enter commercialization agreements for our new drug compounds.

Operating Expenses

A significant portion of our operating expenses in 2018 is related to our commercial launch activities for TAVALISSE and research and development activities. Specifically, our marketing and sales efforts is focused on targeting hematologists and hematologist-oncologists in the United States, who manage chronic adult ITP patients. To support these efforts, we have hired experienced commercial professionals, including sales representatives in the

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hematology area, and commercial operations, marketing, and market access professionals. In the ordinary course of business, we also entered into contractual agreements with third parties to support our commercial activities. Additionally, we intend to maintain our strong commitment to research and development. We plan to develop and commercialize fostamatinib for possible additional indications, including AIHA. See “Item 8. Financial Statements and Supplementary Data” of this Annual Report on Form 10 K for costs and expenses related to research and development, and other financial information for each of the fiscal years 2018, 2017 and 2016.

Government Regulation

Government authorities in the United States, at the federal, state and local level, and in other countries and jurisdictions, extensively regulate, among other things, the research, development, testing, manufacture, quality control, approval, packaging, storage, recordkeeping, labeling, advertising, promotion, distribution, marketing, sales, post-approval monitoring and reporting, and import and export of pharmaceutical products. The processes for obtaining regulatory approvals in the United States and in foreign countries and jurisdictions, along with subsequent compliance with applicable statutes and regulations, require the expenditure of substantial time and financial resources.

Review and Approval of Drugs in the United States

In the United States, the FDA approves and regulates drugs under the Federal Food, Drug, and Cosmetic Act, or FDCA, and implementing regulations. The failure to comply with requirements under the FDCA and other applicable laws at any time during the product development process, approval process or after approval may subject an applicant and/or sponsor to a variety of administrative or judicial sanctions, including refusal by the FDA to approve pending applications, withdrawal of an approval, imposition of a clinical hold, issuance of warning letters and other types of letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, restitution, disgorgement of profits, or civil or criminal investigations and penalties.

A drug product candidate must be approved by the FDA through the new drug application, or NDA. An applicant seeking approval to market and distribute a new drug product in the United States must typically undertake the following:

- completion of preclinical laboratory tests, animal studies and formulation studies in compliance with the FDA’s good laboratory practice, or GLP, regulations;
- submission to the FDA of an Investigational New Drug (IND), which must take effect before human clinical trials may begin;
- approval by an independent institutional review board, or IRB, for each clinical site before each clinical trial may be initiated;
- performance of adequate and well-controlled human clinical trials in accordance with good clinical practices, or GCP, to establish the safety and efficacy of the proposed drug product for each indication;
- preparation and submission to the FDA of an NDA requesting marketing for one or more proposed indications;
- review by an FDA advisory committee, if requested by the FDA;
- satisfactory completion of one or more FDA inspections of the manufacturing facility or facilities at which the product, or components thereof, are produced to assess compliance with current Good Manufacturing Practices, or cGMP, requirements and to assure that the facilities, methods and controls are adequate to preserve the product’s identity, strength, quality and purity;
- satisfactory completion of FDA audits of clinical trial sites to assure compliance with GCPs and the integrity of the clinical data;

· payment of user fees and securing FDA approval of the NDA; and

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- compliance with any post-approval requirements, including the potential requirement to implement a Risk Evaluation and Mitigation Strategy, or REMS, and potentially post-market requirement, or PMR, and commitment, or PMC, studies.

Before an applicant begins testing a compound with potential therapeutic value in humans, the drug candidate enters the preclinical testing stage. Preclinical studies include laboratory evaluation as well as in vitro and animal studies to assess the safety and activity of the drug for initial testing in humans and to establish a rationale for therapeutic use. The results of the preclinical tests, together with manufacturing information, analytical data, any available clinical data or literature and plans for clinical studies, among other things, are submitted to the FDA as part of an IND. Some long-term preclinical testing, such as animal tests of reproductive adverse events and carcinogenicity, and long term toxicity studies, may continue after the IND is submitted.

In support of the IND, applicants must submit a protocol for each clinical trial and any subsequent protocol amendments. In addition, the results of the preclinical tests, together with manufacturing information, analytical data, any available clinical data or literature, among other things, are submitted to the FDA as part of an IND. The FDA requires a 30-day waiting period after the submission of each IND before clinical trials may begin. At any time during this 30-day period, or thereafter, the FDA may raise concerns or questions about the conduct of the trials as outlined in the IND and impose a clinical hold or partial clinical hold. In this case, the IND sponsor and the FDA must resolve any outstanding concerns before clinical trials can begin or resume. An IRB representing each institution participating in the clinical trial must review and approve the plan for any clinical trial before it commences at that institution, and the IRB must conduct continuing review and reapprove the study at least annually. An IRB can suspend or terminate approval of a clinical trial.

Clinical trials involve the administration of the investigational product to human subjects under the supervision of qualified investigators in accordance with GCP requirements, which include, among other things, the requirement that all research subjects provide their informed consent in writing before their participation in any clinical trial. Human clinical trials are typically conducted in sequential phases, which may overlap or be combined:

- Phase 1. The drug is initially introduced into a small number of healthy human subjects or, in certain indications such as cancer, patients with the target disease or condition and tested for safety, dosage tolerance, absorption, metabolism, distribution, excretion and, if possible, to gain an early indication of its effectiveness and to determine optimal dosage.
- Phase 2. The drug is administered to a limited patient population to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product for specific targeted diseases and to determine dosage tolerance and optimal dosage.
- Phase 3. These clinical trials are commonly referred to as “pivotal” studies, which denote a study that presents the data that the FDA or other relevant regulatory agency will use to determine whether or not to approve a drug. The drug is administered to an expanded patient population, generally at geographically dispersed clinical trial sites, in well-controlled clinical trials to generate enough data to statistically evaluate the efficacy and safety of the product for approval, identify adverse effects, establish the overall risk-benefit profile of the product and to provide adequate information for the labeling of the product.
- Phase 4. Post-approval studies may be conducted after initial marketing approval. These studies are used to gain additional experience from the treatment of patients in the intended therapeutic indication.

The FDA or the sponsor or the data monitoring committee may suspend or terminate a clinical trial at any time on various grounds, including a finding that the research subjects are being exposed to an unacceptable health risk.

Review of an NDA by the FDA

If clinical trials are successful, the next step in the drug development process is the preparation and submission to the FDA of a NDA. The NDA is the vehicle through which drug applicants formally propose that the FDA approve a new drug for marketing and sale in the United States for one or more indications. The NDA must contain a description of the manufacturing process and quality control methods, as well as results of preclinical tests, toxicology studies, clinical trials and proposed labeling, among other things. The submission of most NDAs is subject to an application user fee and

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the sponsor of an approved NDA is also subject to annual product and establishment user fees. These fees are typically increased annually.

Following submission of an NDA, the FDA conducts a preliminary review of an NDA to determine whether the application is sufficiently complete to permit substantive review. Once the submission is accepted for filing, the FDA begins an in-depth substantive review. The FDA has agreed to goals to review and act within ten months from filing for standard review NDAs and within six months for NDAs that have been designated for “priority review”.

Before approving an NDA, the FDA typically will inspect the facility or facilities where the product is or will be manufactured. The FDA will not approve an application unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications. Additionally, before approving an NDA, the FDA will typically inspect one or more clinical sites to assure compliance with GCP. In addition, as a condition of approval, the FDA may require an applicant to develop a REMS. REMS use risk minimization strategies beyond the professional labeling to ensure that the benefits of the product outweigh the potential risks. To determine whether a REMS is needed, the FDA will consider the size of the population likely to use the product, seriousness of the disease, expected benefit of the product, expected duration of treatment, seriousness of known or potential adverse events, and whether the product is a new molecular entity.

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

On the basis of the FDA’s evaluation of the NDA and accompanying information, including the results of the inspection of the manufacturing facilities, the FDA may issue an approval letter or a complete response letter. An approval letter authorizes commercial marketing of the product with specific prescribing information for specific indications. A complete response letter generally outlines the deficiencies in the submission and may require substantial additional testing or information in order for the FDA to reconsider the application. If and when those deficiencies have been addressed to the FDA’s satisfaction in a resubmission of the NDA, the FDA will issue an approval letter.

If the FDA approves a product, it may limit the approved indications for use for the product, require that contraindications, warnings or precautions be included in the product labeling, require that post-approval studies, including Phase 4 clinical trials, be conducted to further assess the drug’s safety after approval, require testing and surveillance programs to monitor the product after commercialization, or impose other conditions, including distribution restrictions or other risk management mechanisms, including REMS, which can materially affect the potential market and profitability of the product. The FDA may prevent or limit further marketing of a product based on the results of post-market studies or surveillance programs. After approval, many types of changes to the approved product, such as adding new indications, manufacturing changes and additional labeling claims, are subject to further testing requirements and FDA review and approval.

Post-Approval Requirements

Drugs manufactured or distributed pursuant to FDA approvals are subject to pervasive and continuing regulation by the FDA, including, among other things, requirements relating to recordkeeping, periodic reporting, product sampling and distribution, advertising and promotion and reporting of adverse experiences with the product. After approval, most changes to the approved product, such as adding new indications or other labeling claims, are subject to prior

FDA review and approval. In addition, drug manufacturers and other entities involved in the manufacture and distribution of approved drugs are required to register their establishments with the FDA and state agencies, and are subject to periodic unannounced inspections by the FDA and these state agencies for compliance with cGMP requirements. Changes to the manufacturing process are strictly regulated and often require prior FDA approval before being implemented. FDA regulations also require investigation and correction of any deviations from cGMP and impose reporting and documentation requirements upon the sponsor and any third-party manufacturers that the sponsor may decide to use. Accordingly, manufacturers must continue to expend time, money, and effort in the area of production and quality control to maintain cGMP compliance.

Once an approval is granted, the FDA may withdraw the approval if compliance with regulatory requirements and

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standards is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in revisions to the approved labeling to add new safety information; imposition of post-market studies or clinical trials to assess new safety risks; or imposition of distribution or other restrictions under a REMS program.

The FDA strictly regulates marketing, labeling, advertising and promotion of products that are placed on the market. Drugs may be promoted only for the approved indications and in accordance with the provisions of the approved label. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses, and a company that is found to have improperly promoted off-label uses may be subject to significant liability.

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

Orphan Drug Designation and Exclusivity

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

If a product with orphan designation receives the first FDA approval for the disease or condition for which it has such designation, the product generally will receive orphan drug exclusivity. Orphan drug exclusivity means that the FDA may not approve another sponsor’s marketing application for the same drug for the same indication for seven years, except in certain limited circumstances. Orphan exclusivity does not block the approval of a different drug for the same rare disease or condition, nor does it block the approval of the same drug for different indications. If a drug designated as an orphan drug ultimately receives marketing approval for an indication broader than what was designated in its orphan drug application, it may not be entitled to exclusivity. Orphan exclusivity will not bar approval of another product under certain circumstances, including if a subsequent product with the same drug for the same indication is shown to be clinically superior to the approved product on the basis of greater efficacy or safety, or providing a major contribution to patient care, or if the company with orphan drug exclusivity is not able to meet market demand.

Pharmaceutical Coverage, Pricing and Reimbursement

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. Third-party payors include federal and state government health programs such as Medicare and Medicaid, commercial health insurers, managed care organizations, and other organizations. Significant uncertainty exists as to the coverage and reimbursement status of products approved by the FDA and other government authorities. For example, there have been several recent U.S. Congressional inquiries and proposed federal legislation designed to, among other things, bring more transparency to drug pricing, review the relationship

between pricing and manufacturer patient programs, reduce the cost of drugs under Medicare, and reform government program reimbursement methodologies for drugs. Further, Congress and the Trump administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, to encourage importation from other countries and bulk purchasing. Thus, even if a product candidate is approved, sales of the product will depend, in part, on the

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extent to which third-party payors provide coverage and establish adequate reimbursement levels for the product. It is likely that additional state and federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in reduced demand for a pharmaceutical manufacturer's products or additional pricing pressure.

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

The containment of healthcare costs also has become a priority of federal, state and foreign governments and the prices of drugs have been a focus in this effort. Governments have shown significant interest in implementing cost-containment programs, including price controls, restrictions on reimbursement and requirements for substitution of generic products. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit a company's revenue generated from the sale of any approved products. Coverage policies and third-party reimbursement rates may change at any time. Even if favorable coverage and reimbursement status is attained for one or more products for which a company or its collaborators receive marketing approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

Healthcare Law and Regulation

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

- the federal Anti-Kickback Statute, which prohibits, among other things, persons and entities from knowingly and willfully soliciting, offering, paying, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made, in whole or in part, under a federal healthcare program such as Medicare and Medicaid. The term "remuneration" has been broadly interpreted to include anything of value. The intent standard under the federal Anti-Kickback Statute was amended by the Patient Protection and Affordable Care Act and the Health Care and Education Reconciliation Act, or the Affordable Care Act, to a stricter standard such that a person or entity no longer needs to have actual knowledge of the statute or specific intent to violate it, in order to have committed a violation. Moreover, the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal civil False Claims Act;

- the federal civil and criminal false claims laws, including the civil False Claims Act, and civil monetary penalties laws, which prohibit individuals or entities from, among other things, knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false, fictitious or fraudulent or knowingly making, using or causing to made or used a false record or statement to avoid, decrease or conceal an obligation to pay money to the federal government.

- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which imposes criminal and civil liability for, among other things, executing or attempting to execute a scheme to defraud any healthcare benefit program, including any third-party payors, knowingly and willfully embezzling or

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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 statements or representations, or making false statements relating to healthcare benefits, items or services. Similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it to have committed a violation;

- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, and their respective implementing regulations, which impose obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information, including PHI. HITECH also created new tiers of civil monetary penalties, amended HIPAA to make civil and criminal penalties directly applicable to business associates, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce HIPAA laws and seek attorneys' fees and costs associated with pursuing federal civil actions;

- the federal transparency requirements known as the federal Physician Payments Sunshine Act, which requires certain manufacturers of drugs, devices, biologics and medical supplies to report annually to the Centers for Medicare & Medicaid Services, or CMS, within the United States Department of Health and Human Services, information related to payments and other transfers of value made by that entity to physicians and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members; and

- analogous state and foreign laws and regulations, such as state anti-kickback and false claims laws, which may apply to sales or marketing arrangements and claims involving healthcare items or services that are reimbursed by non-governmental third-party payors, including private insurers.

Some state, local and foreign laws require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government, restrict payments that may be made to healthcare providers and other potential referral sources, and/or require drug manufacturers to report information related to payments and transfers of value made to physicians and other health care providers or entities or marketing expenditures. In addition, there are local laws that require the licensure of sales representatives; state laws that require drug manufacturers to report information related to drug pricing; data privacy and security laws and regulations in foreign jurisdictions that may be more stringent than those in the United States (such as the European Union (E.U.), which adopted the General Data Protection Regulation, which became effective in May 2018); state laws governing 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 effect, thus complicating compliance efforts; and state laws related to insurance fraud in the case of claims involving private insurers.

Efforts to ensure that our business arrangements will comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental and enforcement authorities will conclude that our business practices may not comply with current or future statutes, regulations or case law interpreting applicable fraud and abuse or other healthcare laws and regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of civil, criminal and administrative penalties, damages, disgorgement, monetary fines, individual imprisonment, additional reporting obligations and oversight if we become subject to a corporate integrity agreement or other agreement to resolve allegations of non-compliance with these laws, possible exclusion from participation in federal healthcare programs, contractual damages, reputational harm, diminished profits and future earnings, and curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations.

Healthcare Reform

The United States and state governments continue to propose and pass legislation designed to reduce the cost of healthcare. In March 2010, the United States Congress enacted the Affordable Care Act which included changes to the

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coverage and payment for drug products under government health care programs. Some of the provisions of the Affordable Care Act have yet to be implemented, and there have been judicial and Congressional challenges to certain aspects of the Affordable Care Act, as well as recent efforts by the Trump administration to repeal or replace certain aspects of the Affordable Care Act. Since January 2017, President Trump has signed two Executive Orders designed to delay the implementation of certain provisions of the Affordable Care Act or otherwise circumvent some of the requirements for health insurance mandated by the Affordable Care Act. Concurrently, Congress has considered legislation that would repeal or repeal and replace all or part of the Affordable Care Act. While Congress has not passed comprehensive repeal legislation, two bills affecting the implementation of certain taxes under the Affordable Care Act have been enacted. The Tax Cuts and Jobs Act of 2017 includes a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by the Affordable Care Act on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the “individual mandate”. On January 22, 2018, President Trump signed a continuing resolution on appropriations for fiscal year 2018 that delayed the implementation of certain mandated fees under the Affordable Care Act, 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. In July 2018, CMS published a final rule permitting further collections and payments to and from certain Affordable Care Act qualified health plans and health insurance issuers under the Affordable Care Act risk adjustment program in response to the outcome of federal district court litigation regarding the method CMS uses to determine this risk adjustment. On December 14, 2018, a U.S. District Court Judge in the Northern District of Texas ruled that the individual mandate is a critical and inseverable feature of the Affordable Care Act, and because it was repealed as part of the Tax Act, the remaining provisions of the Affordable Care Act are invalid as well. While neither the Texas District Court Judge, Trump administration nor CMS have stated that the ruling will have an immediate effect, it is unclear how this decision, subsequent appeals, if any, and other efforts will impact the Affordable Care Act.

Outside the United States, ensuring adequate coverage and payment for our products will face challenges. Pricing of prescription pharmaceuticals is subject to governmental control in many countries. Pricing negotiations with governmental authorities can extend well beyond the receipt of regulatory approval for a product and may require us to conduct a clinical trial that compares the cost effectiveness of our product candidates or products to other available therapies. The conduct of such a clinical trial could be expensive and result in delays in our commercialization efforts. Third-party payors are challenging the prices charged for medical products and services, and many third-party payors limit reimbursement for newly-approved health care products. Recent budgetary pressures in many E.U. countries are also causing governments to consider or implement various cost-containment measures, such as price freezes, increased price cuts and rebates. If budget pressures continue, governments may implement additional cost-containment measures. Cost-control initiatives could decrease the price we might establish for products that we may develop or sell, which would result in lower product revenues or royalties payable to us. 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.

Manufacturing and Raw Materials

We do not own or operate manufacturing or distribution facilities or resources for clinical or commercial production and distribution of our product for commercial use or for preclinical and clinical trials. We assign internal personnel to manage and oversee third parties working on our behalf under contract. These third parties manufacture raw materials, the active pharmaceutical ingredient, or API, and finished drug product for commercial distribution and for use in clinical studies. We currently rely on, and will continue to rely on these third-party contract manufacturers to produce sufficient quantities of our products.

Employees

As of December 31, 2018, we had 158 employees. None of our employees are represented by a collective bargaining arrangement, and we believe our relationship with our employees is good. Recruiting and retaining experienced and qualified sales and marketing personnel to successfully commercialize our product and scientific personnel to continue to perform research and development work in the future will be critical to our business success. We may not be able to attract and retain personnel on acceptable terms given the competition among pharmaceutical and

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biotechnology companies, academic and research institutions and government agencies for experienced scientists.

Scientific and Medical Advisors

We utilize scientists, key opinion leaders and physicians to advise us on scientific and medical matters as part of our ongoing research and product development efforts, including experts in clinical trial design, preclinical development work, chemistry, biology, immunology, oncology and immuno-oncology. Certain of our consultants receive non employee options to purchase our common stock and certain of our scientific and medical advisors receive honorarium for time spent assisting us.

Available Information

Our website is located at www.rigel.com. The information found on our website is not part of or incorporated by reference into this Annual Report on Form 10 K. We electronically file with the Securities and Exchange Commission (SEC) our Annual Report on Form 10 K, Quarterly Reports on Form 10 Q, Current Reports on Form 8 K and amendments to the reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act. We make available free of charge on or through our website copies of these reports as soon as reasonably practicable after we electronically file these reports with, or furnish them to, the SEC. Further, copies of these reports are available at the SEC's Public Reference Room at 100 F Street, NE, Washington, D.C. 20549. Information on the operation of the Public Reference Room can be obtained by calling the SEC at 1 800 SEC 0330. The SEC also maintains an internet site that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC at www.sec.gov.

Item 1A. Risk Factors

In evaluating our business, you should carefully consider the following risks, as well as the other information contained in this Annual Report on Form 10 K. These risk factors could cause our actual results to differ materially from those contained in forward looking statements we have made in this Annual Report on Form 10 K and those we may make from time to time. If any of the following risks actually occurs, our business, financial condition and operating results could be harmed. The risks and uncertainties described below are not the only ones facing us. Additional risks and uncertainties not presently known to us, or that we currently see as immaterial, may also harm our business.

Our prospects are highly dependent on the successful commercialization of TAVALISSE® (fostamatinib disodium hexahydrate), which received approval in April 2018 from the FDA for patients with chronic ITP who have had an insufficient response to a previous treatment. To the extent that TAVALISSE is not commercially successful, our business, financial condition and results of operations may be materially adversely affected and the price of our common stock may decline.

TAVALISSE is our only drug that has been approved for sale and it has only been approved in the United States for patients with chronic ITP who have had an insufficient response to a previous treatment. We are focusing a significant portion of our activities and resources on fostamatinib, and we believe our prospects are highly dependent on, and a significant portion of the value of our Company relates to, our ability to successfully commercialize TAVALISSE in

the United States.

Successful commercialization of TAVALISSE is subject to many risks. We have never, as an organization, launched or commercialized a product, and there is no guarantee that we will be able to do so successfully with fostamatinib for its approved indication. There are numerous examples of unsuccessful product launches and failures to meet high expectations of market potential, including by pharmaceutical companies with more experience and resources than us.

Market acceptance of fostamatinib and any of our or collaborative partners' future product candidates that may receive approval, will depend on a number of factors, including:

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- the efficacy and safety as demonstrated in clinical trials;
- the timing of market introduction of the product as well as competitive products;
- the clinical indications for which the product is approved;
- acceptance by physicians, the medical community and patients of the product as a safe and effective treatment;
- the ability to distinguish safety and efficacy from existing, less expensive generic alternative therapies, if any;
- the convenience of prescribing, administrating and initiating patients on the product and the length of time the patient is on the product;
- the potential and perceived advantages of the product over alternative treatments;
- the potential and perceived value of the product over alternative treatments;
- the cost of treatment in relation to alternative treatments, including any similar generic treatments;
- the availability of coverage and adequate reimbursement and pricing by third-party payors and government authorities;
- the prevalence and severity of adverse side effects; and
- the effectiveness of sales and marketing efforts.

Even if we are successful in building out our commercial team, there are many factors that could cause the launch and commercialization of TAVALISSE to be unsuccessful, including a number of factors that are outside our control. The commercial success of TAVALISSE depends on the extent to which patients and physicians accept and adopt TAVALISSE for patients with chronic ITP who have had an insufficient response to a previous treatment. We also do not know how physicians, patients and payors will respond to the price increases of fostamatinib.

Physicians may not prescribe TAVALISSE and patients may be unwilling to use TAVALISSE if coverage is not provided or reimbursement is inadequate to cover a significant portion of the cost. Additionally, any negative development for fostamatinib in clinical development in additional indications, may adversely impact the commercial

results and potential of fostamatinib. Thus, significant uncertainty remains regarding the commercial potential of fostamatinib.

If the launch or commercialization of TAVALISSE is unsuccessful or perceived as disappointing, our stock price could decline significantly and the long-term success of the product and our company could be harmed.

We also may not be successful entering into arrangements with third parties to sell and market one or more of our product candidates or may be unable to do so on terms that are favorable to us. We likely will have little control over such third parties, including Kissei's development and commercialization of fostamatinib in all indications in Japan, China, Taiwan, and the Republic of Korea, and any of them may fail to devote the necessary resources and attention to sell and market one or more of our product candidates effectively, which could damage our reputation. If we do not establish sales and marketing capabilities successfully, either on our own or in collaboration with third parties, we will not be successful in commercializing our product candidates.

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Even if we, or any of our collaborative partners, are able to continue to commercialize TAVALISSE or any product candidate that we, or they, develop, the product may become subject to unfavorable pricing regulations, third-party payor reimbursement practices or labeling restrictions, any of which could harm our business.

The commercial success of any product for which we have obtained regulatory approval, or for which we obtain regulatory approval in the future will depend substantially on the extent to which the costs of our product candidates will be paid by third-party payors, including government health care programs and private health insurers. If coverage is not available, or reimbursement is limited, we, or any of our collaborative partners, may not be able to successfully commercialize TAVALISSE or any of our product candidates. Even if coverage is provided, the approved reimbursement amount may not be high enough to allow us, or any of our collaborative partners, to establish or maintain pricing sufficient to realize a sufficient return on our or their investments. In the United States, no uniform policy of coverage and reimbursement for products exists among third-party payors and coverage and reimbursement levels for products can differ significantly from payor to payor. As a result, the coverage determination process is often a time consuming and costly process that may require us to provide scientific and clinical support for the use of our products to each payor separately, with no assurance that coverage and adequate reimbursement will be applied consistently or obtained in the first instance.

There is significant uncertainty related to third-party payor coverage and reimbursement of newly approved drugs. Marketing approvals, pricing and reimbursement for new drug products vary widely from country to country. Some countries require approval of the sale price of a drug before it can be marketed. In many countries, the pricing review period begins after marketing or product licensing approval is granted. In some foreign markets, prescription pharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted. As a result, we, or any of our collaborative partners, might obtain marketing approval for a product in a particular country, but then be subject to price regulations that delay commercial launch of the product, possibly for lengthy time periods, which may negatively impact the revenues we are able to generate from the sale of the product in that country. Adverse pricing limitations may hinder our ability or the ability of any future collaborators to recoup our or their investment in one or more product candidates, even if our product candidates obtain marketing approval.

Patients who are provided medical treatment for their conditions generally rely on third-party payors to reimburse all or part of the costs associated with their treatment. Therefore, our ability, and the ability of any of our collaborative partners, to successfully commercialize fostamatinib or any of our product candidates will depend in part on the extent to which coverage and adequate reimbursement for these products and related treatments will be available from third-party payors.

Additionally, the approved labeling ultimately approved for any of our product candidates for which we have or may obtain regulatory approval may include restrictions on their uses and may be subject to ongoing FDA or international regulatory authority requirements governing the labeling, packaging, storage, distribution, safety surveillance, advertising, promotion, record-keeping and reporting of safety and other post-market information. If we or any of our collaborative partners do not timely obtain or comply with the labeling approval by the FDA or international regulatory authorities on any of our product candidates, it may delay or inhibit our ability to successfully commercialize our products and generate revenues.

If we are unable to successfully launch TAVALISSE and retain experienced sales force, our business will be substantially harmed.

We currently have limited experience in marketing and selling pharmaceutical products. TAVALISSE is a newly-marketed drug and, therefore, none of the members of our sales force will have ever promoted TAVALISSE prior to its launch. As a result, we will be required to expend significant time and resources and to continuously to train our sales force to be credible, persuasive and compliant with applicable laws in marketing TAVALISSE for patients with chronic ITP who have had an insufficient response to a previous treatment. In addition, we must continually train our sales force to ensure that an appropriate and compliant message about TAVALISSE is being delivered. If we are unable to effectively train our sales force and equip them with compliant and effective materials, including medical and sales literature to help them appropriately inform and educate regarding its potential benefits and proper administration, our efforts to successfully commercialize TAVALISSE could be put in jeopardy, which would negatively impact our ability

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to generate product revenues.

We have only recently established our distribution and reimbursement capabilities, all of which will be necessary to successfully commercialize TAVALISSE. As a result, we will be required to expend significant time and resources to market, sell, and distribute TAVALISSE to hematologists and hematologists-oncologists. There is no guarantee that the marketing strategies, or the distribution and reimbursement capabilities, that we have developed will be successful. Particularly, we are dependent on third-party logistics, specialty pharmacies and distribution partners in the distribution of TAVALISSE. If they are unable to perform effectively or if they do not provide efficient distribution of the medicine to patients, our business may be harmed.

If the market opportunities for TAVALISSE and product candidates are smaller than we believe they are, our revenues may be adversely affected, and our business may suffer.

Certain of the diseases that TAVALISSE and our other product candidates being developed to address are in underserved and underdiagnosed populations. Our projections of both the number of people who have these diseases, as well as the subset of people with these diseases who will seek treatment utilizing our products or product candidates, may not be accurate. If our estimates of the prevalence or number of patients potentially on therapy prove to be inaccurate, the market opportunities for fostamatinib and our other product candidates may be smaller than we believe they are, our prospects for generating expected revenue may be adversely affected and our business may suffer.

We have recently increased, and will continue to increase, the size of our organization. We may encounter difficulties with managing our growth, which could adversely affect our results of operations.

As of December 31, 2018, we had approximately 158 full-time employees. Although we have substantially increased the size of our organization, we may need to add additional qualified personnel and resources, especially now that we have a commercial sales force. Our current infrastructure may be inadequate to support our development and commercialization efforts and expected growth. Future growth will impose significant added responsibilities on members of management, including the need to identify, recruit, maintain and integrate additional employees, and may take time away from running other aspects of our business, including development and commercialization of TAVALISSE and our other product candidates.

Our future financial performance and our ability to commercialize TAVALISSE and our other product candidates that may receive regulatory approval will depend, in part, on our ability to manage any future growth effectively. In particular, as we commercialize TAVALISSE, we will need to support the training and ongoing activities of our sales force and will likely need to continue to expand the size of our employee base for managerial, operational, financial and other resources. To that end, we must be able to successfully:

- manage our development efforts effectively;

- integrate additional management, administrative and manufacturing personnel;

- further develop our marketing and sales organization; and

- maintain sufficient administrative, accounting and management information systems and controls.

We may not be able to accomplish these tasks or successfully manage our operations and, accordingly, may not achieve our research, development, and commercialization goals. Our failure to accomplish any of these goals could materially and adversely affect our business and operations.

Regulatory approval for any approved product is limited by the FDA to those specific indications and conditions for which clinical safety and efficacy have been demonstrated, and we may incur significant liability if it is determined that we are promoting the “off-label” use of TAVALISSE or any of our future product candidates if approved.

Any regulatory approval is limited to those specific diseases, indications and patient populations for which a

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product is deemed to be safe and effective by the FDA. For example, the FDA-approved label for TAVALISSE is only approved for use in adults with ITP who have had an insufficient response to other treatments. In addition to the FDA approval required for new formulations, any new indication for an approved product also requires FDA approval. If we are not able to obtain FDA approval for any desired future indications for our products and product candidates, our ability to effectively market and sell our products may be reduced and our business may be adversely affected.

While physicians may choose to prescribe drugs for uses that are not described in the product's labeling and for uses that differ from those tested in clinical studies and approved by the regulatory authorities, our ability to promote the products is limited to those indications and patient populations that are specifically approved by the FDA. These "off-label" uses are common across medical specialties and may constitute an appropriate treatment for some patients in varied circumstances. We have implemented compliance and monitoring policies and procedures, including a process for internal review of promotional materials, to deter the promotion of TAVALISSE for off-label uses. We cannot guarantee that these compliance activities will prevent or timely detect off-label promotion by sales representatives or other personnel in their communications with health care professionals, patients and others, particularly if these activities are concealed from the Company. Regulatory authorities in the United States generally do not regulate the behavior of physicians in their choice of treatments. Regulatory authorities do, however, restrict communications by pharmaceutical companies on the subject of off-label use. If our promotional activities fail to comply with the FDA's regulations or guidelines, we may be subject to warnings from, or enforcement action by, these regulatory authorities. In addition, our failure to follow FDA rules and guidelines relating to promotion and advertising may cause the FDA to issue warning letters or untitled letters, suspend or withdraw an approved product from the market, require a recall or institute fines, which could result in the disgorgement of money, operating restrictions, injunctions or civil or criminal enforcement, and other consequences, any of which could harm our business.

Notwithstanding the regulatory restrictions on off-label promotion, the FDA and other regulatory authorities allow companies to engage in truthful, non-misleading and non-promotional scientific exchange concerning their products. We engage in medical education activities and communicate with investigators and potential investigators regarding our clinical trials. If the FDA or other regulatory or enforcement authorities determine that our communications regarding our marketed product are not in compliance with the relevant regulatory requirements and that we have improperly promoted off-label uses, or that our communications regarding our investigational products are not in compliance with the relevant regulatory requirements and that we have improperly engaged in pre-approval promotion, we may be subject to significant liability, including civil and administrative remedies as well as criminal sanctions.

Enacted or future legislation, including potentially unfavorable pricing regulations or other healthcare reform initiatives, may increase the difficulty and cost for us to obtain regulatory approval of our product candidates and/or commercialize fostamatinib or our product candidates, once approved, and affect the prices we may set or obtain.

The regulations that govern, among other things, regulatory approvals, coverage, pricing and reimbursement for new drug products vary widely from country to country. In the United States and some foreign jurisdictions, there have been a number of legislative and regulatory changes and proposed changes regarding the healthcare system that could

prevent or delay regulatory approval of our product candidates, restrict or regulate post-approval activities and affect our ability to successfully sell fostamatinib or any product candidates for which we obtain regulatory approval in the future. In particular, in March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, collectively, the Affordable Care Act, was enacted, which substantially changes the way health care is financed by both governmental and private insurers, and significantly impacts the U.S. pharmaceutical industry. The Affordable Care Act and its implementing regulations, among other things, addressed a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for certain drugs and biologics, including our approved product and product candidates, that are inhaled, infused, instilled, implanted or injected, increased the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program, extended the Medicaid Drug Rebate Program to utilization of prescriptions of individuals enrolled in Medicaid managed care organizations, subjected manufacturers to new annual fees and taxes for certain branded prescription drugs, provided incentives to programs that increase the federal government’s comparative effectiveness research and established a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 70% point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap

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period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D.

Other legislative changes have been proposed and adopted in the United States since the Affordable Care Act was enacted. In August 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers of 2% per fiscal year, which went into effect in April 2013, and, due to subsequent legislative amendments, will remain in effect through 2027, unless additional Congressional action is taken. In January 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, or the ATRA, which, among other things, further reduced Medicare payments to several providers, including hospitals and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

There have been, and likely will continue to be, legislative and regulatory proposals at the foreign, federal and state levels directed at broadening the availability of healthcare and containing or lowering the cost of healthcare. We cannot predict the initiatives that may be adopted in the future. The continuing efforts of the government, insurance companies, managed care organizations and other payors of healthcare services to contain or reduce costs of healthcare and/or impose price controls may adversely affect:

- the demand for fostamatinib or our product candidates, if we obtain regulatory approval;
- our ability to set a price that we believe is fair for our products;
- our ability to generate revenue and achieve or maintain profitability;
- the level of taxes that we are required to pay; and
- the availability of capital.

Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors, which may adversely affect our future profitability.

Since its enactment, there have been judicial and Congressional challenges to numerous provisions of the Affordable Care Act, as well as recent efforts by the Trump administration to repeal or replace certain aspects of the Affordable Care Act. Since January 2017, President Trump has signed two Executive Orders designed to delay the

implementation of certain provisions of the Affordable Care Act or otherwise circumvent some of the requirements for health insurance mandated by the Affordable Care Act. Concurrently, Congress has considered legislation that would repeal or repeal and replace all or part of the Affordable Care Act. While Congress has not passed comprehensive repeal legislation, two bills affecting the implementation of certain taxes under the Affordable Care Act have been enacted. More recently, 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 Affordable Care Act qualified health plans and health insurance issuers under the Affordable Care Act risk adjustment program in response to the outcome of federal district court litigation regarding the method CMS uses to determine this risk adjustment. On December 14, 2018, a U.S. District Court Judge in the Northern District of Texas ruled that the individual mandate is a critical and inseverable feature of the Affordable Care Act, and 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. While neither the Texas District Court Judge, Trump administration nor CMS have stated that the ruling will have an immediate effect, it is unclear how this decision, subsequent appeals, if any, and other efforts will impact the Affordable Care Act. Additional policy changes, including potential modification or repeal of all or parts of the Affordable Care Act or the implementation of new health care legislation could result in significant changes to the health care system, which could have a material adverse effect on our business, results of operations and financial condition.

Legislative and regulatory proposals have been made to expand post-approval requirements and restrict sales and promotional activities for pharmaceutical products. We cannot be sure whether additional legislative changes will be

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enacted, or whether the FDA regulations, guidance or interpretations will be changed, or what the impact of such changes on the regulatory approvals of our product candidates, if any, may be.

In the United States, the European Union and other potentially significant markets for our current and future products, government authorities and third-party payors are increasingly attempting to limit or regulate the price of medical products and services, particularly for new and innovative products and therapies, which has resulted in lower average selling prices. For example, in the United States, there have been several recent Congressional inquiries and proposed federal legislation designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drugs. At the federal level, the Trump administration's budget proposal for fiscal year 2019 contains further drug price control measures that could be enacted during the 2019 budget process or in other future legislation, including, for example, measures to permit Medicare Part D plans to negotiate the price of certain drugs under Medicare Part B, to allow some states to negotiate drug prices under Medicaid, and to eliminate cost sharing for generic drugs for low-income patients. Further, the Trump administration released a "Blueprint", or plan, to lower drug prices and reduce out of pocket costs of drugs that contains additional proposals to increase drug manufacturer competition, increase the negotiating power of certain federal healthcare programs, incentivize manufacturers to lower the list price of their products, and reduce the out of pocket costs of drug products paid by consumers. The United States Department of Health and Human Services has already started the process of soliciting feedback on some of these measures while concurrently implementing others under its existing authority. For example, in September 2018, CMS announced that it will allow Medicare Advantage Plans the option to use step therapy for Part B drugs beginning January 1, 2019, and in October 2018, CMS proposed a new rule that would require direct-to-consumer television advertisements of prescription drugs and biological products, for which payment is available through or under Medicare or Medicaid, to include in the advertisement the Wholesale Acquisition Cost, or list price, of that drug or biological product. On January 31, 2019, the HHS Office of Inspector General proposed modifications to federal Anti-Kickback Statute safe harbors which, among other things, may affect rebates paid by manufacturers to Medicare Part D plans, the purpose of which is to further reduce the cost of drug products to consumers. While some proposed measures will require authorization through additional legislation to become effective, Congress and the Trump administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, to encourage importation from other countries and bulk purchasing. Furthermore, the increased emphasis on managed healthcare in the United States and on country and regional pricing and reimbursement controls in the E.U. will put additional pressure on product pricing, reimbursement and usage, which may adversely affect our sales and results of operations. These pressures can arise from rules and practices of managed care groups, judicial decisions and governmental laws and regulations related to Medicare, Medicaid and healthcare reform, pharmaceutical reimbursement policies and pricing in general.

We may be subject, directly or indirectly, to federal and state healthcare fraud and abuse laws, false claims laws and other federal and state healthcare laws, and the failure to comply with such laws could result in substantial penalties. Our employees, independent contractors, consultants, principal investigators, CROs, commercial partners and vendors may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements.

Our business operations and current and future arrangements with investigators, healthcare professionals, consultants, third-party payers and customers, may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations. These laws may constrain the business or financial arrangements and relationships through which we conduct our operations, including how we research, market, sell and distribute any product for which we have obtained regulatory approval, or for which we obtain regulatory approval in the future. In particular, the promotion, sales and marketing of healthcare items and services, as well as certain 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, including off-label uses of our products, structuring and commission(s), certain customer incentive programs and other business arrangements generally. Activities subject to these laws also involve the improper use or misrepresentation of information obtained in the course of patient recruitment for clinical trials, creating fraudulent data

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in our preclinical studies or clinical trials or illegal misappropriation of drug product, which could result in regulatory sanctions and cause serious harm to our reputation. The laws that may affect our ability to operate include, but are not limited to:

- the Federal Anti-Kickback Statute, which prohibits, among other things, individuals and entities from knowingly and willfully soliciting, receiving, offering or paying any remuneration (including any kickback, bribe, or rebate), directly or indirectly, overtly or covertly, in cash or in kind, to induce, or in return for, 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 a federal healthcare program, such as the Medicare and Medicaid programs. 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;

- federal civil and criminal false claims laws and civil monetary penalty laws, including the federal civil False Claims Act, which impose criminal and civil penalties, through government or civil whistleblower, or qui tam, actions, on individuals and entities for, among other things, knowingly presenting, or causing to be presented, claims for payment or approval from the federal government, including federal healthcare programs, such as Medicare, Medicaid that are false, fictitious or fraudulent, or knowingly making, using or causing to be made or used, a false statement to avoid, decrease or conceal an obligation to pay money to the federal government. Entities can be held liable under the federal civil 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, promoting a product off label, or for providing medically unnecessary services or items. In addition, the government may assert that a claim including items and services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act;

- the Federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which imposes criminal and civil liability for, among other things, knowingly and willfully executing, or attempting to execute, a scheme to defraud or to obtain any healthcare benefit program or obtain, by means of false or fraudulent pretenses, representations, or promises, any of the money or property owned by, or under the custody or control of, any healthcare benefit program, regardless of the payor (e.g., public or private), willfully obstructing a criminal investigation of a healthcare offense, and knowingly and willfully falsifying, concealing or covering up by any trick or device a material fact or making any materially false, fictitious or fraudulent statements in connection with the delivery of, or payment for, healthcare benefits, items or services relating to healthcare matters. Similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the healthcare fraud statute implemented under HIPAA 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, or HITECH, and their respective implementing regulations, which impose requirements on certain covered healthcare providers, health plans, and healthcare clearinghouses, as well as their respective business associates that perform services for them that involve the creation, use, maintenance or disclosure of, individually identifiable health information, relating to the privacy, security and transmission of individually identifiable health information without appropriate authorization;

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the federal physician payment transparency requirements, sometimes referred to as the Physician Payments Sunshine Act, created under the Affordable Care Act, and its implementing regulations, which require certain manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program (with certain exceptions) to report annually to CMS, information related to payments or other transfers of value made to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members;

· the U.S. Federal Food, Drug and Cosmetic Act, or FDCA, which prohibits, among other things, the adulteration or misbranding of drugs and medical devices; and

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- federal consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm consumers.

Additionally, we are subject to state and foreign equivalents of each of the healthcare fraud and abuse laws described above, among others, some of which may be broader in scope and may apply regardless of the payor. We may also be subject to: state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government; state and local laws that restrict payments that may be made to healthcare providers; state and local laws that require pharmaceutical manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers and entities, or marketing expenditures; state and local laws that require the registration of pharmaceutical sales representatives; state laws that require information to be reported related to drug pricing; and equivalent foreign laws and regulations. Further, we may be subject to state and foreign laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

We are also exposed to the risk of fraud, misconduct or other illegal activity by our employees, independent contractors, consultants, principal investigators, CROs, commercial partners and vendors. Misconduct by these parties could include intentional, reckless and/or negligent conduct that fails to: comply with the laws of the FDA and other similar foreign regulatory bodies; provide true, complete and accurate information to the FDA and other similar foreign regulatory bodies; comply with manufacturing standards we have established; comply with federal and state data privacy, security, fraud and abuse and other healthcare laws and regulations in the United States and similar foreign fraudulent misconduct laws; or report financial information or data accurately or to disclose unauthorized activities to us. It is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent inappropriate conduct 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 be in compliance with such laws or regulations.

We are also subject to the risk that a person or government could allege such fraud or other misconduct, even if none occurred. Efforts to ensure that our business arrangements will comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental and enforcement authorities will conclude that our business practices may not comply with current or future statutes, regulations or case law interpreting applicable fraud and abuse or other healthcare laws and regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of civil, criminal and administrative penalties, damages, disgorgement, monetary fines, individual imprisonment, additional reporting obligations and oversight if we become subject to a corporate integrity agreement or other agreement to resolve allegations of non-compliance with these laws, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, contractual damages, reputational harm, diminished profits and future earnings, and curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations. In addition, the approval and commercialization of any of our product candidates outside the United States will also likely subject us to foreign equivalents of the healthcare laws mentioned above, among other foreign laws.

If manufacturers obtain approval for generic versions of TAVALISSE, or of products with which we compete, our business may be harmed.

Under the U.S. Food, Drug and Cosmetic Act, or FDCA, the FDA can approve an Abbreviated New Drug Application, or ANDA, for a generic version of a branded drug without the ANDA applicant undertaking the clinical testing necessary to obtain approval to market a new drug. Generally, in place of such clinical studies, an ANDA applicant usually needs only to submit data demonstrating that its product has the same active ingredient(s), strength, dosage form, route of administration and that it is bioequivalent to the branded product.

The FDCA requires that an applicant for approval of a generic form of a branded drug certify either that its generic product does not infringe any of the patents listed by the owner of the branded drug in the Orange Book or that those patents are not enforceable. This process is known as a paragraph IV challenge. Upon notice of a paragraph IV

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challenge, a patent owner has 45 days to bring a patent infringement suit in federal district court against the company seeking ANDA approval of a product covered by one of the owner's patents. If this type of suit is commenced, the FDCA provides a 30-month stay on the FDA's approval of the competitor's application. If the litigation is resolved in favor of the ANDA applicant or the challenged patent expires during the 30-month stay period, the stay is lifted and the FDA may thereafter approve the application based on the standards for approval of ANDAs. Once an ANDA is approved by the FDA, the generic manufacturer may market and sell the generic form of the branded drug in competition with the branded medicine.

The ANDA process can result in generic competition if the patents at issue are not upheld or if the generic competitor is found not to infringe the owner's patents. If this were to occur with respect to TAVALISSE or products with which it competes, our business would be materially harmed. We have a number of patents listed in the Orange Book, the last of which is expected to expire in July 2032.

Unforeseen safety issues could emerge with TAVALISSE that could require us to change the prescribing information to add warnings, limit use of the product, and/or result in litigation. Any of these events could have a negative impact on our business.

Discovery of unforeseen safety problems or increased focus on a known problem could impact our ability to commercialize TAVALISSE and could result in restrictions on its permissible uses, including withdrawal of the medicine from the market.

If we or others identify additional undesirable side effects caused by TAVALISSE after approval:

- regulatory authorities may require the addition of labeling statements, specific warnings, contraindications, or field alerts to physicians and pharmacies;
- regulatory authorities may withdraw their approval of the product and require us to take our approved drugs off the market;
- we may be required to change the way the product is administered, conduct additional clinical trials, change the labeling of the product, or implement a Risk Evaluation and Mitigation Strategy, or REMS;
- we may have limitations on how we promote our drugs;
- third-party payers may limit coverage or reimbursement for TAVALISSE;

- sales of TAVALISSE may decrease significantly;

- we may be subject to litigation or product liability claims; and

- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of TAVALISSE and could substantially increase our operating costs and expenses, which in turn could delay or prevent us from generating significant revenue from sale of TAVALISSE.

If a safety issue emerges post-approval, we may become subject to costly product liability litigation by our customers, their patients or payers. Product liability claims could divert management's attention from our core business, be expensive to defend, and result in sizable damage awards against us that may not be covered by insurance. If we cannot successfully defend ourselves against claims that TAVALISSE caused injuries, we will incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

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- decreased demand for any product candidates or products that we may develop;
- the inability to commercialize any products that we may develop;
- injury to our reputation and significant negative media attention;
- withdrawal of patients from clinical studies or cancellation of studies;
- significant costs to defend the related litigation;
- substantial monetary awards to patients; and
- loss of revenue.

We currently hold $10.0 million in product liability insurance coverage, which may not be adequate to cover all liabilities that we may incur. Insurance coverage is increasingly expensive. We may not be able to obtain insurance coverage at a reasonable cost or in amounts adequate to satisfy any liability or associated costs that may arise in the future. These events could harm our business and results of operations and cause our stock price to decline.

If we fail to comply with our reporting and payment obligations under the Medicaid Drug Rebate Program or other governmental pricing programs in the United States, we could be subject to additional reimbursement requirements, fines, sanctions and exposure under other laws which could have a material adverse effect on our business, results of operations and financial condition.

We participate in the Medicaid Drug Rebate Program, as administered by the CMS, and other federal and state government pricing programs in the United States, and we may participate in additional government pricing programs in the future. These programs generally require us to pay rebates or otherwise provide discounts to government payers in connection with drugs that are dispensed to beneficiaries/recipients of these programs. In some cases, such as with the Medicaid Drug Rebate Program, the rebates are based on pricing that we report on a monthly and quarterly basis to the government agencies that administer the programs. Pricing requirements and rebate/discount calculations are complex, vary among products and programs, and are often subject to interpretation by governmental or regulatory agencies and the courts. The requirements of these programs, including, by way of example, their respective terms and scope, change frequently. Responding to current and future changes may increase our costs, and the complexity of compliance will be time consuming. Invoicing for rebates is provided in arrears, and there is frequently a time lag of up to several months between the sales to which rebate notices relate and our receipt of those notices, which further complicates our ability to accurately estimate and accrue for rebates related to the Medicaid program as implemented by individual states. Thus, there can be no assurance that we will be able to identify all factors that may cause our discount and rebate payment obligations to vary from period to period, and our actual results may differ significantly from our estimated allowances for discounts and rebates. Changes in estimates and assumptions may have a material adverse effect on our business, results of operations and financial condition.

In addition, the Office of Inspector General of the Department of Health and Human Services and other Congressional enforcement and administrative bodies have recently increased their focus on pricing requirements for products, including, but not limited to the methodologies used by manufacturers to calculate average manufacturer price, or AMP, and best price, or BP, for compliance with reporting requirements under the Medicaid Drug Rebate Program. We are liable for errors associated with our submission of pricing data and for any overcharging of government payers. Failure to make necessary disclosures and/or to identify overpayments could result in allegations against us under the Federal False Claims Act and other laws and regulations. Any required refunds to the U.S. government or responding to a government investigation or enforcement action would be expensive and time consuming and could have a material adverse effect on our business, results of operations and financial condition. In addition, in the event that CMS were to terminate our rebate agreement, no federal payments would be available under Medicaid or Medicare for our covered outpatient drugs.

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Even for those product candidates that have or may receive regulatory 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, in which case we may not generate significant revenues or become profitable.

For our product candidates that have or may receive regulatory approval, they may nonetheless fail to gain sufficient market acceptance by physicians, hospital administrators, patients, healthcare payors and others in the medical community. The degree of market acceptance of our product candidates, if approved for commercial sale, will depend on a number of factors, including the following:

- relative convenience and ease of administration;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the willingness of physicians to change their current treatment practices;
- the willingness of hospitals and hospital systems to include our product candidates as treatment options;
- demonstration of efficacy and safety in clinical trials;
- the prevalence and severity of any side effects;
- the ability to offer product candidates for sale at competitive prices;
- the price we charge for our product candidates;
- the strength of marketing and distribution support; and
- the availability of third-party coverage and adequate reimbursement.

Efforts to educate the physicians, patients, healthcare payors and others in the medical community on the benefits of our product candidates may require significant resources and may not be successful. If any of our product candidates are approved, if at all, but do not achieve an adequate level of acceptance, we may not generate significant product revenue and we may not become profitable on a sustained basis.

We rely and may continue to rely on a single distribution facility for the sale of TAVALISSE and potential sale of any of our product candidates.

Our distribution operations for the sale of TAVALISSE is concentrated in a single distribution center owned by a third party logistics provider. Our distribution operations, if and when we launch any of our product candidate in the future, may also be concentrated in a single distribution center owned by a third party logistics provider. Any significant disruption in the operation of the facility due to natural disaster or severe weather, or events such as fire, accidents, power outages, system failures, or other unforeseen causes, could devalue or damage a significant portion of our inventories and could adversely affect our product distribution and sales until such time as we could secure an alternative facility. If we encounter difficulties with our distribution facility or other problems or disasters arise, we cannot ensure that critical systems and operations will be restored in a timely manner or at all, and this would have a material adverse effect on our business. In addition, growth could require us to further expand our current facility, which could affect us adversely in ways that we cannot predict.

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We lack the capability to manufacture compounds for clinical development and we intend to rely on third parties for commercial supply, manufacturing and distribution if any of our product candidates which receive regulatory approval and we may be unable to obtain required material or product in a timely manner, at an acceptable cost or at a quality level required to receive regulatory approval.

We currently do not have the manufacturing capabilities or experience necessary to produce TAVALISSE or any product candidates for clinical trials, including fostamatinib in AIHA and our IRAK inhibitor program. We currently use one manufacturer of fostamatinib. We do not currently have, nor do we plan to acquire the infrastructure or capability to supply, manufacture or distribute preclinical, clinical or commercial quantities of drug substances or products. For each clinical trial of our unpartnered product candidates, we rely on third-party manufacturers for the active pharmaceutical ingredients, as well as various manufacturers to manufacture starting components, excipients and formulated drug products. Our ability to develop our product candidates, and our ability to commercially supply our products will depend, in part, on our ability to successfully obtain the APIs and other substances and materials used in our product candidates from third parties and to have finished products manufactured by third parties in accordance with regulatory requirements and in sufficient quantities for preclinical and clinical testing and commercialization. If we fail to develop and maintain supply relationships with these third parties, we may be unable to continue to develop or commercialize our product candidates.

We rely and will continue to rely on certain third parties, including those located outside the U.S., as our limited source of the materials they supply or the finished products they manufacture. The drug substances and other materials used in our product candidates are currently available only from one or a limited number of supplier or manufacturer and certain of our finished product candidates are manufactured by one or a limited number of contract manufacturers. Any of these existing supplier or manufacturer may:

- fail to supply us with product on a timely basis or in the requested amount due to unexpected damage to or destruction of facilities or equipment or otherwise;
- fail to increase manufacturing capacity and produce drug product and components in larger quantities and at higher yields in a timely or cost-effective manner, or at all, to sufficiently meet our commercial needs;
- be unable to meet our production demands due to issues related to their reliance on sole-source suppliers and manufacturers;
- supply us with product that fails to meet regulatory requirements;
- become unavailable through business interruption or financial insolvency;
- lose regulatory status as an approved source;

- be unable or unwilling to renew current supply agreements when such agreements expire on a timely basis, on acceptable terms or at all; or

- discontinue production or manufacturing of necessary drug substances or products.

Our current and anticipated future dependence upon these third-party manufacturers may adversely affect our ability to develop and commercialize product candidates on a timely and competitive basis, which could have a material adverse effect on sales, results of operations and financial condition. If we were required to transfer manufacturing processes to other third-party manufacturers and we were able to identify an alternative manufacturer, we would still need to satisfy various regulatory requirements. Satisfaction of these requirements could cause us to experience significant delays in receiving an adequate supply of our products and products in development and could be costly. Moreover, we may not be able to transfer processes that are proprietary to the manufacturer, if any. These manufacturers may not be able to produce material on a timely basis or manufacture material at the quality level or in the quantity required to meet our development timelines and applicable regulatory requirements and may also experience a shortage in qualified personnel. We may not be able to maintain or renew our existing third-party manufacturing arrangements, or

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enter into new arrangements, on acceptable terms, or at all. Our third-party manufacturers could terminate or decline to renew our manufacturing arrangements based on their own business priorities, at a time that is costly or inconvenient for us. If we are unable to contract for the production of materials in sufficient quantity and of sufficient quality on acceptable terms, our planned clinical trials may be significantly delayed. Manufacturing delays could postpone the filing of our IND applications and/or the initiation or completion of clinical trials that we have currently planned or may plan in the future.

Drug manufacturers are subject to ongoing periodic unannounced inspection by the FDA, the Drug Enforcement Administration, and other federal and state agencies to ensure strict compliance with cGMP and other government regulations and corresponding foreign standards. We do not have control over third-party manufacturers' compliance with these regulations and standards and they may not be able to comply. Switching manufacturers may be difficult because the number of potential manufacturers is limited. It may be difficult or impossible for us to find a replacement manufacturer quickly on acceptable terms, or at all. Additionally, if we are required to enter into new supply arrangements, we may not be able to obtain approval from the FDA of any alternate supplier in a timely manner, or at all, which could delay or prevent the clinical development and commercialization of any related product candidates. Failure of our third-party manufacturers or us to comply with applicable regulations could result in sanctions being imposed on us, including fines, civil penalties, delays in or failure to grant marketing approval of our product candidates, injunctions, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of products and compounds, operating restrictions and criminal prosecutions, any of which could significantly and adversely affect our business.

Forecasting potential sales for any of our product candidates will be difficult, and if our projections are inaccurate, our business may be harmed and our stock price may be adversely affected.

Our business planning requires us to forecast or make assumptions regarding product demand and revenues for any of our product candidates if they are approved despite numerous uncertainties. These uncertainties may be increased if we rely on our collaborators or other third parties to conduct commercial activities in certain geographies and provide us with accurate and timely information. Actual results may differ materially from projected results for various reasons, including the following, as well as risks identified in other risk factors:

- the efficacy and safety of any of our product candidates, including as relative to marketed products and product candidates in development by third parties;

- pricing (including discounting or other promotions), reimbursement, product returns or recalls, competition, labeling, adverse events and other items that impact commercialization;

- the rate of adoption in the particular market, including fluctuations in demand for various reasons;

- lack of patient and physician familiarity with the drug;

- lack of patient use and physician prescribing history;

- lack of commercialization experience with the drug;

- actual sales to patients may significantly differ from expectations based on sales to wholesalers; and

- uncertainty relating to when the drug may become commercially available to patients and rate of adoption in other territories.

We expect that our revenues from sales of any of our product candidates will continue to be based in part on estimates, judgment and accounting policies. Any incorrect estimates or disagreements with regulators or others regarding such estimates or accounting policies may result in changes to our guidance, projections or previously reported results. Expected and actual product sales and quarterly and other results may greatly fluctuate, including in the near-

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term, and such fluctuations can adversely affect the price of our common stock, perceptions of our ability to forecast demand and revenues, and our ability to maintain and fund our operations.

We might not be able to commercialize our product candidates successfully if problems arise in the clinical testing and approval process.

Commercialization of our product candidates depends upon successful completion of extensive preclinical studies and clinical trials to demonstrate their safety and efficacy for humans. Preclinical testing and clinical development are long, expensive and uncertain processes.

In connection with clinical trials of our product candidates, we face the risks that:

- the product candidate may not prove to be effective;
- the product candidate may cause harmful side effects;
- the clinical results may not replicate the results of earlier, smaller trials;
- we, or the FDA or similar foreign regulatory authorities, may terminate or suspend the trials;
- our results may not be statistically significant;
- patient recruitment and enrollment may be slower than expected;
- patients may drop out of the trials; and
- regulatory and clinical trial requirements, interpretations or guidance may change.

We do not know whether we will be permitted to undertake clinical trials of potential products beyond the trials already concluded and the trials currently in process. It will take us, or our collaborative partners several years to complete any such testing, and failure can occur at any stage of testing. Interim results of trials do not necessarily

predict final results, and acceptable results in early trials may not be repeated in later trials. A number of companies in the pharmaceutical industry, including biotechnology companies, have suffered significant setbacks in advanced clinical trials, even after achieving promising results in earlier trials. For example, in April 2018, we announced that our Phase 2 clinical trial in patients with IgAN did not achieve statistical significance for its primary endpoint, which was mean change in proteinuria comparing fostamatinib dose groups to placebo controls in all patients studied.

We cannot assure you that we will be able to successfully complete the clinical development of our product candidates or receive regulatory approval to ultimately commercialize any of our other product candidates. For example, if we are unable to successfully commercialize fostamatinib, our business will be harmed.

Any product for which we have obtained regulatory approval, or for which we obtain approval in the future, is subject to, or will be subject to, extensive ongoing regulatory requirements by the FDA, EMA and other comparable regulatory authorities, and if we fail to comply with regulatory requirements or if we experience unanticipated problems with our products, we may be subject to penalties, we will be unable to generate revenue from the sale of such products, our potential for generating positive cash flow will be diminished, and the capital necessary to fund our operations will be increased.

In April 2018, we announced that the FDA had approved TAVALISSE for the treatment of thrombocytopenia in adult patients with chronic ITP who have had insufficient response to previous treatment. We launched fostamatinib in the United States on our own in late May 2018. In January 2019, we entered into an exclusive commercialization license agreement with Grifols to commercialize fostamatinib for the treatment, palliation, or prevention of human diseases, including chronic or persistent immune ITP, AIHA, and IgAN in Europe and Turkey, and in October 2018, we entered into an exclusive license and supply agreement with Kissei for the development and commercialization of fostamatinib

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in all indications in Japan, China, Taiwan, and the Republic of Korea. Any product for which we have obtained regulatory approval, or for which we obtain regulatory approval in the future, along with the manufacturing processes and practices, post-approval clinical research, product labeling, advertising and promotional activities for such product, are subject to continual requirements of, and review by, the FDA, the EMA and other comparable international regulatory authorities. These requirements include submissions of safety and other post-marketing information and reports, registration and listing requirements, current good manufacturing practices (cGMP) requirements relating to manufacturing, quality control, quality assurance and corresponding maintenance of records and documents, requirements regarding the distribution of samples to physicians, import and export requirements and recordkeeping.

Promotional communications with respect to prescription drugs are subject to a variety of legal and regulatory restrictions and must be consistent with the information in the product's approved labeling. Thus, we will not be able to promote any products we develop for indications or uses for which they are not approved.

In addition, the FDA often requires post-marketing testing and surveillance to monitor the effects of products. The FDA, the EMA and other comparable international regulatory agencies may condition approval of our product candidates on the completion of such post-marketing clinical studies. These post-marketing studies may suggest that a product causes undesirable side effects or may present a risk to the patient. Additionally, the FDA may require Risk Evaluation and Mitigation Strategies, or REMS, to help ensure that the benefits of the drug outweigh its risks. A REMS may be required to include various elements, such as a medication guide or patient package insert, a communication plan to educate healthcare providers of the drug’s risks, limitations on who may prescribe or dispense the drug, requirements that patients enroll in a registry or undergo certain health evaluations or other measures that the FDA deems necessary to ensure the safe use of the drug.

Discovery after approval of previously unknown problems with any of our products, manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in actions such as:

- restrictions on our ability to conduct clinical trials, including full or partial clinical holds on ongoing or planned trials
    - restrictions on product manufacturing processes;
- restrictions on the marketing of a product;
- restrictions on product distribution;

- requirements to conduct post-marketing clinical trials;
- untitled or warning letters or other adverse publicity;
- withdrawal of products from the market;
- refusal to approve pending applications or supplements to approved applications that we submit;
- recall of products;
- refusal to permit the import or export of our products;
- product seizure;
- fines, restitution or disgorgement of profits or revenue;
- refusal to allow us to enter into supply contracts, including government contracts;

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· injunctions; or

· imposition of civil or criminal penalties.

If such regulatory actions are taken, the value of our company and our operating results will be adversely affected. Additionally, if the FDA, the EMA or any other comparable international regulatory agency withdraws its approval of a product that is or may be approved, we will be unable to generate revenue from the sale of that product in the relevant jurisdiction, our potential for generating positive cash flow will be diminished and the capital necessary to fund our operations will be increased. Accordingly, we continue to expend significant time, money and effort in all areas of regulatory compliance, including manufacturing, production, product surveillance, post-marketing studies and quality control.

We do not and will not have access to all information regarding fostamatinib and product candidates we licensed to Kissei and Grifols.

We do not and will not have access to all information regarding fostamatinib and other product candidates, including potentially material information about commercialization plans, medical information strategies, clinical trial design and execution, safety reports from clinical trials, safety reports, regulatory affairs, process development, manufacturing and other areas known by Kissei and Grifols. In addition, we have confidentiality obligations under our agreement with Kissei and Grifols. Thus, our ability to keep our shareholders informed about the status of fostamatinib will be limited by the degree to which Kissei and/or Grifols keep us informed and allows us to disclose such information to the public. If Kissei and/or Grifols fail to keep us informed about commercialization efforts related to fostamatinib, or the status of the clinical development or regulatory approval pathway of other product candidates licensed to them, we may make operational and/or investment decisions that we would not have made had we been fully informed, which may materially and adversely affect our business and operations.

If we are unable to obtain regulatory approval to market products in the United States and foreign jurisdictions, we will not be permitted to commercialize products we or our collaborative partners may develop.

We cannot predict whether regulatory clearance will be obtained for any product that we, or our collaborative partners, hope to develop. Satisfaction of regulatory requirements typically takes many years, is dependent upon the type, complexity and novelty of the product and requires the expenditure of substantial resources. Of particular significance to us are the requirements relating to research and development and testing.

Before commencing clinical trials in humans in the United States, we, or our collaborative partners, will need to submit and receive approval from the FDA of an IND application. Clinical trials are subject to oversight by institutional review boards and the FDA and:

- must be conducted in conformance with the FDA's good clinical practices and other applicable regulations;

- must meet requirements for institutional review board oversight;

- must meet requirements for informed consent;

- are subject to continuing FDA and regulatory oversight;

- may require large numbers of test subjects; and

- may be suspended by us, our collaborators or the FDA at any time if it is believed that the subjects participating in these trials are being exposed to unacceptable health risks or if the FDA finds deficiencies in the IND or the conduct of these trials.

While we have stated that we intend to file additional INDs for future product candidates, this is only a statement of intent, and we may not be able to do so because we may not be able to identify potential product candidates.

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In addition, the FDA may not approve any IND we or our collaborative partners may submit in a timely manner, or at all.

Before receiving FDA approval to market a product, we must demonstrate with substantial clinical evidence that the product is safe and effective in the patient population and the indication that will be treated. Data obtained from preclinical and clinical activities are susceptible to varying interpretations that could delay, limit or prevent regulatory approvals. In addition, delays or rejections may be encountered based upon additional government regulation from future legislation or administrative action or changes in FDA policy during the period of product development, clinical trials and FDA regulatory review. Failure to comply with applicable FDA or other applicable regulatory requirements may result in criminal prosecution, civil penalties, recall or seizure of products, total or partial suspension of production or injunction, adverse publicity, as well as other regulatory action against our potential products or us. Additionally, we have limited experience in conducting and managing the clinical trials necessary to obtain regulatory approval.

If regulatory approval of a product is granted, this approval will be limited to those indications or disease states and conditions for which the product is demonstrated through clinical trials to be safe and efficacious. We cannot assure you that any compound developed by us, alone or with others, will prove to be safe and efficacious in clinical trials and will meet all of the applicable regulatory requirements needed to receive marketing approval.

Outside the United States, our ability, or that of our collaborative partners, to market a product is contingent upon receiving a marketing authorization from the appropriate regulatory authorities. This foreign regulatory approval process typically includes all of the risks and costs associated with FDA approval described above and may also include additional risks and costs, such as the risk that such foreign regulatory authorities, which often have different regulatory and clinical trial requirements, interpretations and guidance from the FDA, may require additional clinical trials or results for approval of a product candidate, any of which could result in delays, significant additional costs or failure to obtain such regulatory approval. For example, there can be no assurance that we or our collaborative partners will not have to provide additional information or analysis, or conduct additional clinical trials, before receiving approval to market product candidates.

We will need additional capital in the future to sufficiently fund our operations and research.

We have consumed substantial amounts of capital to date as we continue our research and development activities, including preclinical studies and clinical trials and our preparation for the commercial launch of TAVALISSE. We may seek another collaborator or licensee in the future for further clinical development and commercialization of fostamatinib, as well as our other clinical programs, which we may not be able to obtain on commercially reasonable terms or at all. In January 2019, we entered into an exclusive commercialization license agreement with Grifols to commercialize fostamatinib for the treatment, palliation, or prevention of human diseases, including chronic or persistent ITP, AIHA, and IgAN in Europe and Turkey, in which we received an upfront payment of $30.0 million. However, if by the second anniversary of the effective date of the agreement, the EMA has not approved the MAA for

fostamatinib for ITP, Grifols will have the right to terminate such agreement in its entirety within six 6 months after such second anniversary by providing us with at 60 days' written notice, and in such event only, we are required to refund to Grifols $25.0 million of the upfront payment. In October 2018, we entered into an exclusive license and supply agreement with Kissei for the development and commercialization of fostamatinib in all indications in Japan, China, Taiwan, and the Republic of Korea in which we will receive an upfront cash payment of $33.0 million. We believe that our existing capital resources will be sufficient to support our current and projected funding requirements, including the commercial launch of TAVALISSE in the U.S. in late May 2018, through at least the next 12 months from the Form 10-K filing date. We have based this estimate on assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we currently expect. Because of the numerous risks and uncertainties associated with commercial launch, the development of our product candidates and other research and development activities, we are unable to estimate with certainty our future product revenues, our revenues from our current and future collaborative partners, the amounts of increased capital outlays and operating expenditures associated with our current and anticipated clinical trials and other research and development activities.

We will continue to need additional capital and the amount of future capital needed will depend largely on the success of our commercial launch of TAVALISSE and the success of our internally developed programs as they proceed in later and more expensive clinical trials, including any additional clinical trials that we may decide to conduct with

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respect to fostamatinib. Unless and until we are able to generate a sufficient amount of product, royalty or milestone revenue, which may never occur, we expect to finance future cash needs through public and/or private offerings of equity securities, debt financings or collaboration and licensing arrangements, as well as through proceeds from exercise of stock options and interest income earned on the investment of our cash balances and short-term investments. With the exception of product sales from TAVALISSE, contingent and royalty payments that we may receive under our existing collaborations, we do not currently have any commitments for future funding. We do not know whether additional financing will be available when needed, or that, if available, we will obtain financing on reasonable terms. To the extent we raise additional capital by issuing equity securities in the future, our stockholders could at that time experience substantial dilution. In addition, we have a significant number of stock options outstanding. To the extent that outstanding stock options have been or may be exercised or other shares issued, our stockholders may experience further dilution. Further, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans, including through an “at-the-market” equity offering program. Any debt financing that we are able to obtain may involve operating covenants that restrict our business. To the extent that we raise additional funds through any new collaboration and licensing arrangements, we may be required to refund certain payments made to us, relinquish some rights to our technologies or product candidates or grant licenses on terms that are not favorable to us.

Our future funding requirements will depend on many uncertain factors.

Our future funding requirements will depend upon many factors, many of which are beyond our control, including, but not limited to:

· the costs to commercialize fostamatinib for the treatment of ITP in the United States, or any other future product candidates, if any such candidate receives regulatory approval for commercial sale;

· our ability to successfully obtain EMA authorization on our MAA for fostamatinib in ITP in Europe;

· the progress and success of clinical trials and preclinical activities (including studies and manufacture of materials) of our product candidates conducted by us;

· the costs and timing of regulatory filings and approvals by us and our collaborators;

· the progress of research and development programs carried out by us and our collaborative partners;

· any changes in the breadth of our research and development programs;

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the ability to achieve the events identified in our collaborative agreements that may trigger payments to us from our collaboration partners;

- our ability to acquire or license other technologies or compounds that we may seek to pursue;

- our ability to manage our growth;

- competing technological and market developments;

- the costs and timing of obtaining, enforcing and defending our patent and other intellectual property rights; and

- expenses associated with any unforeseen litigation, including any arbitration and securities class action lawsuits.

Insufficient funds may require us to delay, scale back or eliminate some or all of our commercial efforts and/or research and development programs, to reduce personnel and operating expenses, to lose rights under existing licenses or to relinquish greater or all rights to product candidates at an earlier stage of development or on less favorable terms than

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we would otherwise choose or may adversely affect our ability to operate as a going concern.

There is a high risk that drug discovery and development efforts might not generate successful product candidates.

At the present time, a significant portion of our operations are focused on various stages of drug identification and development. We currently have various product candidates in the clinical testing stage. In our industry, it is statistically unlikely that the limited number of compounds that we have identified as potential product candidates will actually lead to successful product development efforts. We have invested a significant portion of our efforts and financial resources into the development of fostamatinib. Our ability to generate product revenue, which will not occur until after regulatory approval, if ever, will depend on the successful development, regulatory approval and eventual commercialization of one of our product candidates.

Our compounds in clinical trials and our future leads for potential drug compounds are subject to the risks and failures inherent in the development of pharmaceutical products. These risks include, but are not limited to, the inherent difficulty in selecting the right drug and drug target and avoiding unwanted side effects, as well as unanticipated problems relating to product development, testing, enrollment, obtaining regulatory approvals, maintaining regulatory compliance, manufacturing, competition and costs and expenses that may exceed current estimates. In future clinical trials, we or our partners may discover additional side effects and/or higher frequency of side effects than those observed in previously completed clinical trials. The results of preliminary and mid-stage clinical trials do not necessarily predict clinical or commercial success, and larger later-stage clinical trials may fail to confirm the results observed in the previous clinical trials. Similarly, a clinical trial may show that a product candidate is safe and effective for certain patient populations in a particular indication, but other clinical trials may fail to confirm those results in a subset of that population or in a different patient population, which may limit the potential market for that product candidate. With respect to our own compounds in development, we have established anticipated timelines with respect to the initiation of clinical trials based on existing knowledge of the compounds. However, we cannot provide assurance that we will meet any of these timelines for clinical development. Additionally, the initial results of a completed earlier clinical trial of a product candidate do not necessarily predict final results and the results may not be repeated in later clinical trials.

Because of the uncertainty of whether the accumulated preclinical evidence (pharmacokinetic, pharmacodynamic, safety and/or other factors) or early clinical results will be observed in later clinical trials, we can make no assurances regarding the likely results from our future clinical trials or the impact of those results on our business. If our clinical trials fail to meet the primary efficacy endpoints, the commercial prospects of our business may be harmed, our ability to generate product revenues may be delayed or eliminated or we may be forced to undertake other strategic alternatives that are in our shareholders' best interests, including cost reduction measures. If we are unable to obtain adequate financing or engage in a strategic transaction on commercially reasonable terms or at all, we may be required to implement further cost reduction strategies which could significantly impact activities related to our commercial efforts and/or research and development of our future product candidates, and could significantly harm our business, financial condition and results of operations. In addition, these cost reduction strategies could cause us to further curtail our operations or take other actions that would adversely impact our shareholders.

Delays in clinical testing could result in increased costs to us.

We may not be able to initiate or continue clinical studies or trials for our product candidates if we are unable to locate and enroll a sufficient number of eligible patients to participate in these clinical trials as required by the FDA or other regulatory authorities. Even if we are able to enroll a sufficient number of patients in our clinical trials, if the pace of enrollment is slower than we expect, the development costs for our product candidates may increase and the completion of our clinical trials may be delayed or our clinical trials could become too expensive to complete. Significant delays in clinical testing could materially impact our product development costs and timing. Our estimates regarding timing are based on a number of assumptions, including assumptions based on past experience with our other clinical programs. If we are unable to enroll the patients in these trials at the projected rate, the completion of the clinical program could be delayed and the costs of conducting the program could increase, either of which could harm our business.

Clinical trials can be delayed for a variety of reasons, including delays in obtaining regulatory approval to

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commence a study, delays from scaling up of a study, delays in reaching agreement on acceptable clinical trial agreement terms with prospective clinical sites, delays in obtaining institutional review board approval to conduct a study at a prospective clinical site or delays in recruiting subjects to participate in a study. In addition, we typically rely on third-party clinical investigators to conduct our clinical trials and other third-party organizations to oversee the operations of such trials and to perform data collection and analysis. The clinical investigators are not our employees, and we cannot control the amount or timing of resources that they devote to our programs. Failure of the third-party organizations to meet their obligations could adversely affect clinical development of our products. As a result, we may face additional delaying factors outside our control if these parties do not perform their obligations in a timely fashion. For example, any number of those issues could arise with our clinical trials causing a delay. Delays of this sort could occur for the reasons identified above or other reasons. If we have delays in conducting the clinical trials or obtaining regulatory approvals, our product development costs will increase. For example, we may need to make additional payments to third-party investigators and organizations to retain their services or we may need to pay recruitment incentives. If the delays are significant, our financial results and the commercial prospects for our product candidates will be harmed, and our ability to become profitable will be delayed. Moreover, these third-party investigators and organizations may also have relationships with other commercial entities, some of which may compete with us. If these third-party investigators and organizations assist our competitors at our expense, it could harm our competitive position.

We have obtained orphan drug designation from the FDA for fostamatinib for the treatment of ITP and AIHA, but we may not be able to obtain or maintain orphan drug designation or exclusivity for fostamatinib for the treatment of ITP, warm AIHA or our other product candidates, or we may be unable to maintain the benefits associated with orphan drug designation, including the potential for market exclusivity.

We have obtained orphan drug designation in the United States for fostamatinib for the treatment of ITP and AIHA. We may seek orphan drug designation for other product candidates in the future. Under the Orphan Drug Act, the FDA may grant orphan drug designation to a drug or biologic intended to treat a rare disease or condition, which is defined as one occurring in a patient population of fewer than 200,000 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 financial incentives such as opportunities for grant funding towards clinical trial costs, tax advantages and user-fee waivers. In addition, if a product 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, including a full NDA, to market the same drug for the same indication for seven years, except in limited circumstances, such as a showing of clinical superiority to the product with orphan drug exclusivity or where the manufacturer is unable to assure sufficient product quantity.

We cannot assure you that any future application for orphan drug designation with respect to any other product candidate will be granted. If we are unable to obtain orphan drug designation with respect to other product candidates in the United States, we will not be eligible to obtain the period of market exclusivity that could result from orphan drug designation or be afforded the financial incentives associated with orphan drug designation. Even though we have received orphan drug designation for fostamatinib for the treatment of ITP and warm AIHA, we may not be the first to obtain marketing approval for the orphan-designated indication due to the uncertainties associated with developing pharmaceutical products. In addition, exclusive marketing rights in the United States for fostamatinib for

the treatment of ITP, AIHA or any future product candidate 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 for a product, 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 product is approved, the FDA can subsequently approve the same drug with the same active moiety for the same condition if the FDA concludes that the later drug is 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.

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Our research and development efforts will be seriously jeopardized if we are unable to attract and retain key employees and relationships.

As a small company, our success depends on the continued contributions of our principal management and scientific personnel and on our ability to develop and maintain important relationships with leading academic institutions, scientists and companies in the face of intense competition for such personnel. In particular, our research programs depend on our ability to attract and retain highly skilled chemists, other scientists, and development, regulatory and clinical personnel. If we lose the services of any of our key personnel, our research and development efforts could be seriously and adversely affected. Our employees can terminate their employment with us at any time.

Our success as a company is uncertain due to our history of operating losses and the uncertainty of any future profitability.

We incurred a loss from operations of approximately $72.7 million during the year ended December 31, 2018. Other than for 2010, we have historically incurred losses from operations each year since we were incorporated in June 1996, due in large part to the significant research and development expenditures required to identify and validate new product candidates and pursue our development efforts, and recently our significant expenses related to the costs of our ongoing commercial launch of TAVALISSE. We expect to continue to incur losses from operations, at least in the next twelve months, and there can be no assurance that we will generate annual operating income in the foreseeable future. Currently, our potential sources of revenues are our sales of TAVALISE, upfront payments, research and development contingent payments and royalty payments pursuant to our collaboration arrangements, which may never materialize if our collaborators do not achieve certain events or generate net sales to which these contingent payments are dependent on. If our future drug candidates fail or do not gain regulatory approval, or if our drugs do not achieve sustainable market acceptance, we may not be profitable. As of December 31, 2018, we had an accumulated deficit of approximately $1.2 billion. The extent of our future losses or profitability, if any, is highly uncertain.

If our corporate collaborations or license agreements are unsuccessful, or if we fail to form new corporate collaborations or license agreements, our research and development efforts could be delayed.

Our strategy depends upon the formation and sustainability of multiple collaborative arrangements and license agreements with third parties now and in the future. We rely on these arrangements for not only financial resources, but also for expertise we need now and in the future relating to clinical trials, manufacturing, sales and marketing, and for licenses to technology rights. To date, we have entered into several such arrangements with corporate collaborators; however, we do not know if these collaborations or additional collaborations with third parties, if any, will dedicate sufficient resources or if any development or commercialization efforts by third parties will be successful. In addition, our corporate collaborators may delay clinical trials, provide insufficient funding for a clinical

trial program, stop a clinical trial or abandon a drug candidate or development program. Should a collaborative partner fail to develop or commercialize a compound or product to which it has rights from us for any reason, including corporate restructuring, such failure might delay our ongoing research and development efforts, because we might not receive any future payments, and we would not receive any royalties associated with such compound or product. We conducted a Phase 3 clinical program to study fostamatinib in ITP on our own. We may seek another collaborator or licensee in the future for clinical development and commercialization of fostamatinib, as well as our other clinical programs, which we may not be able to obtain on commercially reasonable terms or at all. If we are unable to form new collaborations or enter into new license agreements, our research and development efforts could be delayed. In addition, the continuation of some of our partnered drug discovery and development programs may be dependent on the periodic renewal of our corporate collaborations.

Each of our collaborations could be terminated by the other party at any time, and we may not be able to renew these collaborations on acceptable terms, if at all, or negotiate additional corporate collaborations on acceptable terms, if at all. If these collaborations terminate or are not renewed, any resultant loss of revenues from these collaborations or loss of the resources and expertise of our collaborative partners could adversely affect our business.

Conflicts also might arise with collaborative partners concerning proprietary rights to particular compounds.

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While our existing collaborative agreements typically provide that we retain milestone payments, royalty rights and/or revenue sharing with respect to drugs developed from certain compounds or derivative compounds, any such payments or royalty rights may be at reduced rates, and disputes may arise over the application of payment provisions or derivative payment provisions to such drugs, and we may not be successful in such disputes. For example, in September 2018, BerGenBio served us with a notice of arbitration seeking declaratory relief related to the interpretation of provisions under our June 2011 license agreement, particularly as they relate to the rights and obligations of the parties in the event of the license or sale of a product in the program by BerGenBio and/or the sale of BerGenBio to a third party. The arbitration panel dismissed four of the six declarations sought by BerGenBio, and we thereafter consented to one of the remaining declarations requested by BerGenBio. On February 27, 2019, the arbitration panel issued a determination granting the declaration sought by BerGenBio on the remaining issue, and held that in the event of a sale of shares by BerGenBio's shareholders where there is no monetary benefit to BerGenBio, we would not be entitled to a portion of the proceeds from such a sale. In this circumstance where the revenue share provision is not triggered, the milestone and royalty payment provisions remain in effect. We are still reviewing this determination. While we do not believe that the determination will have a material adverse effect on our operations, cash flows or financial condition, we can make no assurance regarding any such impact. Additionally, the management teams of our collaborators may change for various reasons including due to being acquired. Different management teams or an acquiring company of our collaborators may have different priorities which may have adverse results on the collaboration with us.

We are also a party to various license agreements that give us rights to use specified technologies in our research and development processes. The agreements pursuant to which we have in-licensed technology permit our licensors to terminate the agreements under certain circumstances. If we are not able to continue to license these and future technologies on commercially reasonable terms, our product development and research may be delayed or otherwise adversely affected.

If conflicts arise between our collaborators or advisors and us, any of them may act in their self-interest, which may be adverse to our stockholders' interests.

If conflicts arise between us and our corporate collaborators or scientific advisors, the other party may act in its self-interest and not in the interest of our stockholders. Some of our corporate collaborators are conducting multiple product development efforts within each disease area that is the subject of the collaboration with us or may be acquired or merged with a company having a competing program. In some of our collaborations, we have agreed not to conduct, independently or with any third party, any research that is competitive with the research conducted under our collaborations. Our collaborators, however, may develop, either alone or with others, products in related fields that are competitive with the products or potential products that are the subject of these collaborations. Competing products, either developed by our collaborators or to which our collaborators have rights, may result in their withdrawal of support for our product candidates.

If any of our corporate collaborators were to breach or terminate its agreement with us or otherwise fail to conduct the collaborative activities successfully and in a timely manner, the preclinical or clinical development or commercialization of the affected product candidates or research programs could be delayed or terminated. We

generally do not control the amount and timing of resources that our corporate collaborators devote to our programs or potential products. We do not know whether current or future collaborative partners, if any, might pursue alternative technologies or develop alternative products either on their own or in collaboration with others, including our competitors, as a means for developing treatments for the diseases targeted by collaborative arrangements with us.

Our success is dependent on intellectual property rights held by us and third parties, and our interest in such rights is complex and uncertain.

Our success will depend to a large part on our own, our licensees' and our licensors' ability to obtain and defend patents for each party's respective technologies and the compounds and other products, if any, resulting from the application of such technologies. For example, fostamatinib is covered as a composition of matter in a U.S. issued patent that has an expected expiration date of September 2031, after taking into account patent term adjustment and extension rules.

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As of December 31, 2018, we had 60 pending patent applications and 386 issued and active patents in the United States, as well as corresponding pending foreign patent applications and issued foreign patents. In the future, our patent position might be highly uncertain and involve complex legal and factual questions. For example, we may be involved in post-grant proceedings before the United States Patent and Trademark Office. Post-grant proceedings are complex and expensive legal proceedings and there is no assurance we will be successful in any such proceedings. A post-grant proceeding could result in our losing our patent rights and/or our freedom to operate and/or require us to pay significant royalties. Additional uncertainty may result because no consistent policy regarding the breadth of legal claims allowed in biotechnology patents has emerged to date. Accordingly, we cannot predict the breadth of claims allowed in our or other companies' patents.

Because the degree of future protection for our proprietary rights is uncertain, we cannot assure you that:

- we were the first to make the inventions covered by each of our pending patent applications;
- we were the first to file patent applications for these inventions;
- others will not independently develop similar or alternative technologies or duplicate any of our technologies;
- any of our pending patent applications will result in issued patents;
- any patents issued to us or our collaborators will provide a basis for commercially-viable products or will provide us with any competitive advantages or will not be challenged by third parties;
- we will develop additional proprietary technologies that are patentable; or
- the patents of others will not have a negative effect on our ability to do business.

We rely on trade secrets to protect technology where we believe patent protection is not appropriate or obtainable; however, trade secrets are difficult to protect. While we require employees, collaborators and consultants to enter into confidentiality agreements, we may not be able to adequately protect our trade secrets or other proprietary information in the event of any unauthorized use or disclosure or the lawful development by others of such information.

We are a party to certain in-license agreements that are important to our business, and we generally do not control the prosecution of in-licensed technology. Accordingly, we are unable to exercise the same degree of control over this intellectual property as we exercise over our internally-developed technology. Moreover, some of our academic institution licensors, research collaborators and scientific advisors have rights to publish data and information in

which we have rights. If we cannot maintain the confidentiality of our technology and other confidential information in connection with our collaborations, our ability to receive patent protection or protect our proprietary information may otherwise be impaired. In addition, some of the technology we have licensed relies on patented inventions developed using U.S. government resources.

The U.S. government retains certain rights, as defined by law, in such patents, and may choose to exercise such rights. Certain of our in-licenses may be terminated if we fail to meet specified obligations. If we fail to meet such obligations and any of our licensors exercise their termination rights, we could lose our rights under those agreements. If we lose any of our rights, it may adversely affect the way we conduct our business. In addition, because certain of our licenses are sublicenses, the actions of our licensors may affect our rights under those licenses.

If a dispute arises regarding the infringement or misappropriation of the proprietary rights of others, such dispute could be costly and result in delays in our research and development activities and partnering.

Our success will depend, in part, on our ability to operate without infringing or misappropriating the proprietary rights of others. There are many issued patents and patent applications filed by third parties relating to products or processes that are similar or identical to our licensors or ours, and others may be filed in the future. There may also be

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copyrights or trademarks that third parties hold. There can be no assurance that our activities, or those of our licensors, will not violate intellectual property rights of others. We believe that there may be significant litigation in the industry regarding patent and other intellectual property rights, and we do not know if our collaborators or we would be successful in any such litigation. Any legal action against our collaborators or us claiming damages or seeking to enjoin commercial activities relating to the affected products, our methods or processes could:

- require our collaborators or us to obtain a license to continue to use, manufacture or market the affected products, methods or processes, which may not be available on commercially reasonable terms, if at all;
- prevent us from using the subject matter claimed in the patents held by others;
- subject us to potential liability for damages;
- consume a substantial portion of our managerial and financial resources; and
- result in litigation or administrative proceedings that may be costly, whether we win or lose.

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

On December 22, 2017, President Trump signed into law new tax legislation, or the Tax Act, which significantly reforms the Internal Revenue Code of 1986, as amended. The Tax Act, among other things, contains significant changes to corporate taxation, including reduction of the corporate tax rate from a top marginal rate of 35% to a flat rate of 21%; limitation of the tax deduction for interest expense to 30% of adjusted earnings (except for certain small businesses); limitation of the deduction for net operating losses generated after 2017 to 80% of current year taxable income, indefinite carryforward of net operating losses and elimination of net operating loss carrybacks; changes in the treatment of offshore earnings regardless of whether they are repatriated; mandatory capitalization of research and development expenses beginning in 2022; immediate deductions for certain new investments instead of deductions for depreciation expense over time; further deduction limits on executive compensation; and modifying, repealing and creating many other business deductions and credits, including the reduction in the orphan drug credit from 50% to 25% of qualifying expenditures. Our federal net operating loss carryovers will be carried forward indefinitely pursuant to the Tax Act. We continue to examine the impact this tax reform legislation may have on our business. Notwithstanding the reduction in the corporate income tax rate, the overall impact of the Tax Act is uncertain and our business and financial condition could be adversely affected. The impact of this tax reform on holders of our common stock is also uncertain and could be adverse. This periodic report does not discuss any such tax legislation or the manner in which it might affect us or our stockholders in the future. We urge our stockholders to consult with their legal and tax advisors with respect to such legislation.

Our ability to use net operating losses and certain other tax attributes is uncertain and may be limited.

Our ability to use our federal and state net operating losses to offset potential future taxable income and related income taxes that would otherwise be due is dependent upon our generation of future taxable income before the expiration dates of the net operating losses, and we cannot predict with certainty when, or whether, we will generate sufficient taxable income to use all of our net operating losses. Federal net operating losses generated prior to 2018 will continue to be governed by the net operating loss tax rules as they existed prior to the adoption of the new Tax Act, which means that generally they will expire 20 years after they were generated if not used prior thereto. Many states have similar laws. Accordingly, our federal and state net operating losses could expire unused and be unavailable to offset future income tax liabilities. Under the newly enacted Tax Act, federal net operating losses incurred in 2018 and in future years may be carried forward indefinitely, but the deductibility of such federal net operating losses is limited to 80% of current year taxable income. It is uncertain if and to what extent various states will conform to the newly enacted federal tax law. In addition, utilization of net operating losses to offset potential future taxable income and related income taxes that would otherwise be due is subject to annual limitations under the "ownership change" provisions of Sections 382 and 383 of the Internal Revenue Code of 1986, as amended (Internal Revenue Code) and similar state provisions, which may result in the expiration of net operating losses before future utilization. In general, under the Code, if a corporation undergoes an "ownership change," generally defined as a greater than 50% change (by

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value) in its equity ownership over a three-year period, the corporation's ability to use its pre-change net operating losses and other pre-change tax attributes (such as research and development credit carryforwards) to offset its post-change taxable income or taxes may be limited. Our equity offerings and other changes in our stock ownership, some of which are outside of our control, may have resulted or could in the future result in an ownership change. Although we have completed studies to provide reasonable assurance that an ownership change limitation would not apply, we cannot be certain that a taxing authority would reach the same conclusion. If, after a review or audit, an ownership change limitation were to apply, utilization of our domestic net operating losses and tax credit carryforwards could be limited in future periods and a portion of the carryforwards could expire before being available to reduce future income tax liabilities.

Because we expect to be dependent upon collaborative and license agreements, we might not meet our strategic objectives.

Our ability to generate revenue in the near term depends on the timing of recognition of certain upfront payments, achievement of certain payment triggering events with our existing collaboration agreements and our ability to enter into additional collaborative agreements with third parties. Our ability to enter into new collaborations and the revenue, if any, that may be recognized under these collaborations is highly uncertain. If we are unable to enter into one or more new collaborations, our business prospects could be harmed, which could have an immediate adverse effect on our ability to continue to develop our compounds and on the trading price of our stock. Our ability to enter into a collaboration may be dependent on many factors, such as the results of our clinical trials, competitive factors and the fit of one of our programs with another company's risk tolerance, including toward regulatory issues, patent portfolio, clinical pipeline, the stage of the available data, particularly if it is early, overall corporate goals and financial position.

To date, a portion of our revenues have been related to the research or transition phase of each of our collaborative agreements. Such revenues are for specified periods, and the impact of such revenues on our results of operations is at least partially offset by corresponding research costs. Following the completion of the research or transition phase of each collaborative agreement, additional revenues may come only from payments triggered by milestones and/or the achievement of other contingent events, and royalties, which may not be paid, if at all, until certain conditions are met. This risk is heightened due to the fact that unsuccessful research efforts may preclude us from receiving any contingent payments under these agreements. Our receipt of revenues from collaborative arrangements is also significantly affected by the timing of efforts expended by us and our collaborators and the timing of lead compound identification. We have received payments from our collaborations with Grifols, Kissei, Aclaris, BMS, AZ, BerGenBio, Janssen Pharmaceutica N.V., a division of Johnson & Johnson, Novartis Pharma A.G., Daiichi, Merck & Co., Inc., Merck Serono and Pfizer. Under many agreements, future payments may not be earned until the collaborator has advanced product candidates into clinical testing, which may never occur or may not occur until some time well into the future. If we are not able to generate revenue under our collaborations when and in accordance with our expectations or the expectations of industry analysts, this failure could harm our business and have an immediate adverse effect on the trading price of our common stock.

Our business requires us to generate meaningful revenue from royalties and licensing agreements. To date, we have not received any revenue from royalties for the commercial sale of drugs, and we do not know when we will receive any such revenue, if at all.

Securities class action lawsuits or other litigation could result in substantial damages and may divert management's time and attention from our business.

We have been subject to class action lawsuits in the past, including a securities class action lawsuit commenced in the United States District Court for the Northern District of California in February 2009, that was ultimately dismissed in November 2012. However, we may be subject to similar or completely unrelated claims in the future, such as those that might occur if there was to be a change in our corporate strategy. These and other lawsuits are subject to inherent uncertainties, and the actual costs to be incurred relating to the lawsuit will depend upon many unknown factors. The outcome of litigation is necessarily uncertain, and we could be forced to expend significant resources in the defense of such suits, and we may not prevail. Monitoring and defending against legal actions is time-consuming for our management and detracts from our ability to fully focus our internal resources on our business activities. In addition, we

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may incur substantial legal fees and costs in connection with any such litigation. We have not established any reserves for any potential liability relating to any such potential lawsuits. It is possible that we could, in the future, incur judgments or enter into settlements of claims for monetary damages. A decision adverse to our interests on any such actions could result in the payment of substantial damages, or possibly fines, and could have a material adverse effect on our cash flow, results of operations and financial position.

Global economic conditions could adversely impact our business.

The U.S. government has indicated its intent to alter its approach to international trade policy and in some cases to renegotiate, or potentially terminate, certain existing bilateral or multi-lateral trade agreements and treaties with foreign countries, including the North American Free Trade Agreement ("NAFTA"). In addition, the U.S. government has initiated or is considering imposing tariffs on certain foreign goods. Related to this action, certain foreign governments, including China, have instituted or are considering imposing tariffs on certain U.S. goods. It remains unclear what the U.S. Administration or foreign governments will or will not do with respect to tariffs, NAFTA or other international trade agreements and policies. A trade war or other governmental action related to tariffs or international trade agreements or policies has the potential to disrupt our research activities, affect our suppliers and/or the U.S. economy or certain sectors thereof and, thus, could adversely impact our businesses.

If our competitors develop technologies that are more effective than ours, our commercial opportunity will be reduced or eliminated.

The biotechnology and pharmaceutical industries are intensely competitive and subject to rapid and significant technological change. Many of the drugs that we are attempting to discover will be competing with existing therapies. In addition, a number of companies are pursuing the development of pharmaceuticals that target the same diseases and conditions that we are targeting. For example, the commercialization of new pharmaceutical products is highly competitive, and we face substantial competition with respect to TAVALISSE in which there are existing therapies and drug candidates in development for the treatment of ITP that may be alternative therapies to TAVALISSE. Many of our competitors, including a number of large pharmaceutical companies that compete directly with us, have significantly greater financial resources and expertise commercializing approved products than we do. Also, many of our competitors are large pharmaceutical companies that will have a greater ability to reduce prices for their competing drugs in an effort to gain market share and undermine the value proposition that we might otherwise be able to offer to payers. We face, and will continue to face, intense competition from pharmaceutical and biotechnology companies, as well as from academic and research institutions and government agencies, both in the United States and abroad. Some of these competitors are pursuing the development of pharmaceuticals that target the same diseases and conditions as our research programs. Our competitors including fully integrated pharmaceutical companies have extensive drug discovery efforts and are developing novel small-molecule pharmaceuticals. We also face significant competition from organizations that are pursuing the same or similar technologies, including the discovery of targets that are useful in compound screening, as the technologies used by us in our drug discovery efforts.

Competition may also arise from:

· new or better methods of target identification or validation;

· other drug development technologies and methods of preventing or reducing the incidence of disease;

· new small molecules; or

· other classes of therapeutic agents.

Our competitors or their collaborative partners may utilize discovery technologies and techniques or partner with collaborators in order to develop products more rapidly or successfully than we or our collaborators are able to do. Many of our competitors, particularly large pharmaceutical companies, have substantially greater financial, technical and human resources and larger research and development staffs than we do. In addition, academic institutions, government agencies and other public and private organizations conducting research may seek patent protection with respect to

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potentially competitive products or technologies and may establish exclusive collaborative or licensing relationships with our competitors.

We believe that our ability to compete is dependent, in part, upon our ability to create, maintain and license scientifically-advanced technology and upon our and our collaborators' ability to develop and commercialize pharmaceutical products based on this technology, as well as our ability to attract and retain qualified personnel, obtain patent protection or otherwise develop proprietary technology or processes and secure sufficient capital resources for the expected substantial time period between technological conception and commercial sales of products based upon our technology. The failure by any of our collaborators or us in any of those areas may prevent the successful commercialization of our potential drug targets.

Many of our competitors, either alone or together with their collaborative partners, have significantly greater experience than we do in:

· identifying and validating targets;

· screening compounds against targets; and

· undertaking preclinical testing and clinical trials.

Accordingly, our competitors may succeed in obtaining patent protection, identifying or validating new targets or discovering new drug compounds before we do.

Our competitors might develop technologies and drugs that are more effective or less costly than any that are being developed by us or that would render our technology and product candidates obsolete and noncompetitive. In addition, our competitors may succeed in obtaining the approval of the FDA or other regulatory agencies for product candidates more rapidly. Companies that complete clinical trials, obtain required regulatory agency approvals and commence commercial sale of their drugs before us may achieve a significant competitive advantage, including certain patent and FDA marketing exclusivity rights that would delay or prevent our ability to market certain products. Any drugs resulting from our research and development efforts, or from our joint efforts with our existing or future collaborative partners, might not be able to compete successfully with competitors' existing or future products or obtain regulatory approval in the United States or elsewhere.

We face and will continue to face intense competition from other companies for collaborative arrangements with pharmaceutical and biotechnology companies, for establishing relationships with academic and research institutions and for licenses to additional technologies. These competitors, either alone or with their collaborative partners, may

succeed in developing technologies or products that are more effective than ours.

Our ability to compete successfully will depend, in part, on our ability to:

- identify and validate targets;
- discover candidate drug compounds that interact with the targets we identify;
- attract and retain scientific and product development personnel;
- obtain patent or other proprietary protection for our new drug compounds and technologies; and
- enter commercialization agreements for our new drug compounds.

Our stock price may be volatile, and our stockholders' investment in our common stock could decline in value.

The market prices for our common stock and the securities of other biotechnology companies have been highly volatile and may continue to be highly volatile in the future. The following factors, in addition to other risk factors

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described in this section, may have a significant impact on the market price of our common stock:

- the progress and success of our clinical trials and preclinical activities (including studies and manufacture of materials) of our product candidates conducted by us;
- our ability to sell TAVALISSE in the United States;
- our ability to enter into partnering opportunities across our pipeline;
- the receipt or failure to receive the additional funding necessary to conduct our business;
- selling by large stockholders;
- presentations of detailed clinical trial data at medical and scientific conferences and investor perception thereof;
- announcements of technological innovations or new commercial products by our competitors or us;
- developments concerning proprietary rights, including patents;
- developments concerning our collaborations;
- publicity regarding actual or potential medical results relating to products under development by our competitors or us;
- regulatory developments in the United States and foreign countries;
- changes in the structure of healthcare payment systems;
- litigation or arbitration;
- economic and other external factors or other disaster or crisis; and
- period-to-period fluctuations in financial results.

If we fail to continue to meet the listing standards of Nasdaq, our common stock may be delisted, which could have a material adverse effect on the liquidity of our common stock.

Our common stock is currently listed on the Nasdaq Global Market. The Nasdaq Stock Market LLC has requirements that a company must meet in order to remain listed on Nasdaq. In particular, Nasdaq rules require us to maintain a minimum bid price of $1.00 per share of our common stock. If the closing bid price of our common stock were to fall below $1.00 per share for 30 consecutive trading days or we do not meet other listing requirements, we would fail to be in compliance with Nasdaq listing standards. There can be no assurance that we will continue to meet the minimum bid price requirement, or any other requirement in the future. If we fail to meet the minimum bid price requirement, The Nasdaq Stock Market LLC may initiate the delisting process with a notification letter. If we were to receive such a notification, we would be afforded a grace period of 180 calendar days to regain compliance with the minimum bid price requirement. In order to regain compliance, shares of our common stock would need to maintain a minimum closing bid price of at least $1.00 per share for a minimum of 10 consecutive trading days. In addition, we may be unable to meet other applicable Nasdaq listing requirements, including maintaining minimum levels of stockholders' equity or market values of our common stock in which case, our common stock could be delisted. If our common stock were to be delisted, the liquidity of our common stock would be adversely affected and the market price of our common stock could decrease.

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The vote by the United Kingdom (U.K.) electorate in favor of the U.K.'s exit from the E.U. could adversely impact our business, results of operations and financial condition.

The passage of the referendum on the U.K.'s membership in the E.U., referred to as "Brexit," in June 2016 resulted in a determination that the U.K. should exit the E.U. In March 2017, the U.K. government initiated the withdrawal process, with the U.K. scheduled to exit the E.U. by April 2019. Such an exit from the E.U. could cause uncertainty in the credit markets and financial services industry which could result to lower interest paid on certain of our investments and the value of certain securities we hold may decline in the future, which could negatively affect our financial condition, results of operations and cash flow, as well as limit our future access to the capital markets. The Brexit could also cause disruptions to and create uncertainty surrounding the business environment in which we operate. For example, we conduct clinical trials in the U.K. and other E.U. member states. Although the terms of U.K.'s exit from and its future relationship with E.U. are unknown, it is possible that there will be increased regulatory complexities which can disrupt the timing of our clinical trials and regulatory approvals, if any, of our current and future product candidates.

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

The testing and marketing of medical products and the sale of any products for which we obtain marketing approval exposes us to the risk of product liability claims. Product liability claims might be brought against us by consumers, health care providers, pharmaceutical companies or others selling or otherwise coming into contact with our products. If we cannot successfully defend ourselves against product liability claims, we may incur substantial liabilities or be required to limit commercialization of our products. We carry product liability insurance that is limited in scope and amount and may not be adequate to fully protect us against product liability claims. If and when we obtain marketing approval for our product candidates, we intend to expand our insurance coverage to include the sale of commercial products; however, we may be unable to obtain product liability insurance on commercially reasonable terms or in adequate amounts. Our inability to obtain sufficient product liability insurance at an acceptable cost to protect against potential product liability claims could prevent or inhibit the commercialization of pharmaceutical products we develop, alone or with corporate collaborators. We, or our corporate collaborators, might not be able to obtain insurance at a reasonable cost, if at all. While under various circumstances we are entitled to be indemnified against losses by our corporate collaborators, indemnification may not be available or adequate should any claim arise.

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

We work extensively with various scientific consultants and advisors. The potential success of our drug discovery and development programs depends, in part, on continued collaborations with certain of these consultants and advisors. We, and various members of our management and research staff, rely on certain of these consultants and advisors for expertise in our research, regulatory and clinical efforts. Our scientific advisors are not our employees and may have

commitments to, or consulting or advisory contracts with, other entities that may limit their availability to us. We do not know if we will be able to maintain such consulting agreements or that such scientific advisors will not enter into consulting arrangements, exclusive or otherwise, with competing pharmaceutical or biotechnology companies, any of which would have a detrimental impact on our research objectives and could have a material adverse effect on our business, financial condition and results of operations.

If we use biological and hazardous materials in a manner that causes injury or violates laws, we may be liable for damages, penalties or fines.

Our research and development activities involve the controlled use of potentially harmful biological materials as well as hazardous materials, chemicals, animals, and various radioactive compounds. We cannot completely eliminate the risk of accidental contamination or injury from the use, storage, handling or disposal of these animals and materials. In the event of contamination or injury, we could be held liable for damages that result or for penalties or fines that may be imposed, and such liability could exceed our resources. We are also subject to federal, state and local laws and regulations governing the use, storage, handling and disposal of these materials and specified waste products. The cost of

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compliance with, or any potential violation of, these laws and regulations could be significant.

Our internal computer systems, or those used by our contract research organizations or other contractors or consultants, may fail or suffer security breaches.

Despite the implementation of security measures, our internal computer systems and those of our contract research organizations 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 disruption of our drug development programs. For example, the loss of clinical trial data from completed or ongoing clinical trials for a product candidate could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach were to result in a loss of or damage to our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability and the further development of any product candidates could be delayed.

Our facilities are located near known earthquake fault zones, and the occurrence of an earthquake or other catastrophic disaster could cause damage to our facilities and equipment, which could require us to cease or curtail operations.

Our facilities are located in the San Francisco Bay Area near known earthquake fault zones and are vulnerable to significant damage from earthquakes. We are also vulnerable to damage from other types of disasters, including fires, floods, power loss, communications failures and similar events. If any disaster were to occur, our ability to operate our business at our facilities would be seriously, or potentially completely, impaired, and our research could be lost or destroyed. In addition, the unique nature of our research activities and of much of our equipment could make it difficult for us to recover from a disaster. The insurance we maintain may not be adequate to cover our losses resulting from disasters or other business interruptions.

Future equity issuances or a sale of a substantial number of shares of our common stock may cause the price of our common stock to decline.

Because we will continue to need additional capital in the future to continue to expand our business and our research and development activities, among other things, we may conduct additional equity offerings. For example, under the universal shelf registration statement filed by us in March 2018 and declared effective by the SEC in April 2018, we may offer and sell any combination of common stock, preferred stock, debt securities and warrants in one or more offerings, up to a cumulative value of $200 million. To date, we have $128.2 million remaining under such universal shelf registration statement. If we or our stockholders sell, or if it is perceived that we or they will sell, substantial amounts of our common stock (including shares issued upon the exercise of options and warrants) in the public

market, the market price of our common stock could fall. A decline in the market price of our common stock could make it more difficult for us to sell equity or equity-related securities in the future at a time and price that we deem appropriate. Furthermore, if we obtain funds through a credit facility or through the issuance of debt or preferred securities, these securities would likely have rights senior to the rights of our common stockholders, which could impair the value of our common stock.

Anti-takeover provisions in our charter documents and under Delaware law may make an acquisition of us, which may be beneficial to our stockholders, more difficult.

Provisions of our amended and restated certificate of incorporation and bylaws, as well as provisions of Delaware law, could make it more difficult for a third party to acquire us, even if doing so would benefit our stockholders. These provisions:

· establish that members of the board of directors may be removed only for cause upon the affirmative vote of stockholders owning a majority of our capital stock;

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- authorize the issuance of "blank check" preferred stock that could be issued by our board of directors to increase the number of outstanding shares and thwart a takeover attempt;

- limit who may call a special meeting of stockholders;

- prohibit stockholder action by written consent, thereby requiring all stockholder actions to be taken at a meeting of our stockholders;

- establish advance notice requirements for nominations for election to the board of directors or for proposing matters that can be acted upon at stockholder meetings;

- provide for a board of directors with staggered terms; and

- provide that the authorized number of directors may be changed only by a resolution of our board of directors.

In addition, Section 203 of the Delaware General Corporation Law, which imposes certain restrictions relating to transactions with major stockholders, may discourage, delay or prevent a third party from acquiring us.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

We currently lease facilities consisting of approximately 147,000 square feet of research and office space located at 1180 Veterans Boulevard, South San Francisco, California, of which, commencing in December 2014, we sublet approximately 57,000 square feet of our research and office space to an unrelated third party. In July 2017, we exercised our option to extend the term of our lease for another five years. Accordingly, we also extended the term of our sublease to an unrelated party. Both the lease and the sublease expire in January 2023. We believe our facilities are in good operating condition and that the leased real property that we still occupy is adequate for all present and near term uses.

Item 3. Legal Proceedings

None.

Item 4. Mine Safety Disclosures

Not applicable.

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PART II

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

Market Information

Our common stock commenced trading publicly on the Nasdaq Global Market under the symbol "RIGL" on December 7, 2000.

Holders

As of February 21, 2019, there were approximately 88 stockholders of record of our common stock.

Dividends

We have not paid any cash dividends on our common stock and currently do not plan to pay any cash dividends in the foreseeable future.

Performance Measurement Comparison

The graph below shows the cumulative total stockholder return of an investment of $100 (and the reinvestment of any dividends thereafter) on December 31, 2013 in (i) our common stock, (ii) the Nasdaq Composite Index and (iii) the Nasdaq Biotechnology Index. The Nasdaq Biotechnology Index is a modified capitalization weighted index that includes securities of Nasdaq listed companies classified according to the Industry Classification Benchmark as either Biotechnology or Pharmaceuticals and which also meet other eligibility criteria. Our stock price performance shown in the graph below is based upon historical data and is not indicative of future stock price performance.

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The following graph and related information shall not be deemed “soliciting material” or be deemed to be “filed” with the SEC, nor shall such information be incorporated by reference into any future filing, except to the extent that we specifically incorporate it by reference into such filing.

COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN*

Among Rigel Pharmaceuticals, Inc., the NASDAQ Composite Index

and the NASDAQ Biotechnology Index

*$100 invested on December 31, 2013 in stock or index, including reinvestment of dividends at fiscal year ending December 31.

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Item 6. Selected Financial Data

The following selected financial data has been derived from our audited financial statements. The information set forth below is not necessarily indicative of our results of future operations and should be read in conjunction with "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Item 8. Financial Statements and Supplementary Data" included elsewhere in this Annual Report on Form 10 K.

	Fiscal Year Ended December 31,				
	2018	2017	2016	2015	2014
	(in thousands, except per share amounts)				
Statements of Operations Data:					
Contract revenues from collaborations					
Product sales, net	$ 13,947	$ —	$ —	$ —	$ —
Contract revenues from collaborations	30,562	4,484	20,383	28,895	8,250
Total revenues	44,509	4,484	20,383	28,895	8,250
Costs and expenses:					
Cost of product sales	287	—	—	—	—
Research and development	46,903	46,269	63,446	62,825	67,696
Selling, general and administrative	70,002	37,831	20,908	17,813	22,501
Restructuring charges	—	—	5,770	—	—
Loss on sublease	—	—	—	—	9,302
Total costs and expenses	117,192	84,100	90,124	80,638	99,499
Loss from operations	(72,683)	(79,616)	(69,741)	(51,743)	(91,249)
Interest income	2,203	892	437	222	243
Gain on disposal of assets	—	732	88	57	98
Net loss	$ (70,480)	$ (77,992)	$ (69,216)	$ (51,464)	$ (90,908)
Net loss per share, basic and diluted	$ (0.44)	$ (0.62)	$ (0.73)	$ (0.58)	$ (1.04)
Weighted average shares used in computing net loss per share, basic and diluted	160,529	126,324	94,387	88,434	87,662

	As of December 31,				
	2018	2017	2016	2015	2014
	(in thousands)				
Balance Sheet Data:					
Cash, cash equivalents and short-term investments	$ 128,537	$ 115,751	$ 74,766	$ 126,276	$ 143,159
Working capital	109,253	99,096	53,626	95,228	136,512
Total assets	139,109	119,111	78,134	131,747	154,135
Accumulated deficit	(1,209,334)	(1,138,854)	(1,060,862)	(991,646)	(940,182)
Total stockholders' equity	109,877	100,646	55,027	91,381	128,246

See Note 1 to the Financial Statements for a description of the number of shares used in the computation of basic and diluted loss per share.

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

Overview

We are a biotechnology company dedicated to discovering, developing and providing novel small molecule drugs that significantly improve the lives of patients with immune and hematologic disorders, cancer and rare diseases. Our pioneering research focuses on signaling pathways that are critical to disease mechanisms. Our first FDA approved product is TAVALISSE® (fostamatinib disodium hexahydrate), an oral SYK inhibitor, for the treatment of adult patients with chronic ITP who have had an insufficient response to a previous treatment. Our current clinical programs include an upcoming Phase 3 study of fostamatinib in AIHA and an ongoing Phase 1 study of R835, a proprietary molecule from our IRAK program. In addition, we have product candidates in development with partners BerGenBio, Daiichi Sankyo, and Aclaris Therapeutics.

Business Update

In April 2018, we received FDA approval of our first product TAVALISSE® (fostamatinib disodium hexahydrate), an oral SYK inhibitor, for the treatment of adult patients with chronic immune thrombocytopenia who have had an insufficient response to a previous treatment. TAVALISSE was launched in the U.S. on May 29, 2018. Sales grew approximately 50% in the fourth quarter of 2018 compared to the third quarter of 2018, which was driven, in part, by continued use of the product as an early treatment option in steroid refractory patients and strong continuation of therapy among patients. For the year ended December 31, 2018, we reported $13.9 million in net product sales of TAVALISSE. With our fully integrated commercial team consisting of sales, marketing, market access, and commercial operations functions, we continue to execute on our commercial strategy to access the U.S. ITP market estimated to be over $1.0 billion annually.

Our execution of our global strategy for commercialization of fostamatinib outside of the U.S. has made significant progress since the fourth quarter of 2018. Our recent commercial collaborations with Kissei and Grifols, lay the groundwork for us to advance fostamatinib globally and to access the worldwide ITP market which is estimated to be over $1.8 billion annually. Kissei is a leading Japanese pharmaceutical company with significant development experience and a track record of commercial success in Asian markets. Grifols is one of the largest intravenous immunoglobulin (IVIG) providers globally that has established relationships with European hematologists and hematologist/oncologists, as well as a distribution infrastructure across the E.U. Fostamatinib is on track for potential E.U. approval by the end of 2019, which could enable a product launch in initial European markets as early as 2020.

In October 2018, we entered into an exclusive license and supply agreement with Kissei to develop and commercialize fostamatinib in all current and potential indications in Japan, China, Taiwan and the Republic of Korea. Under the agreement, we received an upfront payment of $33.0 million with the potential for up to $147 million in development, regulatory and commercial milestone payments. We will also receive product transfer price payments in the mid to upper twenty percent range based on tiered net sales for the exclusive supply of fostamatinib to Kissei.

In January 2019, we entered into an exclusive license agreement with Grifols to commercialize fostamatinib in all indications, including chronic ITP, AIHA, and IgAN, in Europe and Turkey. Under the agreement, we received an upfront payment of $30.0 million, with the potential for $297.5 million in total regulatory and commercial milestones, which which includes a $20 million payment upon approval from the European Medicines Agency (EMA) for fostamatinib in chronic ITP. We will also receive stepped double-digit royalty payments based on tiered net sales which may reach 30% of net sales. In return, Grifols receives exclusive rights to fostamatinib in human diseases, including chronic ITP, AIHA, and IgAN, in Europe and Turkey. In the event that, in 2021, after the second anniversary of the agreement, fostamatinib has not been approved by the EMA for the treatment of ITP in Europe, Grifols will have the option during a six-month time-frame to terminate the entire agreement which would terminate all their rights to ITP, AIHA, and all other indications. In this limited circumstance, we will pay Grifols $25.0 million and regain all rights to fostamatinib in Europe and other territories. We retain the global rights to fostamatinib outside the Kissei and Grifols territories.

In November 2018, our pivotal Phase 3 trial design for fostamatinib in warm AIHA was submitted to the FDA.

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Results from our recent Phase 2 suggest that fostamatinib could potentially be an effective treatment option. Preparations for patient enrollment in our pivotal trial have begun and we are on track for study initiation in the first half of 2019. For the site selection process, we are leveraging the locations and relationships from our Phase 3 trial in chronic ITP. Additionally, in January 2018, the FDA awarded Orphan Drug Designation to fostamatinib for the treatment of warm AIHA.

In June 2018, we initiated a Phase 1 study to assess safety, tolerability, pharmacokinetics and pharmacodynamics of R835, a proprietary molecule from our IRAK program, in healthy subjects. We have several additional molecules which were discovered in our labs that are currently under development.

In May 2018, we completed an underwritten public offering in which we sold 18,400,000 shares of our common stock pursuant to an effective registration statement at a price to the public of $3.90 per share and received net proceeds of approximately $67.2 million after deducting underwriting discounts and commissions and offering expenses.

Liquidity and Capital Resources

Since inception, we have financed our operations primarily through the sale of equity securities, product sales from TAVALISSE and contract payments under our collaboration agreements. Our commercial launch, research and development activities, including preclinical studies and clinical trials, consume substantial amounts of capital. As of December 31, 2018, we had approximately $128.5 million in cash, cash equivalents and short-term investments. We believe that our existing capital resources will be sufficient to support our current and projected funding requirements, including our ongoing commercial launch of TAVALISSE in the U.S., through at least the next 12 months from the Form 10-K filing date.

Executive Team Appointments

In May 2018, we announced that Dean Schorno was appointed as the Company’s Executive Vice President and Chief Financial Officer. In March 2018, we announced that Stacy Markel was appointed as the Company’s Executive Vice President of Human Resources.

Product Development Programs

Our product portfolio features multiple novel, targeted drug candidates in the therapeutic areas of immunology, hematology, cancer and rare diseases. Please refer to “Part I. Item 1. Business—Product Portfolio” for a detailed discussion of our multiple product candidates in development.

Corporate Collaborations

We conduct research and development programs independently and in connection with our corporate collaborators. Please refer to “Part I. Item 1. Business—Sponsored Research and License Agreements” for a detailed discussion of our corporate collaborations.

Critical Accounting Policies and the Use of Estimates

Our discussion and analysis of our financial condition and results of operations is based upon our financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles (U.S. GAAP). The preparation of these financial statements requires us to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. We evaluate our estimates, including those related to revenue recognition on product sales and collaboration agreements, recoverability of our assets, including accounts receivables and inventories, stock-based compensation and the probability of achievement of corporate performance-based milestone for our performance-based stock option awards, impairment issues, the estimated useful life of assets, and estimated accruals, particularly research and development accruals, on an ongoing basis. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or

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conditions. We believe the following critical accounting policies affect our more significant judgments and estimates used in the preparation of our financial statements:

Revenue Recognition

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 whether arrangements are within the scope of this new guidance, 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 its performance obligation. We apply the five-step model to contracts when it is probable that we will collect the consideration we are entitled to in exchange for the goods or services we transfer to the customer. At contract inception, once the contract is determined to be within the scope of this new guidance, we assess the goods or services promised within each contract and identify, as a performance obligation, 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.

Product Sales

Our revenues from product sales are recognized at net sales price when our customers, the specialty distributors (SDs), obtain control of our product, which occurs at a point in time, upon delivery to such SDs. Under the new revenue recognition guidance, we are required to estimate the transaction price, including variable consideration that is subject to a constraint, in our contracts with our customers. Variable considerations are included in the transaction price to the extent that it is probable that a significant reversal in the amount of cumulative revenue recognized will not occur. Revenue from product sales are recorded net of certain variable considerations which includes estimated government-mandated rebates and chargebacks, distribution fees, estimated product returns and other deductions.

Provisions for estimated returns and other adjustments are provided for in the period the related revenue is recorded. Our estimates are based on available customer and payer data received from the specialty pharmacies and distributors, as well as third-party market research data. Actual amounts of consideration ultimately received may differ from our estimates. If actual results in the future vary from our estimates, we will adjust these estimates, which would affect net product revenue and earnings in the period such variances become known.

Contract Revenues from Collaborations

In the normal course of business, we conduct research and development programs independently and in connection with our corporate collaborators, pursuant to which we license certain rights to our intellectual property to third

parties. The terms of these arrangements typically include payment to us for a combination of one or more of the following: upfront license fees; development, regulatory and commercial milestone payments; product supply services; and royalties on net sales of licensed products.

Upfront License Fees: If the license to our intellectual property is determined to be distinct from the other performance obligations identified in the arrangement, we recognize revenues from upfront license fees allocated to the license when the license is transferred to the licensee and the licensee is able to use and benefit from the license. For licenses that are bundled with other promises, we determine whether the combined performance obligation is satisfied over time or at a point in time. If the combined performance obligation is satisfied over time, we use judgment in determining the appropriate method of measuring progress for purposes of recognizing revenue from the up-front license fees. We evaluate the measure of progress each reporting period and, if necessary, adjust the measure of performance and related revenue recognition.

Development, Regulatory or Commercial Milestone Payments: At the inception of each arrangement that includes payments based the achievement of certain development, regulatory and commercial or launch events, we evaluate whether the milestones are considered probable of being achieved and estimate the amount to be included in the transaction price using the most likely amount method. If it is probable that a significant revenue reversal would not

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occur, the associated milestone value is included in the transaction price. Milestone payments that are not within our or the licensee's control, such as regulatory approvals, are not considered probable of being achieved until uncertainty associated with the approvals has been resolved. The transaction price is then allocated to each performance obligation, on a relative standalone selling price basis, for which we recognize revenue as or when the performance obligations under the contract are satisfied. At the end of each subsequent reporting period, we re-evaluate the probability of achieving such development and regulatory milestones and any related constraint, and if necessary, adjust our estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, and recorded as part of contract revenues from collaborations during the period of adjustment.

Product Supply Services: Arrangements that include a promise for future supply of drug product for either clinical development or commercial supply at the licensee's discretion are generally considered as options. We assess if these options provide a material right to the licensee and if so, they are accounted for as separate performance obligations.

Sales-based Milestone Payments and Royalties: For arrangements that include sales-based royalties, including milestone payments based on the volume of sales, we determine whether the license is deemed to be the predominant item to which the royalties or sales-based milestones relate to and if such is the case, 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 has been allocated has been satisfied (or partially satisfied).

Inventories

We value our inventories at the lower of cost or estimated net realizable value. We determine the cost of inventories using the standard cost method, which approximates actual cost based on a first-in, first-out (FIFO) basis. Prior to the regulatory approval of our product candidates, we incur expenses for the manufacture of drug product that could potentially be available to support the commercial launch of our products. Until the first reporting period when regulatory approval has been received or is otherwise considered probable, we record all such costs as research and development expense. We perform an assessment of the recoverability of capitalized inventories during each reporting period and write down any excess and obsolete inventories to its net realizable value in the period in which the impairment is first identified.

Stock Based Compensation

We have two stock option plans that provide for granting to our officers, directors and all other employees and consultants options to purchase shares of our common stock. We also have our Employee Stock Purchase Plan (Purchase Plan), wherein eligible employees can purchase shares of our common stock at a price per share equal to the lesser of 85% of the fair market value on the first day of the offering period or 85% of the fair market value on the purchase date. The fair value of each option award is estimated on the date of grant using the Black-Scholes option

pricing model which considered our stock price, as well as assumptions regarding a number of complex and subjective variables. These variables include, but are not limited to, volatility, expected term, risk-free interest rate and dividends. We estimate volatility over the expected term of the option using historical share price performance. For expected term, we take into consideration our historical data of options exercised, cancelled and expired. The risk-free rate is based on the U.S. Treasury constant maturity rate. We have not paid and do not expect to pay dividends in the foreseeable future. We use the straight-line attribution method over the requisite employee service period for the entire award in recognizing stock-based compensation expense. We account for forfeitures as they occur.

We granted performance-based stock options to purchase shares of our common stock which will vest upon the achievement of certain corporate performance-based milestones. We determined the fair values of these performance-based stock options using the Black-Scholes option pricing model at the date of grant. For the portion of the performance-based stock options of which the performance condition is considered probable of achievement, we recognize stock-based compensation expense on the related estimated grant date fair values of such options on a straight-line basis from the date of grant up to the date when we expect the performance condition will be achieved. For the performance conditions that are not considered probable of achievement at the grant date or upon quarterly re-evaluation, prior to the event actually occurring, we recognize the related stock-based compensation expense when the event occurs

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or when we can determine that the performance condition is probable of achievement. In those cases, we recognize the change in estimate at the time we determine the condition is probable of achievement (by recognizing stock-based compensation expense as cumulative catch-up adjustment as if we had estimated at the grant date that the performance condition would have been achieved) and recognize the remaining compensation cost up to the date when we expect the performance condition will be achieved, if any.

Research and Development Accruals

We have various contracts with third parties related to our research and development activities. Costs that are incurred but not billed to us as of the end of the period are accrued. We make estimates of the amounts incurred in each period based on the information available to us and our knowledge of the nature of the contractual activities generating such costs. Clinical trial contract expenses are accrued based on units of activity. Expenses related to other research and development contracts, such as research contracts, toxicology study contracts and manufacturing contracts are estimated to be incurred generally on a straight-line basis over the duration of the contracts. Raw materials and study materials not related to our approved drug, purchased for us by third parties are expensed at the time of purchase.

Recent Accounting Pronouncements

For a discussion of new accounting pronouncements, see Note 1, “Summary of Significant Accounting Policies”, in the Notes to Financial Statements included in Part II, Item 8, “Financial Statements and Supplementary Data”.

Results of Operations

Year Ended December 31, 2018, 2017 and 2016

Revenues

	Year Ended December 31,			Aggregate Change 2018 from 2017	Aggregate Change 2017 from 2016
	2018	2017	2016		
	(in thousands)				
Product sales, net	$ 13,947	$ —	$ —	$ 13,947	$ —
Contract revenues from collaborations	30,562	4,484	20,383	26,078	(15,899)
Total revenues	$ 44,509	$ 4,484	$ 20,383	$ 40,025	$ (15,899)

The following table summarizes revenues from each of our customers who individually accounted for 10% or more of our total revenues (as a percentage of total revenues):

	December 31,		
	2018	2017	2016
Kissei	69%	—	—
ASD Healthcare and Oncology Supply	17%	—	—
McKesson Specialty Care Distribution Corporation	11%	—	—
BerGenBio	—	74%	18%
BMS	—	—	82%
Others	3%	26%	—

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Revenues by collaborative partners were:

	Year Ended December 31,			Aggregate Change 2018 from 2017	Aggregate Change 2017 from 2016
	2018	2017	2016		
	(in thousands)				
Kissei	$ 30,562	$ —	$ —	$ 30,562	$ —
BerGenBio	—	$ 3,334	$ 3,666	$ (3,334)	$ (332)
Other third party	—	1,150	—	(1,150)	1,150
BMS	—	—	16,717	—	(16,717)
Total	$ 30,562	$ 4,484	$ 20,383	$ 26,078	$ (15,899)

Product sales for the year ended December 31, 2018 relates to sales of TAVALISSE in the U.S. from the launch in May 2018. There were no product sales during the years ended December 31, 2017 and 2016. We recognize product sales net of discounts and allowances that are described in Note 1—Summary of Significant Accounting Policies of "Part II, Item 8, Financial Statements and Supplementary Data".

Contract revenues from collaborations of $30.6 million during the year ended December 31, 2018 relates to the portion of the $33.0 million upfront fee recognized as revenue upon delivery of license rights to Kissei for the development and commercialization of fostamatinib in all current and potential indications in Japan, China, Taiwan and the Republic of Korea. Contract revenues from collaborations of $4.5 million during the year ended December 31, 2017 is comprised of the $3.3 million payment we received from BerGenBio pursuant to advancing a licensed AXL kinase inhibitor to Phase 2 clinical study and a $1.2 million payment we earned pursuant to a license agreement with a third party. Contract revenues from collaborations of $20.4 million in 2016 were comprised of the $13.4 million amortization of the $30.0 million upfront payment, contingent payment of $3.0 million, and the research service fees we earned from BMS of $290,000, as well as the contingent payment of $3.7 million we received from BerGenBio.

Our potential future revenues may include product sales from TAVALISSE, payments from our current partners and from new partners with whom we enter into agreements in the future, if any, the timing and amount of which is unknown at this time, except as described under Note 15—Subsequent Event of "Part II, Item 8, Financial Statements and Supplementary Data". As of December 31, 2018, we have deferred revenue of $2.4 million which we will recognize as revenue when the product supply is delivered to Kissei. We had no deferred revenue as of December 31, 2017 and 2016.

Cost of Product Sales

Year Ended December 31,			Aggregate Change 2018 from 2017	Aggregate Change 2017 from 2016
2018	2017	2016		
(in thousands)				

Cost of product sales	$ 287	$ —	$ —	$ 287	$ —

We recognized $287,000 in cost of product sales during the year ended December 31, 2018 related to our product, TAVALISSE, which was approved by the FDA in April 2018. Prior to the FDA approval, manufacturing and related costs were charged to research and development expense. Therefore, these costs were not capitalized and as a result, are not fully reflected in the costs of sales during the current period. We will continue to have a lower cost of product sales that excludes the cost of the active pharmaceutical product that was produced prior to FDA approval until we sell TAVALISSE that includes newly manufactured API. We expect that this will be the case for the near-term and as a result, our cost of product sales will be less than we anticipate it will be in future periods. As we produce TAVALISSE in the future, our inventory cost in the Balance Sheet and Cost of Product Sales will increase reflecting the full cost of manufacturing.

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Research and Development Expenses

	Year Ended December 31,			Aggregate Change 2018 from 2017	Aggregate Change 2017 from 2016
	2018	2017	2016		
	(in thousands)				
Research and development expense	$ 46,903	$ 46,269	$ 63,446	$ 634	$ (17,177)
Stock-based compensation expense included in research and development expense	$ 2,321	$ 1,497	$ 3,103	$ 824	$ (1,606)

The increase in research and development expense for the year ended December 31, 2018, compared to the same period in 2017, was primarily due to the increase in personnel and personnel-related costs of $3.5 million, research and development costs for our clinical trials in AIHA of $2.2 million, preclinical program of $2.2 million, and IRAK program of $529,000, partially offset by the decreases in research and development costs due the completion of our pivotal Phase 3 clinical trials in ITP as well as the completion of the related submission of our NDA for fostamatinib in ITP in 2017 of $6.2 million, winding down of the IgAN program of $338,000, and allocated facility costs of $1.3 million. The decrease in research and development expense for the year ended December 31, 2017, compared to the same period in 2016, were primarily due to the decreases in personnel and personnel-related costs of $4.3 million, research supplies of $3.6 million, stock based compensation expense of $1.6 million and facility costs of $2.7 million as a result of the reduction in workforce in September 2016, as well as the decrease in clinical trial costs of $3.4 million primarily due to the completion of the pivotal Phase 3 clinical trials in ITP, partially offset by the increase in costs related to the submission of our NDA for fostamatinib in ITP and advancement of our IRAK program.

We expect our research and development expense in 2019 to increase as we launch our Phase 3 clinical trial in AIHA in 2019.

Our research and development expenditures include costs related to preclinical and clinical trials, scientific personnel, supplies, equipment, consultants, sponsored research, stock-based compensation, and allocated facility costs.

We do not track fully burdened research and development costs separately for each of our drug candidates. We review our research and development expenses by focusing on three categories: research, development, and other. Our research team is focused on creating a portfolio of product candidates that can be developed into small molecule therapeutics in our own proprietary programs or with potential collaborative partners and utilizes our robust discovery engine to rapidly discover and validate new product candidates in our focused range of therapeutic indications. “Research” expenses relate primarily to personnel expenses, lab supplies, fees to third party research consultants and compounds. Our development group leads the implementation of our clinical and regulatory strategies and prioritizes disease indications in which our compounds may be studied in clinical trials. “Development” expenses relate primarily to clinical trials, personnel expenses, costs related to the submission and management of our NDA, lab supplies and fees to third party research consultants. “Other” expenses primarily consist of allocated facilities costs and allocated stock-based compensation expense relating to personnel in research and development groups.

In addition to reviewing the three categories of research and development expenses described in the preceding paragraph, we principally consider qualitative factors in making decisions regarding our research and development programs, which include enrollment in clinical trials and the results thereof, the clinical and commercial potential for our drug candidates and competitive dynamics. We also make our research and development decisions in the context of our overall business strategy, which includes the evaluation of potential collaborations for the development of our drug candidates.

We do not have reliable estimates regarding the timing of our clinical trials. Preclinical testing and clinical development are long, expensive and uncertain processes. In general, biopharmaceutical development involves a series of steps, beginning with identification of a potential target and including, among others, proof of concept in animals and Phase 1, 2 and 3 clinical trials in humans. Significant delays in clinical testing could materially impact our product development costs and timing of completion of the clinical trials. We do not know whether planned clinical trials will begin on time, will need to be halted or revamped or will be completed on schedule, or at all. Clinical trials can be delayed for a variety of reasons, including delays in obtaining regulatory approval to commence a trial, delays from scale

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up, delays in reaching agreement on acceptable clinical trial agreement terms with prospective clinical sites, delays in obtaining institutional review board approval to conduct a clinical trial at a prospective clinical site or delays in recruiting subjects to participate in a clinical trial.

We currently do not have reliable estimates of total costs for a particular drug candidate to reach the market. Our potential products are subject to a lengthy and uncertain regulatory process that may involve unanticipated additional clinical trials and may not result in receipt of the necessary regulatory approvals. Failure to receive the necessary regulatory approvals would prevent us from commercializing the product candidates affected. In addition, clinical trials of our potential products may fail to demonstrate safety and efficacy, which could prevent or significantly delay regulatory approval.

The following table presents our total research and development expenses by category.

	Year Ended December 31,			
	2018	2017	2016	From January 1, 2007* to December 31, 2018
	(in thousands)			
Categories:				
Research	$ 10,301	$ 9,958	$ 19,909	$ 236,667
Development	28,693	27,936	30,951	370,862
Other	7,909	8,375	12,586	238,235
	$ 46,903	$ 46,269	$ 63,446	$ 845,764

*We started tracking research and development expenses by category on January 1, 2007.

“Other” expenses mainly represent allocated facilities costs of approximately $5.6 million, $6.9 million and $9.5 million for the years ended December 31, 2018, 2017 and 2016, respectively, and allocated stock based compensation expenses of approximately $2.3 million, $1.5 million and $3.1 million for the years ended December 31, 2018, 2017 and 2016, respectively.

For the year ended December 31, 2018, a major portion of our total research and development expense was associated with salaries of our research and development personnel, our ITP, IRAK, AIHA and IgAN programs, and allocated facilities costs. For the year ended December 31, 2017, a major portion of our total research and development expense was associated with salaries of our research and development personnel costs related to the submission of our NDA for fostamatinib in ITP, research and development expense for our ITP, IRAK, IgAN and AIHA programs and allocated facilities costs. For the year ended December 31, 2016, a major portion of our total research and development expense was associated with research and development expense for our ITP, IgAN and AIHA programs, salaries of our research and development personnel and allocated facilities costs.

Selling, General and Administrative Expense

	Year Ended December 31,			Aggregate Change 2018 from 2017	Aggregate Change 2017 from 2016
	2018	2017	2016		
	(in thousands)				
Selling, general and administrative expense	$ 70,002	$ 37,831	$ 20,908	$ 32,171	$ 16,923
Stock-based compensation expense included in selling, general and administrative expense	$ 5,383	$ 4,490	$ 4,230	$ 893	$ 260

The increase in selling, general and administrative expense for the year ended December 31, 2018, compared to the same period in 2017, was primarily due to the third-party commercial-related costs to launch TAVALISSE of $16.2 million, personnel-related costs for our customer-facing and medical affairs team of $13.9 million, stock-based compensation of $893,000, allocated facilities cost of $736,000 and various other costs. The increase in selling, general and administrative expense for the year ended December 31, 2017, compared to the same period in 2016, was primarily due to the costs incurred for the commercial launch of fostamatinib in ITP of $8.1 million, personnel-related costs of

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$4.9 million, allocated facility costs of $1.3 million and various other costs.

We expect our selling, general and administrative expense in 2019 to increase as we continue to expand our commercial launch of TAVALISSE, including a full year of commercialization efforts in 2019, compared to seven months in 2018.

Restructuring Charges

	Year Ended December 31,			Aggregate Change 2018 from 2017	Aggregate Change 2017 from 2016
	2018	2017	2016		
	(in thousands)				
Restructuring charges	$ —	$ —	$ 5,770	$ —	$ (5,770)
Stock-based compensation expense included in restructuring charges	$ —	$ —	$ 499	$ —	$ (499)

In September 2016, we announced that we had reduced our workforce by 46 positions, mostly in the research area. We also announced that effective September 15, 2016, Donald G. Payan, M.D., retired from the board of directors and from his position as Executive Vice President and President of Discovery and Research. We recorded restructuring charges during the third quarter of 2016 of approximately $5.8 million, which included $5.0 million of severance costs paid in cash, $319,000 impairment of certain property and equipment, and $499,000 of non-cash stock-based compensation expense as a result of the modification of our former executive's stock options.

Interest Income

	Year Ended December 31,			Aggregate Change 2018 from 2017	Aggregate Change 2017 from 2016
	2018	2017	2016		
	(in thousands)				
Interest income	$ 2,203	$ 892	$ 437	$ 1,311	$ 455

Interest income results from our interest bearing cash and investment balances. The increase in interest income for the year ended December 31, 2018, as compared to the same periods in 2017 and 2016, were primarily due to the higher yield on our investments, as well as higher average cash and investment balances.

Gain on Disposal of Assets

	Year Ended December 31,			Aggregate Change 2018 from 2017	Aggregate Change 2017 from 2016
	2018	2017	2016		
	(in thousands)				
Gain on disposal of assets	$ —	$ 732	88	(732)	644

Gain on disposal of assets during the years ended December 31, 2017 and 2016 related to the proceeds from the sale of our fully depreciated property and equipment.

Liquidity and Capital Resources

Cash Requirements

From inception, we have financed our operations primarily through sales of equity securities, sale of TAVALISSE and contract payments under our collaboration agreements. We have consumed substantial amounts of capital to date as we continue our research and development activities, including preclinical studies and clinical trials and our ongoing commercial launch of TAVALISSE.

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As of December 31, 2018, we had approximately $128.5 million in cash, cash equivalents and short term investments, as compared to approximately $115.8 million as of December 31, 2017, an increase of approximately $12.8 million. The increase was primarily attributable to the completed underwritten public offering whereby we received approximately $67.2 million, net of underwriting discounts and commissions and offering expenses, $11.5 million proceeds from net sale of TAVALISSE and $4.7 million proceeds from issuances of common stock upon exercise of options and participation in our Purchase Plan, partially offset by the payments associated with funding our operating expenses during the year ended December 31, 2018.

In December 2014, we entered into a sublease agreement with an unrelated third party to occupy a portion of our research and office space. This sublease agreement was amended in February 2017 to sublease additional research and office space. Effective July 2017, the sublease agreement was amended primarily to extend the term of the sublease through January 2023. During the year ended December 31, 2018, we received approximately $5.5 million of sublease income and reimbursements. We expect to receive approximately $18.2 million in future sublease income (excluding our subtenant's share of facility's operating expenses) through January 2023.

In the second quarter of 2018, we completed an underwritten public offering in which we sold 18,400,000 shares of our common stock pursuant to an effective registration statement at a price to the public of $3.90 per share. We received net proceeds of approximately $67.2 million after deducting underwriting discounts and commissions and offering expenses.

In October 2018, we entered into an exclusive license and supply agreement with Kissei to develop and commercialize fostamatinib in all current and potential indications in Japan, China, Taiwan and the Republic of Korea, in which we received an upfront payment of $33.0 million. In January 2019, we entered into an exclusive commercialization license agreement with Grifols to commercialize fostamatinib for the treatment, palliation, or prevention of human diseases, including chronic or persistent ITP, AIHA, and IgAN in Europe and Turkey, in which we received an upfront payment of $30.0 million, with the potential for $297.5 million in payments related to regulatory and commercial milestones, which includes a $20 million payment upon approval from the EMA for fostamatinib in chronic ITP. We will also receive stepped double-digit royalty payments based on tiered net sales which may reach 30% of net sales of fostamatinib. In return, Grifols receives exclusive rights to fostamatinib in human diseases, including chronic ITP, AIHA, and IgAN, in Europe and Turkey. In the event that, in 2021, after the second anniversary of the agreement, fostamatinib has not been approved by the EMA for the treatment of ITP in Europe, Grifols will have the option during a six-month time-frame to terminate the entire agreement which would terminate all their rights to ITP, AIHA, and all other indications. In this limited circumstance, we will pay Grifols $25.0 million and regain all rights to fostamatinib in Europe and other territories. We retain the global rights to fostamatinib outside the Kissei and Grifols territories.

We believe that our existing capital resources will be sufficient to support our current and projected funding requirements, including the ongoing commercial launch of TAVALISSE in the U.S., through at least the next 12 months from the Form 10-K filing date. We have based this estimate on assumptions that may prove to be wrong, and

we could utilize our available capital resources sooner than we currently expect. Because of the numerous risks and uncertainties associated with commercial launch, the development of our product candidates and other research and development activities, we are unable to estimate with certainty our future product revenues, our revenues from our current and future collaborative partners, the amounts of increased capital outlays and operating expenditures associated with our current and anticipated clinical trials and other research and development activities.

Our operations will require significant additional funding for the foreseeable future. Unless and until we are able to generate a sufficient amount of product, royalty or milestone revenue, we expect to finance future cash needs through public and/or private offerings of equity securities, debt financings and/or collaboration and licensing arrangements, and to a much lesser extent through the proceeds from exercise of stock options and interest income earned on the investment of our excess cash balances and short-term investments. With the exception of contingent and royalty payments that we may receive under our existing collaborations, we do not currently have any committed future funding. To the extent we raise additional capital by issuing equity securities, our stockholders could at that time experience substantial dilution. Any debt financing that we are able to obtain may involve operating covenants that restrict our business. To the extent that we raise additional funds through collaboration and licensing arrangements, we

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may be required to relinquish some of our rights to our technologies or product candidates or grant licenses on terms that are not favorable to us.

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

- the ongoing costs to commercialize TAVALISSE for the treatment of ITP in the U.S., or any other future product candidates, if any such candidate receives regulatory approval for commercial sale;
- our ability to successfully obtain EMA authorization on our MAA for fostamatinib in ITP in Europe;
- the progress and success of our clinical trials and preclinical activities (including studies and manufacture of materials) of our product candidates conducted by us;
- our ability to sell TAVALISSE in the U.S.;
- our ability to enter into partnering opportunities across our pipeline outside the U.S.;
- the costs and timing of regulatory filings and approvals by us and our collaborators;
- the progress of research and development programs carried out by us and our collaborative partners;
- any changes in the breadth of our research and development programs;
- the ability to achieve the events identified in our collaborative agreements that may trigger payments to us from our collaboration partners;
- our ability to acquire or license other technologies or compounds that we may seek to pursue;
- our ability to manage our growth;
- competing technological and market developments;
- the costs and timing of obtaining, enforcing and defending our patent and other intellectual property rights; and

· expenses associated with any unforeseen litigation, including any arbitration and securities class action lawsuits.

Insufficient funds may require us to delay, scale back or eliminate some or all of our commercial efforts and/or research or development programs, to lose rights under existing licenses or to relinquish greater or all rights to product candidates at an earlier stage of development or on less favorable terms than we would otherwise choose or may adversely affect our ability to operate as a going concern.

For the years ended December 31, 2018 and 2017, we maintained an investment portfolio primarily in money market funds, U.S. treasury bills, government sponsored enterprise securities, and corporate bonds and commercial paper. Cash in excess of immediate requirements is invested with regard to liquidity and capital preservation. Wherever possible, we seek to minimize the potential effects of concentration and degrees of risk. We will continue to monitor the impact of the changes in the conditions of the credit and financial markets to our investment portfolio and assess if future changes in our investment strategy are necessary.

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Cash Flows from Operating, Investing and Financing Activities

	Year Ended December 31,		
	2018	2017	2016
	(in thousands)		
Net cash provided by (used in):			
Operating activities	$ (58,826)	$ (77,557)	$ (75,889)
Investing activities	24,964	(19,473)	24,881
Financing activities	71,894	117,688	25,184
Net increase (decrease) in cash and cash equivalents	$ 38,032	$ 20,658	$ (25,824)

Net cash used in operating activities was approximately $58.8 million in 2018 compared to approximately $77.6 million and $75.9 million in 2017 and 2016, respectively.

Net cash used in operating activities in 2018 was primarily due to the cash payments to support our ongoing efforts to commercialize TAVALISSE and the cost of our research and development programs, partially offset by the $33.0 million payment we received from a collaborative partner. Net cash used in operating activities in 2017 was primarily due to the cash payments related to our research and development programs, which include costs related to the submission of our NDA for fostamatinib in ITP, and commercial launch preparation costs, partially offset by the $4.5 million payment we received from our collaborative partners. Net cash used in operating activities in 2016 was primarily due to the cash payments related to our research and development programs and severance payments as a result of the reduction in workforce in September 2016, partially offset by the $3.7 million and $3.0 million payments we received from BerGenBio and BMS, respectively. The timing of cash requirements may vary from period to period depending on our ongoing commercial activities related to TAVALISSE, our research and development activities, including our planned preclinical and clinical trials, and future requirements to establish commercial capabilities for any products that we may develop.

Net cash provided by investing activities was approximately $25.0 million in 2018 compared to net cash used in investing activities of approximately $19.5 million in 2017 and net cash provided by investing activities of approximately $24.9 million in 2016. Net cash provided by investing activities in 2018 related to net maturities of short term investments, partially offset by capital expenditures. Net cash used in investing activities in 2017 related to net purchases of short term investments and capital expenditures, partially offset by the $732,000 proceeds from disposal of assets. Net cash provided by investing activities in 2016 related to net maturities of short term investments, partially offset by capital expenditures. Capital expenditures were approximately $1.1 million, $164,000 and $804,000 in 2018, 2017 and 2016, respectively.

Net cash provided by financing activities was approximately $71.9 million in 2018 compared to approximately $117.7 million and $25.2 million in 2017 and 2016, respectively. Net cash provided by financing activities in 2018 consisted of net proceeds of $67.2 million from issuance of common stock pursuant to the underwritten public offering and $4.7 million proceeds from exercise of stock options and participation in the Purchase Plan. Net cash provided by financing activities in 2017 consisted of net proceeds of $108.3 million from issuance of common stock pursuant to the underwritten public offerings we completed in February and October 2017, $5.7 million from issuance of shares under our Amended Sales Agreement with Cantor and proceeds from exercise of stock options and participation in the Purchase Plan. Net cash provided by financing activities in 2016 consisted of net proceeds from issuance of shares under the Controlled Equity Offering Sales Agreement of $23.6 million as well as proceeds from exercise of outstanding options and issuance of shares under the Purchase Plan of $1.6 million.

Off Balance Sheet Arrangements

As of December 31, 2018, we had no off balance sheet arrangements (as defined in Item 303(a)(4)(ii) of Regulation S K under the Exchange Act).

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Contractual Obligations

We conduct our commercial activities and research and development programs internally and through third parties that include, among others, arrangements with vendors, consultants, contract research organizations (CRO) and universities. We have contractual arrangements with these parties, however our contracts with them are cancelable generally on reasonable notice within one year and our obligations under these contracts are primarily based on services performed. We do not have any purchase commitments under any collaboration arrangements.

We have agreements with certain clinical research organizations (CROs) to conduct our clinical trials and with third parties relative to our commercialization of TAVALISSE. The timing of payments for any amounts owed under the respective agreements will depend on various factors including, but not limited to, patient enrollment and other progress of the clinical trial and various activities related to commercial launch. We will continue to enter into contracts in the normal course of business with various third parties who support our clinical trials, support our preclinical research studies, and provide other services related to our operating purposes as well as our commercial launch of TAVALISSE. We can terminate these agreements at any time, and if terminated, we would not be liable for the full amount of the respective agreements. Instead, we will be liable for services provided through the termination date plus certain cancellation charges, if any, as defined in each of the respective agreements. In addition, these agreements may, from time to time, be subjected to amendments as a result of any change orders executed by the parties. As of December 31, 2018, we had the following contractual commitments:

		Payment Due By Period		
		Less than	1 -	3 -	More than
	Total	1 Year	3 Years	5 Years	5 Years
	(in thousands)				
Facilities lease (1)	$ 40,459	$ 9,321	$ 19,776	$ 11,362	$ —

(1) In December 2014, we entered into a sublease agreement, which was amended in 2017, with an unrelated third party to lease up a portion of the research and office space. The facilities lease obligations above do not include the sublease income of approximately $18.2 million which we expect to receive over the term of the sublease through January 2023.

We are also subject to claims related to the patent protection of certain of our technologies, as well as purported securities class action lawsuit, other litigations, and other contractual agreements. We are required to assess the likelihood of any adverse judgments or outcomes to these matters as well as potential ranges of probable losses. A determination of the amount of reserves required, if any, for these contingencies is made after careful analysis of each individual matter.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

The primary objective of our investment activities is to preserve principal while at the same time maximizing the income we receive from our investments without significantly increasing risk. Some of the securities in which we invest may have market risk. This means that a change in prevailing interest rates may cause the fair value amount of the investment to fluctuate. For example, if we hold a security that was issued with a fixed interest rate at the then prevailing rate and the prevailing interest rate later rises, the market value amount of our investment will decline. To minimize this risk, we maintain our portfolio of cash equivalents and short term investments in a variety of

securities, including money market funds and government and non government debt securities and the maturities of each of these instruments is less than one year. In 2018, we maintained an investment portfolio primarily in money market funds, U.S. treasury bills, government sponsored enterprise securities, and corporate bonds and commercial paper. Due to the primarily short term nature and low interest rate yields of these investments, we believe we do not have a material exposure to interest rate risk and market risk arising from our investments. Therefore, no quantitative tabular disclosure is provided.

We have operated primarily in the United States, and all funding activities with our contract research organizations to date have been made in U.S. dollars. Accordingly, we have not had any significant exposure to foreign currency rate fluctuations.

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Item 8. Financial Statements and Supplementary Data

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Rigel Pharmaceuticals, Inc.

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Report of Independent Registered Public Accounting Firm

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

Opinion on the Financial Statements

We have audited the accompanying balance sheets of Rigel Pharmaceuticals, Inc. (the Company) as of December 31, 2018 and 2017, the related statements of operations, comprehensive loss, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2018, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 28, 2019 expressed an unqualified opinion thereon.

Basis for Opinion

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

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 1998.

Redwood City, California
February 28, 2019

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RIGEL PHARMACEUTICALS, INC.

BALANCE SHEETS

(In thousands, except share and per share amounts)

	December 31, 2018	2017
Assets		
Current assets:		
Cash and cash equivalents	$ 76,322	$ 38,290
Short-term investments	52,215	77,461
Accounts receivable, net	4,077	—
Inventories	894	—
Prepaid and other current assets	3,479	1,682
Total current assets	136,987	117,433
Property and equipment, net	1,387	875
Other assets	735	803
	$ 139,109	$ 119,111
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 6,391	$ 2,636
Accrued compensation	9,952	7,059
Accrued research and development	6,763	5,028
Other accrued liabilities	3,598	3,330
Deferred revenue, current portion	1,030	—
Deferred liability – sublease, current portion	—	284
Total current liabilities	27,734	18,337
Long-term portion of deferred revenue	1,408	—
Long-term portion of deferred rent	90	90
Other long-term liabilities	—	38
Commitments		
Stockholders' equity:		
Preferred stock, $0.001 par value; 10,000,000 shares authorized; none issued and outstanding as of December 31, 2018 and 2017	—	—
Common stock, $0.001 par value; 400,000,000 shares authorized; 167,171,505 and 146,814,906 shares issued and outstanding as of December 31, 2018 and 2017, respectively	167	147
Additional paid-in capital	1,319,068	1,239,435
Accumulated other comprehensive loss	(24)	(82)
Accumulated deficit	(1,209,334)	(1,138,854)
Total stockholders' equity	109,877	100,646

	$ 139,109	$ 119,111

See accompanying notes.

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RIGEL PHARMACEUTICALS, INC.

STATEMENTS OF OPERATIONS

(In thousands, except per share amounts)

	Year Ended December 31,		
	2018	2017	2016
Revenues:			
Product sales, net	$ 13,947	$ —	$ —
Contract revenues from collaborations	30,562	4,484	20,383
Total revenues	44,509	4,484	20,383
Costs and expenses:			
Cost of product sales	287	—	—
Research and development	46,903	46,269	63,446
Selling, general and administrative	70,002	37,831	20,908
Restructuring charges	—	—	5,770
Total costs and expenses	117,192	84,100	90,124
Loss from operations	(72,683)	(79,616)	(69,741)
Interest income	2,203	892	437
Gain on disposal of assets	—	732	88
Net loss	$ (70,480)	$ (77,992)	$ (69,216)
Net loss per share, basic and diluted	$ (0.44)	$ (0.62)	$ (0.73)
Weighted average shares used in computing net loss per share, basic and diluted	160,529	126,324	94,387

See accompanying notes.

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RIGEL PHARMACEUTICALS, INC.

STATEMENTS OF COMPREHENSIVE LOSS

(In thousands)

	Year Ended December 31,		
	2018	2017	2016
Net loss	$ (70,480)	$ (77,992)	$ (69,216)
Other comprehensive income (loss):			
Net unrealized gain (loss) on short-term investments	58	(64)	26
Comprehensive loss	$ (70,422)	$ (78,056)	$ (69,190)

See accompanying notes.

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RIGEL PHARMACEUTICALS, INC.

STATEMENTS OF STOCKHOLDERS' EQUITY

(In thousands, except share and per share amounts)

	Common Stock		Additional Paid-in	Accumulated Other Comprehensive Income	Accumulated	Total Stockholders'
	Shares	Amount	Capital	(Loss)	Deficit	Equity
Balance at January 1, 2016	90,554,589	91	1,082,980	(44)	(991,646)	91,381
Net loss	—	—	—	—	(69,216)	(69,216)
Net change in unrealized gain on short-term investments	—	—	—	26	—	26
Issuance of common stock upon exercise of options and participation in Purchase Plan	819,266	1	1,597	—	—	1,598
Issuance of common stock, net of offering costs	7,895,563	8	23,398	—	—	23,406
Stock compensation expense	—	—	7,832	—	—	7,832
Balance at December 31, 2016	99,269,418	100	1,115,807	(18)	(1,060,862)	55,027
Net loss	—	—	—	—	(77,992)	(77,992)
Net change in unrealized loss on short-term investments	—	—	—	(64)	—	(64)
Issuance of common stock upon exercise of options and participation in Purchase Plan	1,564,395	1	3,507	—	—	3,508
Issuance of common stock, net of offering costs	45,981,093	46	114,134	—	—	114,180
Stock compensation expense	—	—	5,987	—	—	5,987
	146,814,906	147	1,239,435	(82)	(1,138,854)	100,646

Balance at December 31, 2017						
Net loss	—	—	—	—	(70,480)	(70,480)
Net change in unrealized loss on short-term investments	—	—	—	58	—	58
Issuance of common stock upon exercise of options and participation in Purchase Plan	1,956,599	2	4,730	—	—	4,732
Issuance of common stock, net of offering costs	18,400,000	18	67,144	—	—	67,162
Stock compensation expense	—	—	7,759	—	—	7,759
Balance at December 31, 2018	167,171,505	$ 167	$ 1,319,068	$ (24)	$ (1,209,334)	$ 109,877

See accompanying notes.

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RIGEL PHARMACEUTICALS, INC.

STATEMENTS OF CASH FLOWS

(In thousands)

	Year Ended December 31,		
	2018	2017	2016
Operating activities			
Net loss	$ (70,480)	$ (77,992)	$ (69,216)
Adjustments to reconcile net loss to net cash used in operating activities:			
Stock-based compensation expense	7,704	5,987	7,333
Gain on disposal of assets	—	(732)	(88)
Loss on sublease	—	495	—
Depreciation and amortization	594	465	941
Non-cash restructuring charges	—	—	818
Net amortization of premium (discount) on short-term investment	(766)	(350)	115
Changes in assets and liabilities:			
Accounts receivable, net	(4,077)	—	203
Inventories	(839)	—	—
Prepaid and other current assets	(1,797)	(197)	1,097
Other assets	68	130	167
Accounts payable	3,755	(2,947)	2,800
Accrued compensation	2,893	2,974	(2,166)
Accrued research and development	1,735	(853)	928
Other accrued liabilities	269	2,236	(100)
Deferred revenue	2,437	—	(13,427)
Deferred rent and other long term liabilities	(322)	(6,773)	(5,294)
Net cash used in operating activities	(58,826)	(77,557)	(75,889)
Investing activities			
Purchases of short-term investments	(77,996)	(116,861)	(103,053)
Maturities of short-term investments	104,066	96,820	128,650
Proceeds from disposal of assets	—	732	88
Capital expenditures	(1,106)	(164)	(804)
Net cash provided by (used in) investing activities	24,964	(19,473)	24,881
Financing activities			
Net proceeds from issuances of common stock upon exercise of options and participation in employee stock purchase plan	4,732	3,508	1,598
Proceeds from sale and issuance of common stock, net of offering costs	67,162	114,180	23,586
Net cash provided by financing activities	71,894	117,688	25,184
Net increase (decrease) in cash and cash equivalents	38,032	20,658	(25,824)
Cash and cash equivalents at beginning of period	38,290	17,632	43,456
Cash and cash equivalents at end of period	$ 76,322	$ 38,290	$ 17,632

See accompanying notes.

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Rigel Pharmaceuticals, Inc.

NOTES TO FINANCIAL STATEMENTS

In this Annual Report on Form 10 K, "Rigel," "we," "us" and "our" refer to Rigel Pharmaceuticals, Inc. and "common stock" refers to Rigel's common stock, par value $0.001 per share.

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Nature of operations and basis of presentation

We were incorporated in the state of Delaware on June 14, 1996. We are a biotechnology company dedicated to discovering, developing and providing novel small molecule drugs that significantly improve the lives of patients with immune and hematologic disorders, cancer and rare diseases. Our pioneering research focuses on signaling pathways that are critical to disease mechanisms.

Our first FDA approved product, TAVALISSE® (fostamatinib disodium hexahydrate), an oral SYK inhibitor, for the treatment of adult patients with chronic ITP who have had an insufficient response to a previous treatment, was approved by the FDA in April 2018, which we launched in May 2018.

Our current clinical programs include an upcoming Phase 3 study of fostamatinib in AIHA and an ongoing Phase 1 study for our IRAK program. In addition, we have product candidates in development with partners BerGenBio, Daiichi, and Aclaris.

Use of estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Significant estimates and assumptions made by management include those relating to revenue recognition on product sales and collaboration agreements, recoverability of our assets, including accounts receivables and inventories, stock-based compensation and the probability of achievement of corporate performance-based milestone for our performance-based stock option awards, impairment issues, the estimated useful life of assets, and estimated accruals, particularly research and development accruals, on an ongoing basis. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. To the extent there are material differences between these estimates and actual results, our financial statements will be affected.

Inventories

Inventories are stated at the lower of cost or estimated net realizable value. We determine the cost of inventories using the standard cost method, which approximates actual cost based on a FIFO basis. Inventories consist primarily of third-party manufacturing costs and allocated internal overhead costs. We began capitalizing inventory costs associated with our product upon regulatory approval when, based on management's judgment, future commercialization was considered probable and the future economic benefit was expected to be realized.

Prior to FDA approval of TAVALISSE, all manufacturing costs were charged to research and development expense in the period incurred. At December 31, 2018, our physical inventory included active pharmaceutical product of which costs have been previously charged to research and development expense. However, manufacturing of drug product, finished bottling and other labeling activities that occurred post FDA approval are included in the inventory value at December 31, 2018.

We provide reserves for potential excess, dated or obsolete inventories based on an analysis of forecasted demand compared to quantities on hand and any firm purchase orders, as well as product shelf life. At December 31,

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Rigel Pharmaceuticals, Inc.

NOTES TO FINANCIAL STATEMENTS (Continued)

2018, we have reserved $94,000 due to excess inventories.

Cost of Product Sales

Cost of product sales consists of third-party manufacturing costs, transportation and freight, and indirect overhead costs associated with the manufacture and distribution of TAVALISSE. A portion of the cost of producing the product sold to date was expensed as research and development prior to the NDA approval for TAVALISSE and therefore is not included in the cost of product sales during this period.

Accounts Receivable

Accounts receivable are recorded net of customer allowances for prompt payment discounts and any allowance for doubtful accounts. We estimate the allowance for doubtful accounts based on existing contractual payment terms, actual payment patterns of its customers and individual customer circumstances. As of December 31, 2018 and 2017, we have determined that an allowance for doubtful accounts is not required.

Revenue Recognition

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 whether arrangements are within the scope of this new guidance, 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 its performance obligation. We apply the five-step model to contracts when it is probable that the we will collect the consideration we are entitled to in exchange for the goods or services we transfer to the customer. At contract inception, once the contract is determined to be within the scope of this new guidance, we assess the goods or services promised within each contract and identify, as a performance obligation, 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.

Product Sales

Revenues from product sales are recognized when the SDs, who are our customers, obtain control of our product, which occurs at a point in time, upon delivery to such SDs. These SDs subsequently resell our products to specialty pharmacy providers, health care providers, hospitals and clinics. In addition to distribution agreements with these SDs, we also enter into arrangements with specialty pharmacy providers, in-office dispensing providers, group purchasing organizations, and government entities that provide for government-mandated and/or privately-negotiated rebates, chargebacks and discounts with respect to the purchase of our products.

Under the new revenue recognition guidance, we are required to estimate the transaction price, including variable consideration that is subject to a constraint, in our contracts with our customers. Variable considerations are included in the transaction price to the extent that it is probable that a significant reversal in the amount of cumulative revenue recognized will not occur. Revenue from product sales are recorded net of certain variable considerations which includes estimated government-mandated rebates and chargebacks, distribution fees, estimated product returns and other deductions.

Provisions for returns and other adjustments are provided for in the period the related revenue is recorded. Actual amounts of consideration ultimately received may differ from our estimates. If actual results in the future vary from our estimates, we will adjust these estimates, which would affect net product revenue and earnings in the period such variances become known.

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Rigel Pharmaceuticals, Inc.

NOTES TO FINANCIAL STATEMENTS (Continued)

The following are our significant categories of sales discounts and allowances:

Sales Discounts. We provide our customers prompt payment discounts that are explicitly stated in our contracts and are recorded as a reduction of revenue in the period the related product revenue is recognized.

Product Returns. We offer our SDs a right to return product purchased directly from us, which is principally based upon the product's expiration date. Product return allowances are estimated and recorded at the time of sale.

Government Rebates: We are subject to discount obligations under the state Medicaid programs and Medicare prescription drug coverage gap program. We estimate our Medicaid and Medicare prescription drug coverage gap rebates based upon a range of possible outcomes that are probability-weighted for the estimated payor mix. These reserves are recorded in the same period the related revenue is recognized, resulting in a reduction of product revenue and the establishment of a current liability that is included as part of Other Accrued Liabilities account in the Balance Sheet. Our liability for these rebates consists primarily of estimates of claims for the current quarter, and estimated future claims that will be made for product that has been recognized as revenue, but remains in the distribution channel inventories at the end of each reporting period.

Chargebacks and Discounts: Chargebacks for fees and discounts represent the estimated obligations resulting from contractual commitments to sell products to certain specialty pharmacy providers, in-office dispensing providers, group purchasing organizations, and government entities at prices lower than the list prices charged to our SDs who directly purchase the product from us. These SDs charge us for the difference between what they pay for the product and our contracted selling price to these specialty pharmacy providers, in-office dispensing providers, group purchasing organizations, and government entities. These reserves are established in the same period that the related revenue is recognized, resulting in a reduction of product revenue. Actual chargeback amounts are generally determined at the time of resale to the specialty pharmacy providers, in-office dispensing providers, group purchasing organizations, and government entities by our SDs. The estimated obligations arising from these chargebacks and discounts are included as part of Other Accrued Liabilities in the balance sheet.

Co-Payment Assistance: We offer co-payment assistance to commercially insured patients meeting certain eligibility requirements. The calculation of the accrual for co-pay assistance is based on an estimate of claims and the cost per claim that we expect to receive associated with product that has been recognized as revenue.

Contract Revenues from Collaborations

In the normal course of business, we conduct research and development programs independently and in connection with our corporate collaborators, pursuant to which we license certain rights to our intellectual property to third parties. The terms of these arrangements typically include payment to us for a combination of one or more of the following: upfront license fees; development, regulatory and commercial milestone payments; product supply services; and royalties on net sales of licensed products.

Upfront License Fees: If the license to our intellectual property is determined to be distinct from the other performance obligations identified in the arrangement, we recognize revenues from upfront license fees allocated to the license when the license is transferred to the licensee and the licensee is able to use and benefit from the license. For licenses that are bundled with other promises, we determine whether the combined performance obligation is satisfied over time or at a point in time. If the combined performance obligation is satisfied over time, we use judgment in determining the appropriate method of measuring progress for purposes of recognizing revenue from the up-front license fees. We evaluate the measure of progress each reporting period and, if necessary, adjust the measure of performance and related revenue recognition.

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Rigel Pharmaceuticals, Inc.

NOTES TO FINANCIAL STATEMENTS (Continued)

Development, Regulatory or Commercial Milestone Payments: At the inception of each arrangement that includes payments based the achievement of certain development, regulatory and commercial or launch events, we evaluate whether the milestones are considered probable of being achieved and estimate the amount to be included in the transaction price using the most likely amount method. 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 our or the licensee's control, such as regulatory approvals, are not considered probable of being achieved until uncertainty associated with the approvals has been resolved. The transaction price is then allocated to each performance obligation, on a relative standalone selling price basis, for which we recognize revenue as or when the performance obligations under the contract are satisfied. At the end of each subsequent reporting period, we re-evaluate the probability of achieving such development and regulatory milestones and any related constraint, and if necessary, adjust our estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, and recorded as part of contract revenues from collaborations during the period of adjustment.

Product Supply Services: Arrangements that include a promise for future supply of drug product for either clinical development or commercial supply at the licensee's discretion are generally considered as options. We assess if these options provide a material right to the licensee and if so, they are accounted for as separate performance obligations.

Sales-based Milestone Payments and Royalties: For arrangements that include sales-based royalties, including milestone payments based on the volume of sales, we determine whether the license is deemed to be the predominant item to which the royalties or sales-based milestones relate to and if such is the case, 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 has been allocated has been satisfied (or partially satisfied).

Stock award plans

On May 16, 2018, our stockholders approved the adoption of the Company's 2018 Equity Incentive Plan (2018 Plan). The 2018 Plan is the successor plan to the 2011 Equity Incentive Plan, the 2000 Equity Incentive Plan, and the 2000 Non-Employee Directors' Stock Option Plan.

As of December 31, 2018, we have two stock option plans, our 2018 Plan and the Inducement Plan (collectively, the Equity Incentive Plans), that provide for granting to our officers, directors and all other employees and consultants options to purchase shares of our common stock. We also have our Employee Stock Purchase Plan (Purchase Plan), wherein eligible employees can purchase shares of our common stock at a price per share equal to the lesser of 85% of the fair market value on the first day of the offering period or 85% of the fair market value on the purchase date. The fair value of each option award is estimated on the date of grant using the Black-Scholes option pricing model which

considered our stock price, as well as assumptions regarding a number of complex and subjective variables. These variables include, but are not limited to, volatility, expected term, risk-free interest rate and dividends. We estimate volatility over the expected term of the option using historical share price performance. For expected term, we take into consideration our historical data of options exercised, cancelled and expired. The risk-free rate is based on the U.S. Treasury constant maturity rate. We have not paid and do not expect to pay dividends in the foreseeable future. We use the straight-line attribution method over the requisite employee service period for the entire award in recognizing stock-based compensation expense. We account for forfeitures as they occur.

We granted performance-based stock options to purchase shares of our common stock which will vest upon the achievement of certain corporate performance-based milestones. We determined the fair values of these performance-based stock options using the Black-Scholes option pricing model at the date of grant. For the portion of the performance-based stock options of which the performance condition is considered probable of achievement, we recognize stock-based compensation expense on the related estimated grant date fair values of such options on a straight-line basis from the date of grant up to the date when we expect the performance condition will be achieved. For the

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performance conditions that are not considered probable of achievement at the grant date or upon quarterly re-evaluation, prior to the event actually occurring, we recognize the related stock-based compensation expense when the event occurs or when we can determine that the performance condition is probable of achievement. In those cases, we recognize the change in estimate at the time we determine the condition is probable of achievement (by recognizing stock-based compensation expense as cumulative catch-up adjustment as if we had estimated at the grant date that the performance condition would have been achieved) and recognize the remaining compensation cost up to the date when we expect the performance condition will be achieved, if any.

Cash, cash equivalents and short-term investments

We consider all highly liquid investments in debt securities with maturity from the date of purchase of 90 days or less to be cash equivalents. Cash equivalents consist of money market funds, U.S. treasury bills, corporate bonds and commercial paper and investments in government sponsored enterprises. Our short-term investments include U.S. treasury bills, obligations of government sponsored enterprises and corporate bonds and commercial paper. By policy, we limit the concentration of credit risk by diversifying our investments among a variety of high credit quality issuers. We view our short-term investments portfolio as available for use in current operations. Accordingly, we have classified certain securities as short-term investments on our balance sheet even though the stated maturity date of these securities may be more than one year from the current balance sheet date.

All cash equivalents and short term investments are classified as available for sale securities. Available for sale securities are carried at fair value at December 31, 2018 and 2017. Unrealized gains (losses) are reported in the statements of stockholders' equity and comprehensive loss. Fair value is estimated based on available market information or valuation methodologies. The cost of securities sold is based on the specific identification method. See Note 7 for a summary of available-for-sale securities at December 31, 2018 and 2017.

Fair value of financial instruments

The carrying values of cash, accounts receivable, prepaid and other current assets, accounts payable and accrued liabilities approximate fair value due to the short-term maturity of those instruments. Cash equivalents and short-term investments are carried at fair value at December 31, 2018 and 2017.

Concentration of credit risk

Financial instruments that potentially subject us to concentrations of credit risk are primarily cash and cash equivalents, short-term investments and accounts receivable. Cash equivalents and short-term investments primarily consist of money market funds, U.S. treasury bills, government-sponsored enterprise securities, and corporate bonds and commercial paper. Due to the short-term nature of these investments, we believe we do not have a material exposure to credit risk arising from our investments. All cash and cash equivalents and short-term investments are maintained with financial institutions that management believes are creditworthy.

Concentrations of credit risk with respect to accounts receivable are limited due to our limited number of customers.

Property and equipment

Property and equipment are stated at cost. Depreciation is calculated using the straight line method over the estimated useful lives of the assets, which range from three to seven years.

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Rigel Pharmaceuticals, Inc.

NOTES TO FINANCIAL STATEMENTS (Continued)

Research and development expenses

Research and development expenses include costs for scientific personnel, supplies, equipment, consultants, research sponsored by us, allocated facility costs, costs related to pre clinical and clinical trials, including raw materials, and stock based compensation expense. All such costs are charged to research and development expense as incurred and at the time raw materials are purchased.

Research and development accruals

We have various contracts with third parties related to our research and development activities. Costs that are incurred but not billed to us as of the end of the period are accrued. We make estimates of the amounts incurred in each period based on the information available to us and our knowledge of the nature of the contractual activities generating such costs. Clinical trial contract expenses are accrued based on units of activity. Expenses related to other research and development contracts, such as research contracts, toxicology study contracts and manufacturing contracts are estimated to be incurred generally on a straight-line basis over the duration of the contracts. Raw materials and study materials not related to our approved drug, purchased for us by third parties are expensed at the time of purchase.

Leases

We currently lease our research and office space under a noncancelable lease agreement with our landlord through 2023. In December 2014, we entered into a sublease agreement with an unrelated third party to occupy a portion of our research and office space through 2023. We record rent expense on a straight line basis for our lease, net of sublease income, wherein such arrangements contain scheduled rent increases over the term of the lease and sublease, respectively. We classify our lease and sublease as operating lease.

Income taxes

We use the asset and liability method to account for income taxes. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities from a change in tax rates is recognized in income in the period the change is enacted. A valuation allowance is established to reduce deferred tax assets to an amount whose realization is more likely than not.

Net loss per share

Basic net loss per share is computed by dividing net loss by the weighted average number of shares of common stock outstanding during the period. Diluted net loss per share is computed by dividing net loss by the weighted average number of shares of common stock outstanding during the period and the number of additional shares of common stock that would have been outstanding if potentially dilutive securities had been issued. Potentially dilutive securities

include warrant and stock options and shares issuable under our Purchase Plan. The dilutive effect of these potentially dilutive securities is reflected in diluted earnings per share by application of the treasury stock method. Under the treasury stock method, an increase in the fair market value of our common stock can result in a greater dilutive effect from potentially dilutive securities.

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Rigel Pharmaceuticals, Inc.

NOTES TO FINANCIAL STATEMENTS (Continued)

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

	Year Ended December 31,		
	2018	2017	2016
EPS Numerator:			
Net loss	$ (70,480)	$ (77,992)	$ (69,216)
EPS Denominator—Basic and Diluted:			
Weighted-average common shares outstanding	160,529	126,324	94,387
Net loss per common share:			
Basic and diluted	$ (0.44)	$ (0.62)	$ (0.73)

During the periods presented, we had securities which could potentially dilute basic loss per share, but were excluded from the computation of diluted net loss per share for all periods presented, as their effect would have been antidilutive. These securities consist of the following (in thousands except per share data):

	December 31,		
	2018	2017	2016
Outstanding stock options	20,713	20,408	20,257
Warrant to purchase common stock	—	—	32
Weighted average exercise price of options	$ 4.20	$ 5.45	$ 6.25
Weighted average exercise price of warrant	$ —	$ —	$ 6.61

Recent accounting pronouncements

In May 2014, the FASB issued ASU No. 2014-09—Revenue from Contracts with Customers, which supersedes the revenue recognition requirements under ASC Topic 605, Revenue Recognition, and most industry-specific guidance under the ASC. Prior to January 1, 2018, our revenues have been derived from license and collaboration agreements. The consideration we are eligible to receive under these agreements includes upfront payments, progress dependent contingent payments on events achieved by our collaboration partners, and royalties on net sales of products sold by such partners under the agreements. ASU No. 2014-09 differs from the previous accounting standard in many respects, such as in the accounting for variable consideration, including milestone payments or contingent payments. Under our previous accounting policy, we recognized contingent payments as revenue in the period that the payment-triggering event occurred or is achieved. However, under the new accounting standard, it is possible to start to recognize contingent payments before the payment-triggering event is completely achieved, subject to management’s assessment of whether it is probable that a significant reversal in the amount of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is subsequently resolved.

We adopted this new standard on January 1, 2018 using the modified retrospective approach. Because all of the performance obligations for our outstanding collaboration agreements had been completed prior to December 31, 2017, and no product sales were recorded prior to adoption of this new standard, we did not record any adjustment on the opening balance of Accumulated Deficit as of January 1, 2018.

Under this new guidance, 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 whether arrangements are within the scope of this new guidance, 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) we satisfy our performance obligation. We apply the five-step model to contracts when it is probable that we will collect the consideration we are entitled to in exchange for the goods or services we transfer to the customer. At contract inception, once the contract is determined to be within the scope of this new guidance, we assess the goods or services promised within each contract and identify, as a performance obligation, and assess whether each

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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.

In February 2016, the FASB issued ASU No. 2016-02—Leases, (Topic 842) (ASU 2016-02), as amended, which generally requires lessees to recognize operating and financing lease liabilities and corresponding right-of-use assets on the balance sheet and to provide enhanced disclosures surrounding the amount, timing and uncertainty of cash flows arising from leasing arrangements. In July 2018, the FASB issued ASU No. 2018-11, Leases (Topic 842): Targeted Improvements, or ASU No. 2018-11. In issuing ASU No. 2018-11, the FASB is permitting another transition method for ASU 2016-02, which allows the transition to the new lease standard by recognizing a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption. We will elect this transition method and the package of practical expedients permitted under the transition guidance, which allows us to carryforward our historical lease classification, our assessment on whether a contract is or contains a lease, and our initial direct costs for any leases that exist prior to adoption of the new standard. We will also elect to combine lease and non-lease components and to keep leases with an initial term of 12 months or less off the balance sheet and recognize the associated lease payments in the statements of operations on a straight-line basis over the lease term. We will adopt this new standard on January 1, 2019 using a modified retrospective approach and are finalizing our assessment of the impact of the adoption of this new standard. We expect to record a right-of-use asset and a corresponding lease liability to account for our property and equipment lease as a cumulative-effect adjustment to the opening balance of accumulated deficit in the period of adoption.

In March 2018, the FASB issued ASU No. 2018-05—Income Taxes (Topic 740): Amendments to SEC Paragraphs Pursuant to SEC Staff Accounting Bulletin No. 118 (SAB 118), which provides guidance on accounting for the tax effects of the U.S. Tax Cuts and Jobs Act (Tax Act) that was enacted in December 2017. SAB 118 provides a measurement period that should not extend beyond one year from the Tax Act enactment date for companies to complete the accounting. In accordance with this guidance, we determined that $117.3 million of the deferred tax expense offset by a full valuation allowance recorded in connection with the remeasurement of certain deferred tax assets and liabilities was a provisional amount and a reasonable estimate at December 31, 2017. No changes have been made to these adjustments and our accounting for the impact of the Tax Act is now complete.

In August 2018, the FASB issued ASU 2018-13—Fair Value Measurement (Topic 820): Disclosure Framework-Changes to the Disclosure Requirements for Fair Value Measurement (ASU 2018-13), which modifies the disclosure requirements on fair value measurements. This guidance is effective for fiscal years beginning after December 15, 2019, and interim periods therein. Early adoption is permitted. We are currently evaluating the impact of adoption of this new standard on our related disclosures.

In August 2018, the SEC adopted amendments to certain disclosure requirements in Securities Act Release No. 33-10532, Disclosure Update and Simplification. These amendments eliminate, modify, or integrate into other SEC requirements certain disclosure rules. Among the amendments is the requirement to present an analysis of changes in stockholders' equity in the interim financial statements included in quarterly reports on Form 10-Q. The analysis, which can be presented as a footnote or separate statement, is required for the current and comparative quarter and year-to-date interim periods. The amendments are effective for all filings made on or after November 5, 2018. In light of the anticipated timing of effectiveness of the amendments and expected proximity of effectiveness to the filing date for most filers' quarterly reports, the SEC's Division of Corporate Finance issued a Compliance and Disclosure Interpretation related to Exchange Act Forms, or CDI – Question 105.09, that provides transition guidance related to this disclosure requirement. CDI – Question 105.09 states that the SEC would not object if the filer's first presentation of the changes in shareholders' equity is included in its Form 10-Q for the quarter that begins after the effective date of the amendments. As such, we adopted these SEC amendments on November 5, 2018 and will present the analysis of changes in stockholders' equity in our interim financial statements in our March 31, 2019 Form 10-Q. We do not anticipate that the adoption of these SEC amendments will have a material effect on our financial statements other than the disclosures noted above.

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Rigel Pharmaceuticals, Inc.

NOTES TO FINANCIAL STATEMENTS (Continued)

In November 2018, the FASB issued ASU 2018-18—Collaborative Arrangements (Topic 808): Clarifying the Interaction between Topic 808 and Topic 606. This standard provides guidance on the interaction between Revenue Recognition (Topic 606) and Collaborative Arrangements (Topic 808) by aligning the unit of account guidance between the two topics and clarifying whether certain transactions between collaborative participants should be accounted for as revenue under Topic 606. ASU 2018-18 is effective for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years. Early adoption is permitted. We plan to adopt this new standard on January 1, 2020. We are currently evaluating the impact ASU 2018-18 will have on our financial statements and related disclosures, but do not expect it to have a material impact on our financial statements.

2. REVENUES

Revenues disaggregated by category were as follows (in thousands):

	December 31,		
	2018	2017	2016
Product sales:			
Gross product sales	$ 16,953	$ —	$ —
Discounts and allowances	(3,006)	—	—
Product sales, net	$ 13,947	$ —	$ —
Revenues from collaborations:			
License revenues	30,562	$ 250	—
Development milestones	—	4,234	20,093
Research and development services	—	—	290
Total revenues from collaboration	30,562	4,484	20,383
Total revenues	$ 44,509	$ 4,484	$ 20,383

The following table summarizes revenues from each of our customers who individually accounted for 10% or more of our total revenues (as a percentage of total revenues):

	December 31,		
	2018	2017	2016

Kissei	69%	—	—
ASD Healthcare and Oncology Supply	17%	—	—
McKesson Specialty Care Distribution Corporation	11%	—	—
BerGenBio	—	74%	18%
BMS	—	—	82%
Others	3%	26%	—

Our first and only FDA approved product, TAVALISSE®, was approved by the U.S. FDA in April 2018. We commenced commercial sale of TAVALISSE in the U.S. in May 2018. There were no product sales during the years ended December 31, 2017 and 2016.

In addition to the distribution agreements with our customers, the SDs, we also enter into arrangements with specialty pharmacy providers, in-office dispensing providers, group purchasing organizations, and government entities that provide for government-mandated and/or privately-negotiated rebates, chargebacks and discounts with respect to the purchase of our products which reduced our gross product sales. Also refer to Revenue Recognition policy discussion in Note 1.

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Rigel Pharmaceuticals, Inc.

NOTES TO FINANCIAL STATEMENTS (Continued)

The following tables summarize activity in each of the product revenue allowances and discounts during the year ended December 31, 2018 (in thousands):

	Chargebacks, Discounts and Fees	Government and Other Rebates	Returns	Total
Balance at January 1, 2018	$ —	$ —	$ —	$ —
Provision related to current period sales	1,484	1,068	170	2,722
Adjustment related to prior period sales	—	—	—	—
Credit or payments made during the period	(861)	(225)	—	(1,086)
Balance at December 31, 2018	$ 623	$ 843	$ 170	$ 1,636

The above provisions, which represent our contract liability as of December 31, 2018, are included as part of Other Accrued Liabilities in the balance sheet.

3. SPONSORED RESEARCH AND LICENSE AGREEMENTS

We conduct research and development programs independently and in connection with our corporate collaborators. As of December 31, 2018, we are a party to a collaboration agreement with ongoing performance obligations, with Kissei for the development and commercialization of fostamatinib in Japan, China, Taiwan and the Republic of Korea. As of December 31, 2018, we are also a party to collaboration agreements, but do not have ongoing performance obligations with Aclaris for the development and commercialization of JAK inhibitors for the treatment of alopecia areata and other dermatological conditions, AZ for the development and commercialization of R256, an inhaled JAK inhibitor, BerGenBio for the development and commercialization of AXL inhibitors in oncology, and Daiichi to pursue research related to MDM2 inhibitors, a novel class of drug targets called ligases.

Under these agreements, which we entered into in the ordinary course of business, we received or may be entitled to receive upfront cash payments, payments contingent upon specified events achieved by such partners and royalties on any net sales of products sold by such partners under the agreements. Total future contingent payments to us under all of these agreements could exceed $369.9 million if all potential product candidates achieved all of the payment triggering events under all of our current agreements (based on a single product candidate under each agreement). Of this amount, up to $58.0 million relates to the achievement of development events, up to $220.6 million relates to the achievement of regulatory events and up to $91.3 million relates to the achievement of certain commercial or launch events. This estimated future contingent amount does not include any estimated royalties that could be due to us if the partners successfully commercialize any of the licensed products. Future events that may trigger payments to us under

the agreements are based solely on our partners' future efforts and achievements of specified development, regulatory and/or commercial events.

Kissei License Agreement

In October 2018, we entered into an exclusive license and supply agreement with Kissei to develop and commercialize fostamatinib in all current and potential indications in Japan, China, Taiwan and the Republic of Korea. Kissei is responsible for performing and funding all development activities for fostamatinib in the above-mentioned territories. We received an upfront cash payment of $33.0 million with the potential for up to an additional $147.0 million in development, regulatory and commercial milestone payments, and will receive mid to upper twenty percent, tiered, escalated net sales-based payments for the supply of fostamatinib. Under the agreement, we are obligated to grant Kissei the license rights on fostamatinib on the territories above, as well as supply Kissei with drug product for use in clinical trials and pre-commercialization activities. We remain responsible for the manufacture and supply of fostamatinib for all development and commercialization activities under the agreement.

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Rigel Pharmaceuticals, Inc.

NOTES TO FINANCIAL STATEMENTS (Continued)

We accounted for this agreement following ASC 606 and identified the following distinct performance obligations at inception of the agreement namely: (a) granting of the license, (b) supply of fostamatinib for clinical use and (c) material right associated with discounted fostamatinib that are supplied for use other than clinical or commercial. We concluded that the granting of the license is distinct relative to the other performance obligations. Moreover, we determined that the upfront fee of $33.0 million represents the transaction price and was allocated to the performance obligations based on our best estimate of the relative standalone selling price as follows: (a) for the license, we estimated the standalone selling price using the adjusted market assessment approach to estimate its standalone selling price in the licensed territories; (b) for the supply of fostamatinib and the material right associated with discounted fostamatinib, we estimated the standalone selling price using the cost plus expected margin approach. Variable considerations of $147.0 million related to future development and regulatory milestones was fully constrained due to the fact that it was probable that a significant reversal of cumulative revenue would occur, given the inherent uncertainty of success with these future milestones. We will recognize revenues related to the supply of fostamatinib and material right upon delivery of fostamatinib to Kissei. For sales-based milestones and royalties, we determined that the license is the predominant item to which the royalties or sales-based milestones relate to. Accordingly, we will 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 has been allocated has been satisfied (or partially satisfied). We will re-evaluate the transaction price in each reporting period and as uncertain events are resolved or other changes in circumstances occur.

As of December 31, 2018, we have granted Kissei the license rights over fostamatinib. Accordingly, we recognized $30.6 million of the $33.0 million upfront fee as allocated revenue for the delivered license during the year ended December 31, 2018. At December 31, 2018, performance obligations related to the supply of fostamatinib and material right associated with discounted fostamatinib supply have not yet been satisfied. Accordingly, as of December 31, 2018, the allocated transaction price of $2.4 million on these two unsatisfied performance obligations were recorded as deferred revenue in the balance sheet.

BMS Collaboration Agreement

In February 2015, we entered into a collaboration agreement with BMS for the discovery, development and commercialization of cancer immunotherapies based on our extensive portfolio of small molecule TGF beta receptor kinase inhibitors. Under the collaboration agreement, BMS will have exclusive rights and will be solely responsible for the clinical development and commercialization of any products. Pursuant to the collaboration agreement with BMS, we received a noncreditable and non-refundable upfront payment of $30.0 million in March 2015. We were also entitled to receive development and regulatory contingent fees that could exceed $309.0 million for a successful compound approved in certain indications. In addition, we were eligible to receive tiered royalties on the net sales of any products from the collaboration. BMS also agreed to reimburse us for agreed upon costs based on a contractual cost per full-time equivalent employee in connection with the performance of research activities during the research

term. Under the collaboration agreement, we were obligated to provide the following deliverables: (i) granting of license rights to our program, (ii) participation in the Joint Research Committee, and (iii) performance of research activities. We concluded that these deliverables were a single unit of accounting as the license did not have stand-alone value apart from the other deliverables. Accordingly, the $30.0 million upfront payment was recognized ratably as revenue from the effective date of the agreement and was fully amortized in September 2016, the end of the research term. We believed that straight-line recognition of this revenue was appropriate as the research was performed ratably over the research period. During the year ended December 31, 2016, we recognized revenue of $13.4 million relating to the upfront payment and $290,000 and relating to the research activities we performed. As of September 30, 2016, all deliverables under the agreement had been delivered. In November 2016, we were notified by BMS that it has designated one compound as an early drug candidate and received $3.0 million in December 2016, triggered by this development event. In July 2018, BMS notified us that they will discontinue their participation in the preclinical collaboration of cancer immunotherapies based on our small molecule TGF beta receptor kinase inhibitors which originally commenced in 2015. The agreement was terminated in August 2018.

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Rigel Pharmaceuticals, Inc.

NOTES TO FINANCIAL STATEMENTS (Continued)

BerGenBio License Agreement

In June 2011, we entered into an exclusive license agreement with BerGenBio for the development and commercialization of an oncology program. BerGenBio is responsible for all activities it wishes to perform under the license we granted to it. In February 2017, we received $3.3 million from BerGenBio as a result of BerGenBio advancing BGB324, an AXL kinase inhibitor licensed under the agreement, to a Phase 2 clinical study. In June 2016, we received contingent payments of $1.7 million relating to a time-based non-refundable fee and $2.0 million relating to BerGenBio's exercise of certain option rights before the prescription period to exercise the rights expired. All deliverables under the agreement had been previously delivered, as such, the above payments of $3.3 million in 2017 and $3.7 million in 2016, triggered by the above time-based and contingent events were recognized as revenue during the years ended December 31, 2017 and 2016, respectively.

4. INVENTORIES

The following table summarizes inventories, net as of December 31, 2018 and 2017 (in thousands):

	December 31,	
	2018	2017
Work in process	$ 530	$ —
Finished goods	364	—
Total	$ 894	$ —

5. SIGNIFICANT CONCENTRATIONS

We recognize revenue on collaborations in the U.S. and abroad and on products sold solely in the U.S. For the year ended December 31, 2018, Kissei and our three specialty distributors (see Note 2) accounted for 69% and 31% of our total revenues, respectively. For the year ended December 31, 2017, BerGenBio and another unrelated third party accounted for 74% and 26% of our total revenues, respectively. For the year ended December 31, 2016, BMS and BerGenBio accounted for 82% and 18% of our revenues, respectively. As of December 31, 2018, 100% of our accounts receivables are from three customers. We had no accounts receivable as of December 31, 2017.

6. STOCK BASED COMPENSATION

Total stock based compensation expense related to all of our stock based awards was as follows (in thousands):

	Year Ended December 31,		
	2018	2017	2016
Selling, general and administrative	$ 5,383	$ 4,490	$ 4,230
Research and development	2,321	1,497	3,103
Restructuring charges	—	—	499
Total stock-based compensation expense	$ 7,704	$ 5,987	$ 7,832

In 2017 and 2016, we entered into severance agreements. As part of the severance arrangements we offered, we extended the date through which certain employee(s) had the right to exercise their vested options. In addition, we also accelerated the vesting period of certain unvested stock options. As a result of these modifications, we recorded an incremental stock-based compensation expense of approximately $1.4 million and $1.1 million during the years ended December 31, 2017 and 2016, respectively. The incremental compensation expenses were computed based on the fair values of the modified awards on the respective modification dates. These amounts are included as part of “Selling, general and administrative expense” in the accompanying 2017 Statement of Operations and “selling, general and administrative expense” and “Restructuring charges” in the accompanying 2016 Statement of Operations.

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Rigel Pharmaceuticals, Inc.

NOTES TO FINANCIAL STATEMENTS (Continued)

Employee Stock Option Plans

On May 16, 2018, our stockholders approved the adoption of the Company's 2018 Equity Incentive Plan (2018 Plan). The 2018 Plan is the successor plan to the 2011 Equity Incentive Plan, the 2000 Equity Incentive Plan, and the 2000 Non-Employee Directors' Stock Option Plan. As of December 31, 2018, we have two stock option plans, our 2018 Plan and the Inducement Plan. The 2018 Plan provides for granting to our officers, directors and all other employees and consultants options to purchase shares of our common stock. The Inducement Plan is intended mainly to provide an inducement material for certain individuals to enter into employment with the Company.

Options granted under our 2018 Plan expire no later than 10 years from the date of grant. Options may be granted with different vesting terms from time to time. As of December 31, 2018, a total of 34,174,470 shares of common stock were authorized for issuance under the 2018 Plan. Options granted under our Inducement Plan expire no later than 10 years from the date of grant and may be granted with different vesting terms from time to time. As of December 31, 2018, a total of 1,635,875 shares of common stock were authorized for issuance under the Inducement Plan.

The fair value of each option award is estimated on the date of grant using the Black Scholes option pricing model. We have segregated option awards into the following three homogenous groups for the purposes of determining fair values of options: officers and directors, all other employees, and consultants. We account for forfeitures as they occur.

We determined weighted average valuation assumptions separately for each of these groups as follows:

- Volatility—We estimated volatility using the historical share price performance over the expected life of the option up to the point where we have historical market data. We also considered other factors, such as implied volatility, our current clinical trials and other company activities that may affect the volatility of our stock in the future. We determined that at this time historical volatility is more indicative of our expected future stock performance than implied volatility.
- Expected term—For options granted to consultants, we use the contractual term of the option, which is generally 10 years, for the initial valuation of the option and the remaining contractual term of the option for the succeeding periods. We analyzed various historical data to determine the applicable expected term for each of the other option groups. This data included: (1) for exercised options, the term of the options from option grant date to exercise date; (2) for cancelled options, the term of the options from option grant date to cancellation date, excluding nonvested option forfeitures; and (3) for options that remained outstanding at the balance sheet date, the term of the options from option grant date to the end of the reporting period and the estimated remaining term of the options. The consideration and calculation of the above data gave us reasonable estimates of the expected term for each employee group. We also considered the vesting schedules of the options granted and factors surrounding exercise behavior of the option groups, our current market price and company activity that may affect our market price. In addition, we considered the optionee type (i.e., officers and directors or all other employees) and other factors that may affect the expected term of the option.

- Risk free interest rate—The risk free interest rate is based on U.S. Treasury constant maturity rates with similar terms to the expected term of the options for each option group.
- Dividend yield—The expected dividend yield is 0% as we have not paid and do not expect to pay dividends in the future.

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Rigel Pharmaceuticals, Inc.

NOTES TO FINANCIAL STATEMENTS (Continued)

The following table summarizes the weighted average assumptions relating to options granted pursuant to our equity incentive plans for the years ended December 31, 2018, 2017 and 2016:

	Year Ended December 31,		
	2018	2017	2016
Risk-free interest rate	2.7 %	2.2 %	1.8 %
Expected term (in years)	6.7	6.6	6.2
Dividend yield	0.0 %	0.0 %	0.0 %
Expected volatility	65.1 %	63.5 %	61.1 %

The exercise price of stock options granted under our stock plans is equal to the fair market value of the underlying shares on the date of grant. Options become exercisable at varying dates and generally expire 10 years from the date of grant. At December 31, 2018, options to purchase 15,097,014 shares of common stock were available for grant and 20,713,331 reserved shares of common stock were available for future issuance under our stock option plans.

Stock Based Compensation Award Activity

Option activity under our equity incentive plans was as follows:

	Shares Available For Grant	Number of Shares Underlying Options	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value
Outstanding at January 1, 2018	11,696,696	20,408,140	$ 5.45		
Authorized for grant	4,878,124	—			
Granted	(4,594,225)	4,594,225	$ 4.19		
Exercised	—	(1,172,615)	$ 2.75		
Cancelled	3,116,419	(3,116,419)	$ 12.87		
	15,097,014	20,713,331	$ 4.20	5.96	$ 701,842

Outstanding at December 31, 2018				
Vested and expected to vest at December 31, 2018	20,513,331	$ 4.21		
Exercisable at December 31, 2018	14,750,561	$ 4.39	4.84	$ 580,787

We granted options to purchase 4,594,225, 4,048,675 and 5,251,185 shares of common stock during the years ended December 31, 2018, 2017 and 2016, respectively. The weighted average grant date fair value of options granted during 2018, 2017 and 2016 was $2.66, $1.48 and $1.72, respectively. As of December 31, 2018, we had 200,000 shares of outstanding performance-based stock option wherein the achievement of the corresponding corporate-based milestones were not considered as probable. Accordingly, none of the stock-based compensation expense of $385,000 has been recognized as expense as of December 31, 2018.

As of December 31, 2018, there were approximately $10.9 million of unrecognized stock-based compensation cost related to time-based stock options and performance-based stock options, wherein achievement of the corresponding corporate-based milestones was considered as probable. Additionally, approximately $1.1 million of total unamortized stock-based compensation cost related to our Purchase Plan. The unamortized compensation costs related to our stock option plans and our Purchase Plan are expected to be recognized over a weighted average period of approximately 2.6 years and 0.8 years, respectively. For the years ended December 31, 2018 and 2017, there were 2,924,823 and 2,844,690 shares vested, respectively, with weighted average exercise price of $2.88 and $2.86, respectively.

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Rigel Pharmaceuticals, Inc.

NOTES TO FINANCIAL STATEMENTS (Continued)

The aggregate intrinsic value of the stock options in the table above is calculated as the difference between the exercise price of the underlying awards and the quoted price of our common stock for the options that were in the money at December 31, 2018. At December 31, 2018 and 2017, we had 5,962,769 and 4,665,624, respectively, of nonvested stock options, with approximately $121,000 and $5.4 million intrinsic value at December 31, 2018 and 2017, respectively. During the years ended December 31, 2018 and 2017, aggregate intrinsic value of options exercised under our stock option plans was approximately $1.3 million and $1.2 million, respectively, determined as of the date of the stock option exercise.

Details of our stock options by exercise price are as follows as of December 31, 2018:

	Options Outstanding			Options Exercisable	
Exercise Price	Number of Outstanding Options	Weighted-Average Remaining Contractual Life (in years)	Weighted-Average Exercise Price	Number of Options	Weighted-Average Exercise Price
$1.68 - $2.14	3,879,555	6.68	$ 2.12	3,278,782	$ 2.12
$2.15 - $2.76	3,344,004	6.92	2.61	2,756,548	2.65
$2.77 - $3.67	3,532,086	6.12	3.49	2,433,716	3.48
$3.68 - $4.49	4,893,668	8.79	4.25	1,217,498	4.10
$4.50 - $7.60	3,326,279	1.94	6.57	3,326,279	6.57
$7.61 - $9.80	1,737,739	1.97	8.71	1,737,739	8.71
$1.68 - $9.80	20,713,331	5.96	4.20	14,750,562	4.39

Employee Stock Purchase Plan

Our Purchase Plan permits eligible employees to purchase common stock at a discount through payroll deductions during defined offering periods. The price at which the stock is purchased is equal to the lesser of 85% of the fair market value of the common stock on the first day of the offering or 85% of the fair market value of our common stock on the purchase date. The initial offering period commenced on the effective date of our initial public offering. We issued 783,984, 403,302, and 482,746 shares of common stock during 2018, 2017 and 2016, respectively, pursuant to the Purchase Plan at an average price of $1.92, $1.87 and $1.89, respectively. For 2018, 2017 and 2016, the weighted average fair value of awards granted under our Purchase Plan was $1.27, $0.99 and $0.98, respectively. As of December 31, 2018, we had 1,331,584 reserved shares of common stock available for future issuance under the Purchase Plan.

The fair value of awards granted under our Purchase Plan is estimated on the date of grant using the Black Scholes option pricing model, which uses weighted average assumptions. Our Purchase Plan provides for a 24- month offering

period comprised of four six month purchase periods with a look back option. A look back option is a provision in our Purchase Plan under which eligible employees can purchase shares of our common stock at a price per share equal to the lesser of 85% of the fair market value on the first day of the offering period or 85% of the fair market value on the purchase date. Our Purchase Plan also includes a feature that provides for a new offering period to begin when the fair market value of our common stock on any purchase date during an offering period falls below the fair market value of our common stock on the first day of such offering period. This feature is called a "reset." Participants are automatically enrolled in the new offering period. We had a "reset" on July 1, 2016 because the fair market value of our stock on June 30, 2016 was lower than the fair market value of our stock on January 5, 2015, the first day of the offering period. We applied modification accounting in accordance with ASC Topic No. 718, Stock Compensation, to determine the incremental fair value associated with this Purchase Plan "reset" and recognized the related stock based compensation expense according to FASB ASC Subtopic No. 718 50, Employee Share Purchase Plans. The total incremental fair value associated with this Purchase Plan "reset" was approximately $1.0 million which was recognized as expense during the period from July 1, 2016 to June 30, 2018. We had another "reset" on January 2, 2019 because the fair market value of our stock on December 31, 2018 was lower than the fair market value of our stock on July 1, 2018,

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Rigel Pharmaceuticals, Inc.

NOTES TO FINANCIAL STATEMENTS (Continued)

the first day of the offering period. We applied modification accounting in accordance with the relevant accounting guidance. The total incremental fair value associated with this Purchase Plan "reset" was approximately $879,000 and will be recognized as expense from the period from January 1, 2019 to December 31, 2020.

The following table summarizes the weighted average assumptions related to our Purchase Plan for the years ended December 31, 2018, 2017 and 2016. Expected volatilities for our Purchase Plan are based on the two year historical volatility of our stock. Expected term represents the weighted average of the purchase periods within the offering period. The risk free interest rate for periods within the expected term is based on U.S. Treasury constant maturity rates.

	Year Ended December 31,		
	2018	2017	2016
Risk-free interest rate	2.4 %	0.5 %	0.5 %
Expected term (in years)	1.3	1.5	1.5
Dividend yield	0.0 %	0.0 %	0.0 %
Expected volatility	66.2 %	63.1 %	62.9 %

7. CASH, CASH EQUIVALENTS AND SHORT-TERM INVESTMENTS

Cash, cash equivalents and short-term investments consist of the following (in thousands):

	December 31,	
	2018	2017
Cash	$ 2,626	$ 582
Money market funds	9,106	2,795
U.S. treasury bills	—	6,726
Government-sponsored enterprise securities	7,872	7,826
Corporate bonds and commercial paper	108,933	97,822
	$ 128,537	$ 115,751
Reported as:		
Cash and cash equivalents	$ 76,322	$ 38,290
Short-term investments	52,215	77,461
	$ 128,537	$ 115,751

Cash equivalents and short-term investments included the following securities with gross unrealized gains and losses (in thousands):

December 31, 2018	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Government-sponsored enterprise securities	$ 7,873	$ —	$ (1)	$ 7,872
Corporate bonds and commercial paper	108,957	2	(26)	108,933
Total	$ 116,830	$ 2	$ (27)	$ 116,805

December 31, 2017	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
U.S. treasury bills	$ 6,733	$ —	$ (7)	$ 6,726
Government-sponsored enterprise securities	7,835	—	(9)	7,826
Corporate bonds and commercial paper	97,888	1	(67)	97,822
Total	$ 112,456	$ 1	$ (83)	$ 112,374

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Rigel Pharmaceuticals, Inc.

NOTES TO FINANCIAL STATEMENTS (Continued)

As of December 31, 2018, our cash equivalents and short-term investments, which have contractual maturities within one year, had a weighted average time to maturity of approximately 72 days. We view our short-term investments portfolio as available for use in current operations. We have the ability to hold all investments as of December 31, 2018 through their respective maturity dates. At December 31, 2018, we had no investments that had been in a continuous unrealized loss position for more than 12 months. As of December 31, 2018, a total of 31 individual securities had been in an unrealized loss position for 12 months or less and the losses were deemed to be temporary. The gross unrealized losses above were caused by interest rate increases. No significant facts or circumstances have arisen to indicate that there has been any deterioration in the creditworthiness of the issuers of the securities held by us. Based on our review of these securities, including the assessment of the duration and severity of the unrealized losses and our ability and intent to hold the investments until maturity, there were no other-than-temporary impairments for these securities at December 31, 2018.

The following table shows the fair value and gross unrealized losses of our investments in individual securities that are in an unrealized loss position, aggregated by investment category (in thousands):

December 31, 2018	Fair Value	Unrealized Losses
Government-sponsored enterprise securities	$ 2,473	$ (1)
Corporate bonds and commercial paper	47,972	(26)
Total	$ 50,445	$ (27)

8. FAIR VALUE

Under FASB ASC 820, Fair Value Measurements and Disclosures, fair value is defined as the price at which an asset could be exchanged or a liability transferred in a transaction between knowledgeable, willing parties in the principal or most advantageous market for the asset or liability. Where available, fair value is based on observable market prices or parameters or derived from such prices or parameters. Where observable prices or parameters are not available, valuation models are applied.

Assets recorded at fair value in our financial statements are categorized based upon the level of judgment associated with the inputs used to measure their fair value. Hierarchical levels directly related to the amount of subjectivity associated with the inputs to fair valuation of these assets and liabilities, are as follows:

Level 1—Inputs are unadjusted, quoted prices in active markets for identical assets at the reporting date. Active markets are those in which transactions for the asset or liability occur in sufficient frequency and volume to provide pricing information on an ongoing basis.

The fair valued assets we hold that are generally included under this Level 1 are money market securities where fair value is based on publicly quoted prices.

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

The fair valued assets we hold that are generally assessed under Level 2 included government sponsored enterprise securities, U.S. treasury bills and corporate bonds and commercial paper. We utilize third party pricing services in developing fair value measurements where fair value is based on valuation methodologies such as models using observable market inputs, including benchmark yields, reported trades, broker/dealer quotes, bids, offers and other reference data. We use quotes from external pricing service providers and other on line quotation systems to verify the fair value of investments provided by our third-party pricing service

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Rigel Pharmaceuticals, Inc.

NOTES TO FINANCIAL STATEMENTS (Continued)

providers. We review independent auditor's reports from our third-party pricing service providers particularly regarding the controls over pricing and valuation of financial instruments and ensure that our internal controls address certain control deficiencies, if any, and complementary user entity controls are in place.

Level 3—Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities and which reflect management's best estimate of what market participants would use in pricing the asset or liability at the reporting date. Consideration is given to the risk inherent in the valuation technique and the risk inherent in the inputs to the model.

We do not have fair valued assets classified under Level 3.

Fair Value on a Recurring Basis

Financial assets measured at fair value on a recurring basis are categorized in the tables below based upon the lowest level of significant input to the valuations (in thousands):

	Assets at Fair Value as of December 31, 2018			
	Level 1	Level 2	Level 3	Total
Money market funds	$ 9,106	$ —	$ —	$ 9,106
Government-sponsored enterprise securities	—	7,872	—	7,872
Corporate bonds and commercial paper	—	108,933	—	108,933
Total	$ 9,106	$ 116,805	$ —	$ 125,911

	Assets at Fair Value as of December 31, 2017			
	Level 1	Level 2	Level 3	Total
Money market funds	$ 2,795	$ —	$ —	$ 2,795
U.S. treasury bills	—	6,726	—	6,726
Government-sponsored enterprise securities	—	7,826	—	7,826
Corporate bonds and commercial paper	—	97,822	—	97,822
Total	$ 2,795	$ 112,374	$ —	$ 115,169

9. PROPERTY AND EQUIPMENT

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

	December 31,	
	2018	2017
Laboratory equipment	$ 11,317	$ 11,122
Computer and software	1,521	1,320
Furniture and equipment	1,403	711
Total property and equipment	14,241	13,153
Less accumulated depreciation and amortization	(12,854)	(12,278)
Property and equipment, net	$ 1,387	$ 875

During 2018 and 2017, we disposed of approximately $18,000 and $7.0 million, respectively, of fully depreciated assets.

Total depreciation and amortization expense were $594,000, $465,000 and $941,000 for the years ended December 31, 2018, 2017 and 2016, respectively. During the year ended December 31, 2016, we recognized an

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Rigel Pharmaceuticals, Inc.

NOTES TO FINANCIAL STATEMENTS (Continued)

impairment loss on certain property and equipment of $319,000 (see Note 11) and recorded this as part of Restructuring Charges in the Statements of Operations.

10. LEASE AGREEMENTS

We currently lease our research and office space under a noncancelable lease agreement with our landlord, HCP BTC, LLC (formerly known as Slough BTC, LLC) which was originally set to expire in 2018. The lease term provides for renewal option for up to two additional periods of five years each. In July 2017, we exercised our option to extend the term of our lease for another five years through January 2023 and modified the amount of monthly base rent during such renewal period. We reevaluated our lease classification and continue to classify our lease as operating lease during the renewal period.

In December 2014, we entered into a sublease agreement, which was amended in 2017, with an unrelated third party to occupy approximately 57,000 square feet of our research and office space. In February 2017, we entered into an amendment to the sublease agreement to increase the subleased research and office space for an additional 9,328 square feet under the same term of the sublease. Effective July 2017, the sublease agreement was amended primarily to extend the term of the sublease through January 2023 and modified the monthly base rent to equal the amount we will pay our landlord. Because the future sublease income under the extended sublease agreement is the same as the amount we will pay our landlord, we did not recognize any loss on sublease relative to this amendment. We expect to receive approximately $18.2 million in future sublease income (excluding our subtenant’s share of facilities operating expenses) through January 2023.

We record rent expense on a straight-line basis for our lease, net of sublease income. For our sublease arrangement which we classified as an operating lease, our loss on the sublease was comprised of the present value of our future payments to our landlord less the present value of our future rent payments expected from our subtenant over the term of the sublease. Further, in conjunction with our facilities lease, we have previously issued to our landlord warrants to purchase our common stock. We have previously capitalized the fair value of these warrants at issuance as part of our other long-term assets and they were amortized up to January 31, 2018. The liability arising from this sublease agreement was determined using a credit-adjusted risk-free rate to discount the estimated future net cash flows. The changes in the liability related to the sublease agreement during the years ended December 31, 2018, 2017 and 2016 were as follows (in thousands):

Balance at January 1, 2016	$ 6,465
Accretion of deferred liability	357

Amortization of deferred liability	(3,362)
Balance at December 31, 2016	3,460
Increase in deferred liability	495
Accretion of deferred liability	157
Amortization of deferred liability	(3,828)
Balance at December 31, 2017	284
Accretion of deferred liability	2
Amortization of deferred liability	(286)
Balance at December 31, 2018	$ —

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Rigel Pharmaceuticals, Inc.

NOTES TO FINANCIAL STATEMENTS (Continued)

At December 31, 2018, future minimum lease payments and obligations under our noncancelable operating lease, net of expected sublease receipts, were as follows (in thousands):

For years ending December 31,	Operating Lease	Sublease Receipts	Net
2019	$ 9,321	$ (4,192)	$ 5,129
2020	9,694	(4,360)	5,334
2021	10,082	(4,534)	5,548
2022	10,485	(4,716)	5,769
2023	877	(394)	483
Total minimum payments required	$ 40,459	$ (18,196)	$ 22,263

Rent expense under our operating lease amounted to approximately $6.0 million, $6.9 million and $8.3 million for the years ended December 31, 2018, 2017 and 2016, respectively. The rent expense during the years ended December 31, 2018, 2017 and 2016 were net of sublease income, subtenant's share of certain facilities operating expense and amortization of deferred liability in the aggregate total of $5.1 million, $8.0 million and $6.5 million, respectively.

11. STOCKHOLDERS' EQUITY

Preferred Stock

We are authorized to issue 10,000,000 shares of preferred stock. As of December 31, 2018 and 2017, there were no issued and outstanding shares of preferred stock. Our board of directors is authorized to fix or alter the designation, powers, preferences and rights of the shares of each series of preferred shares, and the qualifications, limitations or restrictions of any wholly unissued shares, to establish from time to time the number of shares constituting any such series, and to increase or decrease the number of shares, if any.

Controlled Equity Offering

In August 2015, we entered into a Controlled Equity OfferingSM Sales Agreement (Original Sales Agreement) with Cantor Fitzgerald & Co. (Cantor), as sales agent, pursuant to which we may sell, through Cantor, up to an aggregate of $30.0 million in shares of our common stock. As of December 31, 2016, 9,617,875 shares of our common stock had been issued under the Original Sales Agreement with aggregate gross proceeds of $30.0 million. As of December 31, 2016, there are no amounts remaining for future sales under the Original Sales Agreement. In May 2017, we entered into an Amendment No. 1 (Amended Sales Agreement) to the Controlled Equity OfferingSM Sales Agreement pursuant to which we may offer and sell, through Cantor, additional shares of our common stock, up to an aggregate offering price of $40.0 million. These shares are in addition to the shares of common stock sold under the Original

Sales Agreement. During the year ended December 31, 2017, 2,166,093 shares of common stock were sold under the Amended Sales Agreement, with an aggregate net proceeds of $5.7 million. In October 2017, we terminated the Amended Sales Agreement with Cantor.

All sales of our common stock were made pursuant to a shelf registration statement filed by us in May 2015 and declared effective by the Securities and Exchange Commission (SEC) in July 2015. Cantor acted as our sole sales agent for all sales made under the Amended Sales Agreement for a low single-digit commission on gross proceeds. The common stock was sold at prevailing market prices at the time of the sale.

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Rigel Pharmaceuticals, Inc.

NOTES TO FINANCIAL STATEMENTS (Continued)

Common Stock

Authorized Shares of Common Stock

On May 18, 2018, we amended our Certificate of Incorporation (the "Charter Amendment") to increase the number of authorized shares of common stock from 200,000,000 to 400,000,000 shares. This Charter Amendment was approved by our stockholders at the annual meeting held on May 16, 2018. The Charter Amendment became effective upon the filing with the Secretary of State of the State of Delaware on May 18, 2018.

Common Stock Public Offering

In the second quarter of 2018, we completed an underwritten public offering in which we sold 18,400,000 shares of our common stock pursuant to an effective registration statement at a price to the public of $3.90 per share. We received net proceeds of approximately $67.2 million after deducting underwriting discounts and commissions and offering expenses.

In February 2017, we completed an underwritten public offering in which we sold 23,000,000 shares of our common stock pursuant to an effective registration statement at a price to the public of $2.00 per share. We received proceeds of approximately $43.0 million, net of underwriting discounts and commissions and offering expenses. In October 2017, we completed another underwritten public offering in which we sold 20,815,000 shares of our common stock pursuant to an effective registration statement at a price to the public of $3.35 per share. We received proceeds of approximately $65.3 million, net of underwriting discounts and commissions and offering expenses.

12. INCOME TAXES

For the years ended December 31, 2018, 2017 and 2016, our loss before income taxes was from domestic operations. For the years ended December 31, 2018, 2017 and 2016, we did not record a provision for income taxes due to our net loss.

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of our deferred tax assets are as follows (in thousands):

	December 31, 2018	2017
Deferred tax assets		
Net operating loss carryforwards	$ 226,388	$ 212,153
Orphan drug and research and development credits	55,276	51,744
Deferred compensation	7,155	12,261
Capitalized research and development expenses	424	4,690
Other, net	809	815
Total deferred tax assets	290,052	281,663
Valuation allowance	(290,052)	(281,663)
Net deferred tax assets	$ —	$ —

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Rigel Pharmaceuticals, Inc.

NOTES TO FINANCIAL STATEMENTS (Continued)

The reconciliation of the statutory federal income tax rate to the effective tax rate was as follows:

	Year Ended December 31,					
	2018		2017		2016	
Federal statutory tax rate	(21.0)	%	(34.0)	%	(34.0)	%
Federal statutory rate reduction	—	%	160.2	%	—	%
State, Net of Federal Benefit	—	%	—	%	—	%
Valuation allowance	16.3	%	(126.5)	%	35.0	%
Stock compensation	8.2	%	5.7	%	5.0	%
Orphan drug and research and development credits	(3.7)	%	(3.6)	%	(7.3)	%
Other, net	0.2	%	(1.8)	%	1.3	%
Effective tax rate	0.0	%	0.0	%	0.0	%

On December 22, 2017, 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 a top marginal rate of 35% to 21% effective for tax years beginning after December 31, 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. In December 2017, the Staff Accounting Bulletin No. 118 (SAB 118) was issued to address the application of US 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 Tax Act. In accordance with SAB 118, we have determined that $117.3 million of the deferred tax expense offset by a full valuation allowance) recorded in connection with the remeasurement of certain deferred tax assets and liabilities was a provisional amount and a reasonable estimate at December 31, 2017. During the fourth quarter of 2018, we filed our 2017 federal income tax return which resulted in an immaterial adjustment to the deferred tax asset which was fully offset by a valuation allowance. With the above, the Company has considered and completed all applicable elements of tax reform under the remeasurement period.

In general, under Section 382 of the Internal Revenue Code (Section 382), a corporation that undergoes an ownership change is subject to limitations on its ability to utilize its pre change net operating loss carryovers and tax credits to offset future taxable income. Our existing net operating loss carryforwards and tax credits are subject to limitations arising from ownership changes which occurred in previous periods. We finalized our analysis of potential ownership changes and concluded our Section 382 owner shift analysis during the year ended December 31, 2012. We have updated our net operating loss carryforwards to reflect the results of the Section 382 owner shift analysis as of December 31, 2018. We did not experience any significant changes in ownership in 2018 and 2017. Future changes in our stock ownership, some of which are outside of our control, could result in an ownership change under Section 382 and result in additional limitations.

As of December 31, 2018, we had net operating loss carryforwards for federal income tax purposes of approximately $965.1 million, which expire beginning in the year 2019 and state net operating loss carryforwards of approximately

$348.6 million, which expire beginning in the year 2028.

We have general business credits of approximately $40.0 million, which will expire beginning in 2023, if not utilized, and is comprised of research and development credits and orphan drug credits. We also have state research and development tax credits of approximately $28.2 million, which have no expiration date.

Realization of deferred tax assets is dependent upon future earnings, if any, the timing and amount of which are uncertain. Accordingly, the net deferred tax assets have been fully offset by a valuation allowance. The valuation allowance increased by approximately $8.4 million and increased by approximately $86.7 million for the years ended December 31, 2018 and 2017, respectively.

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Rigel Pharmaceuticals, Inc.

NOTES TO FINANCIAL STATEMENTS (Continued)

The following table summarizes the activity related to our gross unrecognized tax benefits (in thousands):

	Year Ended December 31,	
	2018	2017
Balance at the beginning of the year	$ 7,430	$ 6,903
Increase related to prior year tax positions	—	—
Increase related to current year tax positions	419	527
Balance at the end of the year	$ 7,849	$ 7,430

Included in the balance of unrecognized tax benefits at December 31, 2018 and 2017, respectively, are $6.8 million and $5.8 million of tax benefits that, if recognized, would result in adjustments to other tax accounts, primarily deferred taxes. No income tax benefit would be realized due to our valuation allowance position. We do not anticipate a significant change to the unrecognized tax benefits over the next 12 months.

We are subject to federal income taxes and various state taxes. Because of net operating loss and research credit carryovers, substantially all of our tax years remain open to examination.

Our policy is that we recognize interest and penalties accrued on any unrecognized tax benefits as a component of income tax expense. We currently have no tax positions that would be subject to interest or penalties.

13. RESTRUCTURING CHARGES

In September 2016, we announced that we had reduced our workforce by 46 positions, mostly in the research area. We also announced that effective September 15, 2016, Donald G. Payan, M.D, has retired from the board of directors and from his position as Executive Vice President and President of Discovery and Research. We recorded restructuring charges during the three months ended September 30, 2016 of approximately $5.8 million within Restructuring Charges in the accompanying Statement of Operations, which included $5.0 million of severance costs paid in cash, $319,000 impairment of certain property and equipment, and $499,000 of non-cash stock-based compensation expense as a result of the modification of our former executive’s stock options (see Note 6). At December 31, 2018 and 2017, we have no accrued restructuring liability, and there were no related expenses during the years ended December 31 2018 and 2017.

14. SELECTED QUARTERLY FINANCIAL DATA

	Year Ended December 31, 2018				Year Ended December 31, 2017			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	(unaudited, in thousands, except per share amounts)							
Revenue	$ —	$ 1,787	$ 4,865	$ 37,857	$ 3,584	$ —	$ 900	$ —
Gross profit*	$ —	$ 1,757	$ 4,796	$ 7,107	$ —	$ —	$ —	$ —
Net loss	$ (24,385)	$ (25,557)	$ (23,766)	$ 3,228	$ (15,314)	$ (19,147)	$ (17,660)	$ (25,871)
Net income (loss) per share, basic and diluted:	$ (0.17)	$ (0.16)	$ (0.14)	$ 0.02	$ (0.13)	$ (0.16)	$ (0.14)	$ (0.18)
Weighted average shares used in computing net income (loss) per share:								
Basic	147,114	161,577	166,464	166,680	113,598	122,500	124,628	144,252
Diluted	147,114	161,577	166,464	167,617	113,598	122,500	124,628	144,252

*Gross profit is computed as Net product sales less Cost of product sales. Prior to the FDA approval, manufacturing and related costs were charged to research and development expense. Therefore, these costs were not capitalized and as a result, are not fully reflected in the costs of sales during the periods disclosed above.

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Rigel Pharmaceuticals, Inc.

NOTES TO FINANCIAL STATEMENTS (Continued)

15. SUBSEQUENT EVENT

In January 2019, we entered into an exclusive commercialization license agreement with Grifols to commercialize fostamatinib for the treatment, palliation, or prevention of human diseases, including chronic or persistent ITP, AIHA, and IgAN in Europe and Turkey. Pursuant to the terms of the license agreement, Grifols received exclusive rights to commercialize, and non-exclusive rights to develop, fostamatinib in Europe and Turkey. Grifols also received an exclusive option to expand the territory under its exclusive and non-exclusive licenses to include the Middle East, North Africa and Russia (including Commonwealth of Independent States). The parties' collaboration is governed through a joint governance committee.

We are responsible for performing and funding certain development activities for fostamatinib for ITP and AIHA in Europe and Turkey and Grifols is responsible for all other development activities for fostamatinib in such territory. We will retain the global rights to fostamatinib outside the Grifols territories and those rights previously granted to Kissei (in Japan, China, Taiwan and the Republic of Korea). We remain responsible for the manufacture and supply of fostamatinib disodium hexahydrate for all development and commercialization activities under the agreement. In connection with the agreement, we will enter into a supply agreement with Grifols pursuant to which we will supply Grifols with filled and finished product for use under the license agreement.

Under the terms of the agreement, we received an upfront cash payment of $30.0 million and will be eligible to receive regulatory and commercial milestones of up to $297.5 million, which includes a $17.5 million payment for EMA approval of fostamatinib for the first indication, currently anticipated to be for the treatment of chronic ITP, and a $2.5 million creditable advance royalty payment due upon EMA approval of fostamatinib in the first indication. We will also receive tiered royalty payments ranging from the mid-teens to 30% of net sales of fostamatinib in Europe and Turkey.

The commercialization license agreement may be terminated for cause by either party based on regulatory reasons, uncured material breach by the other party, bankruptcy of the other party or for safety reasons. We may terminate the agreement if Grifols challenges or opposes any patent covered by the agreement. After the first MAA approval of fostamatinib in Europe and Turkey, Grifols may terminate the agreement upon 18 months' prior written notice following the second anniversary of the first MAA approval of fostamatinib in Europe and Turkey. Grifols will also have the right to terminate the agreement for our material breach of the supply agreement. If, by the second

anniversary of the effective date of the commercialization license agreement, the EMA has not approved the MAA for fostamatinib for ITP, Grifols will have the right to terminate such agreement in its entirety within six months after such second anniversary by providing us with at 60 days' written notice, and in such event only, we are required to refund to Grifols $25.0 million of the upfront payment. Upon termination by either party, all licenses granted to Grifols will automatically terminate. In the case we are in acquisition discussions with a competing company selling plasma products and Grifols has not provided its consent to an assignment or transfer of the commercialization license agreement to such company in the event such an acquisition were to occur, in accordance with a certain process, then the agreement terminates if such an acquisition occurs, and we or the acquiring party shall pay Grifols a one-time payment of $60.0 million.

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

None.

Item 9A. Controls and Procedures

Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of our disclosure controls and procedures, as such term is defined under Rule 13a 15(e) promulgated under the Exchange Act. Based on this evaluation, our principal executive officer and our principal accounting officer concluded that our disclosure controls and procedures were effective as of the end of the period covered by this Annual Report.

Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a 15(f). Under the supervision and with the participation of our management, including our principal executive officer and principal accounting officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework). Based on our evaluation under the framework in Internal Control—Integrated Framework, our management concluded that our internal control over financial reporting was effective as of December 31, 2018.

The effectiveness of our internal control over financial reporting as of December 31, 2018 has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in its attestation report which is set forth below in this Annual Report on Form 10 K.

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Report of Independent Registered Public Accounting Firm

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

Opinion on Internal Control over Financial Reporting

We have audited Rigel Pharmaceuticals, Inc.'s internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Rigel Pharmaceuticals, Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the accompanying balance sheets of the Company as of December 31, 2018 and 2017, the related statements of operations, comprehensive loss, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2018, and the related notes, and our report dated February 28, 2019 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Annual Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the 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 audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

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 (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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

/s/ Ernst & Young LLP

Redwood City, California
February 28, 2019

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Changes in Internal Controls over Financial Reporting

There were no changes in our internal control over financial reporting that occurred during the fourth quarter of 2018 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Limitations on Effectiveness of Controls and Procedures

In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply judgment in evaluating the benefits of possible controls and procedures relative to their costs.

Item 9B. Other Information

None.

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PART III

Item 10. Directors, Executive Officers and Corporate Governance

Information regarding our directors, executive officers and corporate governance is incorporated by reference to the information set forth under the captions “Election of Directors” and “Management—Executive Officers” in our Proxy Statement for the 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days of December 31, 2018. Such information is incorporated herein by reference.

In 2003, we adopted a code of ethics, the Rigel Pharmaceuticals, Inc. Code of Conduct, which applies to our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions. Our Code of Conduct is on our website at http://ir.rigel.com/phoenix.zhtml?c=120936&p=irol-govhighlights. If we make any amendments to the code or grant any waiver from a provision of the code applicable to any executive officer or director, we intend to satisfy the disclosure requirement under Item 5.05 of Form 8 K by disclosing the nature of the amendment or waiver on our website at the address and the location specified above.

Information regarding compliance with Section 16(a) of the Exchange Act is incorporated by reference to the information set forth under the caption “Section 16(a) Beneficial Ownership Reporting Compliance” in our Proxy Statement for the 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days of December 31, 2018. Such information is incorporated herein by reference.

Item 11. Executive Compensation

Information regarding executive and director compensation is incorporated by reference to the information set forth under the captions “Compensation Discussion and Analysis,” “Executive Compensation” and “Director Compensation” in our Proxy Statement for the 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days of December 31, 2018. Such information is incorporated herein by reference.

Information regarding Compensation Committee interlocks and insider participation is incorporated by reference to the information set forth under the caption “Compensation Committee Interlocks and Insider Participation” in our Proxy Statement for the 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days of December 31, 2018. Such information is incorporated herein by reference.

Information regarding our Compensation Committee’s review and discussion of our Compensation Discussion and Analysis is incorporated by reference to the information set forth under the caption “Compensation Committee Report” in our Proxy Statement for the 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days of December 31, 2018. Such information is incorporated herein by reference.

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

Information regarding security ownership of certain beneficial owners and management and securities authorized for issuance under our equity compensation plans is incorporated by reference to the information set forth under the caption “Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters” and “Equity Compensation Plan Information” in our Proxy Statement for the 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days of December 31, 2019. Such information is incorporated herein by reference.

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

Information regarding certain relationships and related transactions and director independence is incorporated by reference to the information set forth under the captions “Transactions with Related Persons” and “Information Regarding the Board of Directors and Corporate Governance” in our Proxy Statement for the 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days of December 31, 2018. Such information is incorporated herein by reference.

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Item 14. Principal Accounting Fees and Services

Information regarding principal accounting fees and services is incorporated by reference to the information set forth under the caption “Ratification of Selection of Independent Registered Public Accounting Firm” in our Proxy Statement for the 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days of December 31, 2018. Such information is incorporated herein by reference.

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PART IV

Item 15. Exhibits, Financial Statement Schedules

(a) The following documents are being filed as part of this Annual Report on Form 10 K:

1. Financial Statements—Index to Financial Statements in Item 8 of this Annual Report on Form 10 K including selected quarterly financial data for the last two years in Note 14.
2. Financial Statement Schedules—None—As all required disclosures have been made in the footnotes to the financial statements.
3. See Exhibit Index at the end of this Annual Report, which is incorporated herein by reference. The Exhibits listed in the accompanying Exhibit Index are filed as part of this report.

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EXHIBIT INDEX

3.1	Amended and Restated Certificate of Incorporation (filed as an exhibit to Rigel's Current Report on Form 8-K (No. 000-29889) dated May 29, 2012, and incorporated herein by reference).
3.2	Amended and Restated Bylaws (filed as an exhibit to Rigel's Current Report on Form 8-K (No. 000-29889), dated February 2, 2007, and incorporated herein by reference).
3.3	Certificate of Amendment to the Amended and Restated Certificate of Incorporation (filed as an exhibit to Rigel's Current Report on Form 8-K (No. 000-29889), dated May 16, 2018, and incorporated herein by reference).
4.1	Form of warrant to purchase shares of common stock (filed as an exhibit to Rigel's Registration Statement on Form S-1 (No. 333-45864), as amended, and incorporated herein by reference).
4.2	Specimen Common Stock Certificate (filed as an exhibit to Rigel's Current Report

	on Form 8_K (No. 000_29889) dated June 24, 2003, and incorporated herein by reference).
4.3	Warrant issued to HCP BTC, LLC for the purchase of shares of common stock (filed as an exhibit to Rigel's Quarterly Report on Form 10_Q for the quarter ended March 31, 2009 (No. 000_29889) and incorporated herein by reference).
4.4	Form of Debt Indenture (filed as an exhibit to Rigel's Registration Statement on Form S-3 (No. 333_223564) dated March 9, 2018, and incorporated herein by reference).
4.5	Form of Common Stock Warrant Agreement and Warrant Certificate (filed as an exhibit to Rigel's Registration Statement on Form S-3 (No. 333_223564) dated March 9, 2018, and incorporated herein by reference).
4.6	Form of Preferred Stock Warrant Agreement and Warrant Certificate (filed as an exhibit to Rigel's Registration Statement on Form S-3 (No. 333_223564) dated March 9, 2018, and incorporated herein by reference).
4.7	

	Form of Debt Securities Warrant Agreement and Warrant Certificate (filed as an exhibit to Rigel's Registration Statement on Form S-3 (No. 333_223564) dated March 9, 2018, and incorporated herein by reference).
10.1+	Form of Stock Option Agreement pursuant to 2000 Equity Incentive Plan (filed as an exhibit to Rigel's Registration Statement on Form S_1 (No. 333_45864), as amended, and incorporated herein by reference).
10.2	Collaboration Agreement between Rigel and Janssen Pharmaceutical N.V., dated December 4, 1998 (filed as an exhibit to Rigel's Registration Statement on Form S_1 (No. 333_45864), as amended, and incorporated herein by reference).
10.3	Collaborative Research and License Agreement between Rigel and Pfizer Inc., dated January 31, 1999 (filed as an exhibit to Rigel's Registration Statement on Form S_1 (No. 333_45864), as amended, and incorporated herein

	by reference).
10.4	Collaboration Agreement between Rigel and Novartis Pharma AG, dated May 26, 1999 (filed as an exhibit to Rigel's Registration Statement on Form S_1 (No. 333_45864), as amended, and incorporated herein by reference).

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10.5	Build to Suit Lease between Rigel and Slough BTC, LLC, dated May 16, 2001 (filed as an exhibit to Rigel's Quarterly Report on Form 10 Q for the quarter ended June 30, 2001 (No. 000 29889) and incorporated herein by reference).
10.6*	Amendment to Build to Suit Lease between Rigel and Slough BTC, LLC, dated October 18, 2002 (filed as an exhibit to Rigel's Annual Report on Form 10 K, as amended, for the fiscal year ended December 31, 2002 (No. 000 29889) and incorporated herein by reference).
10.7	Amendment No. Two to Build to Suit Lease between Rigel and Slough BTC, LLC, dated January 31, 2005 (filed as an exhibit to Rigel's Quarterly Report on Form 10 Q for the quarter ended September 30, 2009 (No. 000 29889) and incorporated herein by reference).
10.8	Amendment No. Three to Build to Suit Lease between Rigel and Slough BTC, LLC, dated January 31, 2005 (filed as an exhibit to Rigel's Quarterly Report on Form 10 Q for the quarter ended September 30, 2009 (No. 000 29889) and

	incorporated herein by reference).
10.9	Amendment No. Four to Build to Suit Lease between Rigel and HCP BTC, LLC, dated February 1, 2009 (filed as an exhibit to Rigel's Quarterly Report on Form 10 Q for the quarter ended March 31, 2009 (No. 000 29889) and incorporated herein by reference).
10.10	First Amendment to the Collaboration Agreement between Rigel and Novartis Pharma AG, dated May 18, 2001 (filed as an exhibit to Rigel's Quarterly Report on Form 10 Q for the quarter ended June 30, 2001 (No. 000 29889) and incorporated herein by reference).
10.11*	Second Amendment to the Collaboration Agreement between Rigel and Novartis Pharma AG, dated July 6, 2001 (filed as an exhibit to Rigel's Quarterly Report on Form 10 Q for the quarter ended September 30, 2001 (No. 000 29889) and incorporated herein by reference).
10.12	First Amendment to the Collaboration Agreement by and between Rigel and Janssen Pharmaceutical N.V., dated June 30, 2000 (filed as an exhibit to Rigel's Annual Report on Form 10 K for the fiscal

	year ended December 31, 2001 (No. 000 29889) and incorporated herein by reference).
10.13	Second Amendment to the Collaboration Agreement by and between Rigel and Janssen Pharmaceutical N.V., dated December 4, 2001 (filed as an exhibit to Rigel's Annual Report on Form 10 K for the fiscal year ended December 31, 2001 (No. 000 29889) and incorporated herein by reference).
10.14*	Collaboration Agreement between Rigel and Daiichi Pharmaceutical Co., Ltd., dated August 1, 2002 (filed as an exhibit to Rigel's Quarterly Report on Form 10 Q for the quarter ended September 30, 2002 (No. 000 29889) and incorporated herein by reference).
10.15+	Employment Agreement between Rigel and Elliott B. Grossbard, dated as of March 18, 2002 (filed as an exhibit to Rigel's Annual Report on Form 10 K, as amended, for the fiscal year ended December 31, 2002 (No. 000 29889) and incorporated herein by reference).
10.16+	Separation Agreement by and between Rigel and Elliot Grossbard, M.D., dated June 30, 2016 (filed

	as an exhibit to Rigel's Quarterly Report on Form 10-Q for the quarter ended June 30, 2016 (No. 000-29889) filed on August 2, 2016 and incorporated herein by reference).
10.17+	Clinical Research Consulting Agreement by and between Rigel and Elliot Grossbard, M.D., dated June 27, 2016 (filed as an exhibit to Rigel's Quarterly Report on Form 10-Q for the quarter ended June 30, 2016 (No. 000-29889) filed on August 2, 2016 and incorporated herein by reference).

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10.18+	Offer Letter from Rigel to Anne-Marie Duliege, dated February 4, 2016 (filed as an exhibit to Rigel's Quarterly Report on Form 10_Q for the quarter ended March 31, 2016 (No. 000_29889) filed on May 3, 2016 and incorporated herein by reference).
10.19+*	Offer Letter from Rigel Pharmaceuticals, Inc. to Eldon C. Mayer III, dated September 12, 2016 (filed as an exhibit to Rigel's Quarterly Report on Form 10-Q for the quarter ended September 30, 2016 (No. 000 29889) filed on November 1, 2016 and incorporated herein by reference).
10.20+*	Offer Letter from Rigel Pharmaceuticals, Inc. to Joseph Lasaga, dated September 26, 2016 (filed as an exhibit to Rigel's Quarterly Report on Form 10-Q for the quarter ended

	September 30, 2016 (No. 000 29889) filed on November 1, 2016 and incorporated herein by reference).
10.21*	Collaborative Research and License Agreement by and between Rigel and Pfizer Inc., dated January 18, 2005 (filed as an exhibit to Rigel's Quarterly Report on Form 10 Q for the quarter ended March 31, 2005 (No. 000 29889) and incorporated herein by reference).
10.22+	Form of Indemnity Agreement (filed as an exhibit to Rigel's Quarterly Report on Form 10 Q for the quarter ended March 31, 2007 (No. 000 29889), as amended, and incorporated herein by reference).
10.23+	2000 Equity Incentive Plan, as amended (filed as an exhibit to Rigel's Registration Statement on Form S 8

	(No. 333-189523) filed on June 21, 2013 and incorporated herein by reference).
10.24+	2000 Non-Employee Directors' Stock Option Plan, as amended (filed as an exhibit to Rigel's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017 (No. 000-29889) filed on August 21, 2017 and incorporated herein by reference).
10.25+	Amended and Restated Employment Agreement between Rigel and Donald G. Payan, effective January 1, 2011 (filed as an exhibit to Rigel's Annual Report on Form 10-K for the fiscal year ended December 31, 2010 (No. 000-29889) and incorporated herein by reference).
10.26+	Separation Agreement by and between Rigel Pharmaceuticals, Inc. and Donald

	G. Payan, M.D., dated September 15, 2016 (filed as an exhibit to Rigel's Quarterly Report on Form 10-Q for the quarter ended September 30, 2016 (No. 000-29889) filed on November 1, 2016 and incorporated herein by reference).
10.27+	Amended and Restated Change of Control Severance Plan (filed as an exhibit to Rigel's Annual Report on Form 10 K for the fiscal year ended December 31, 2010 (No. 000 29889) and incorporated herein by reference).
10.28+	2000 Employee Stock Purchase Plan, as amended (filed as an exhibit to Rigel's Quarterly Report on Form 10 Q for the quarter ended March 31, 2010 (No. 000 29889) and incorporated herein by reference).
10.29*	License and Collaboration Agreement between Rigel

	and AstraZeneca AB, dated February 15, 2010 (filed as an exhibit to Rigel's Quarterly Report on Form 10_Q for the quarter ended March 31, 2010 (No. 000_29889) and incorporated herein by reference).
10.30+	2011 Equity Incentive Plan, as amended (filed as an exhibit to Rigel's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017 (No. 000-29889) filed on August 21, 2017 and incorporated herein by reference).
10.31*	Termination Agreement between Rigel and Pfizer, Inc., dated May 2, 2011 (filed as an exhibit to Rigel's Quarterly Report on Form 10_Q for the quarter ended June 30, 2011 (No. 000_29889) and incorporated herein by reference).

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10.32+	Form of Stock Option Agreement pursuant to 2011 Equity Incentive Plan (filed as an exhibit to Rigel's Quarterly Report on Form 10_Q for the quarter ended September 30, 2011 (No. 000_29889) and incorporated herein by reference).
10.33+	2012 Cash Incentive Plan (filed as an exhibit to Rigel's Current Report on Form 8_K (No. 000_29889) filed on February 8, 2012, and incorporated herein by reference).
10.34+	2013 Cash Incentive Plan (filed as an exhibit to Rigel's Current Report on Form 8_K (No. 000_29889) filed on February 14, 2013, and incorporated herein by reference).
10.35+	2014 Cash Incentive Plan (filed as an exhibit to Rigel's Current Report

	on Form 8_K (No. 000_29889) filed on May 20, 2014, and incorporated herein by reference).
10.36+	2015 Cash Incentive Plan (filed as an exhibit to Rigel's Current Report on Form 8_K (No. 000_29889) filed on January 30, 2015, and incorporated herein by reference).
10.37+	2016 Cash Incentive Plan (filed as an exhibit to Rigel's Current Report on Form 8_K (No. 000_29889) filed on January 26, 2016, and incorporated herein by reference).
10.38+	2017 Cash Incentive Plan (filed as an exhibit to Rigel's Current Report on Form 8-K (No. 000 29889) filed on February 8, 2017, and incorporated herein by reference).
10.39+	Rigel Pharmaceuticals, Inc. Inducement

	Plan, as amended (filed as an exhibit to Rigel's Annual Report on Form 10_K for the fiscal year ended December 31, 2017 (No. 000_29889) filed on March 6, 2018, and incorporated herein by reference).
10.40+	Form of Stock Option Grant Notice, Option Agreement and Notice of Exercise under the Rigel Inducement Plan (filed as an exhibit to Rigel's Current Report on Form 8_K (No. 000_29889) filed on October 11, 2016, and incorporated herein by reference).
10.41	Amendment No. Five to Build_to_Suit Lease between Rigel Pharmaceuticals, Inc. and HCP BTC, LLC, dated July 24, 2017 (filed as an exhibit to Rigel's Annual Report on Form 10_K for the fiscal year ended December 31,

	2017 (No. 000 29889) filed on March 6, 2018, and incorporated herein by reference).
10.42+	Transition and Separation Agreement between Rigel Pharmaceuticals, Inc. and Ryan Maynard dated December 14, 2017 (filed as an exhibit to Rigel's Annual Report on Form 10 K for the fiscal year ended December 31, 2017 (No. 000 29889) filed on March 6, 2018, and incorporated herein by reference).
10.43+	2018 Cash Incentive Plan (filed as an exhibit to Rigel's Current Report on Form 8-K (No. 000-29889) filed on February 1, 2018, and incorporated herein by reference).
10.44+	Executive Severance Plan (filed as an exhibit to Rigel's Quarterly Report on Form 10-Q for the quarter ended March 31, 2018 (No. 000-29889) filed on May 1, 2018 and incorporated herein by reference).

10.45	2018 Equity Incentive Plan (filed as an exhibit to Rigel's Quarterly Report on Form 10-Q for the quarter ended June 30, 2018 (No. 000-29889) filed on August 8, 2018 and incorporated herein by reference).
10.46+*	Offer Letter from Rigel Pharmaceuticals, Inc. to Dean Schorno, dated May 22, 2018 (filed as an exhibit to Rigel's Quarterly Report on Form 10-Q for the quarter ended June 30, 2018 (No. 000-29889) filed on August 8, 2018 and incorporated herein by reference).
10.47#	Collaboration and License Agreements with Kissei Pharmaceutical Co., Ltd.

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10.48#	Supply Agreements with Kissei Pharmaceutical Co., Ltd.	
23.1#		Consent of Independent Registered Public Accounting Firm.
24.1#		Power of Attorney (included on signature page).
31.1#		Certification required by Rule 13a 14(a) or Rule 15d 14(a).
31.2#		Certification required by Rule 13a 14(a) or Rule 15d 14(a).
32.1•		Certification required by Rule 13a 14(b) or Rule 15d 14(b) and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. 1350).
101.INS#		XBRL Instance Document
101.SCH#		

	XBRL Taxonomy Extension Schema Document
101.CAL#	XBRL Taxonomy Extension Calculation Linkbase Document
101.LAB#	XBRL Taxonomy Extension Labels Linkbase Document
101.PRE#	XBRL Taxonomy Extension Presentation Linkbase Document
101.DEF#	XBRL Taxonomy Extension Definition Linkbase Document

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+Management contract or compensatory plan.

*Confidential treatment requested as to specific portions, which portions are omitted and filed separately with the Securities and Exchange Commission.

#Filed herewith.

•The certification attached as Exhibit 32.1 accompanies the Annual Report on Form 10 K pursuant to Section 906 of the Sarbanes Oxley Act of 2002 and shall not be deemed “filed” by the Company for purposes of Section 18 of the Securities Exchange Act of 1934, as amended.

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SIGNATURES

Pursuant to the requirements of the Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this Annual Report on Form 10 K to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of South San Francisco, State of California, on February 28, 2019.

Rigel Pharmaceuticals, Inc.

By: /s/ Raul R. Rodriguez
Raul R. Rodriguez

Chief Executive Officer

By: /s/ Dean L. Schorno
Dean L. Schorno
Chief Financial Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Raul R. Rodriguez and Dean L. Schorno, and each of them, as his true and lawful attorneys in fact and agents, with full power of substitution and resubstitution, for him and in his name, place, and stead, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10 K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys in fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming that all said attorneys in fact and agents, or any of them or their or his 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, this Annual 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/ Raul R. Rodriguez Raul R. Rodriguez	Chief Executive Officer and Director (Principal Executive Officer)	February 28, 2019
/s/ Dean L. Schorno Dean L. Schorno	Chief Financial Officer (Principal Financial Officer)	February 28, 2019
/s/ Gary A. Lyons Gary A. Lyons	Chairman of the Board	February 28, 2019
/s/ Bradford S. Goodwin Bradford S. Goodwin	Director	February 28, 2019
/s/ Keith A. Katkin	Director	February 28, 2019

Keith A. Katkin		
/s/ Walter H. Moos Walter H. Moos	Director	February 28, 2019
/s/ Peter S. Ringrose Peter S. Ringrose	Director	February 28, 2019
/s/ Brian L. Kotzin Brian L. Kotzin	Director	February 28, 2019
/s/ Gregg Lapointe Gregg Lapointe	Director	February 28, 2019