

**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
(State or other jurisdiction of
incorporation or organization)
1180 Veterans Blvd.
South San Francisco, California
(Address of principal executive offices)

94-3248524
(IRS Employer
Identification No.)

94080
(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 these terms or 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.

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

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.*

Our Product Portfolio

The following table summarizes our portfolio:

Pipeline	Indication	Target	Pre-Clinical	Phase 1	Phase 2	Phase 3	NDA/MAA Filing	Commercial	Developing Product
Commercialized									
TAVALISSE®	Adult Chronic ITP	SYK							
Global Markets									
Fostamatinib (Europe)	Adult Chronic ITP	SYK							
Fostamatinib (Japan/Asia)	Adult Chronic ITP	SYK							
Clinical Trials									
Fostamatinib	Autoimmune Hemolytic Anemia	SYK							
BGB324	Cancer	AXL							
R548 (ATI-501 & 502)	Dermatology	JAK							
DS-3032	Cancer	MDM2							
R835	Immune Diseases	IRAK1/4							
AZ-D0449	Chronic Asthma	JAK							

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

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.

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, corticosteroids remain the most common first line therapy for ITP, occasionally in conjunction with intravenous immunoglobulin (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

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.

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

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.

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

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.

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

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

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, corticosteroids remain the most common first line therapy for ITP, occasionally in conjunction with intravenous immunoglobulin (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

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

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

- 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

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

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

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

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

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 inseparable 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

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:

- 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, administering 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.

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

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

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

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 inseparable 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

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

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;
- 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

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

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:

- 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.

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.

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

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-

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

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;

- 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.

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

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;
- 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

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

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.

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 TAVALISSE, 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.

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.

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

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

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

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

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

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.

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

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;

- 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.

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

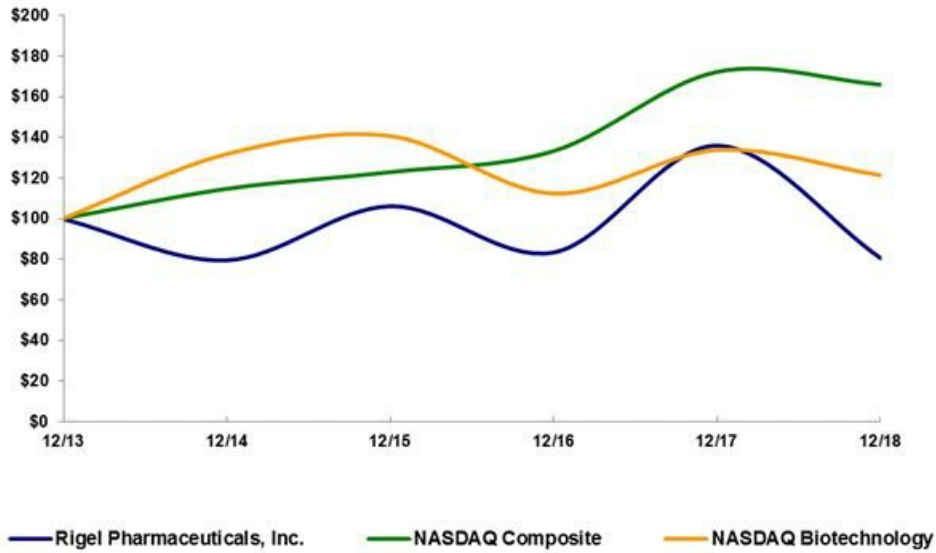
We have not paid any cash dividends on our common stock and currently do not plan to pay any cash dividends in the foreseeable future.

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.

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.

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	<u>44,509</u>	<u>4,484</u>	<u>20,383</u>	<u>28,895</u>	<u>8,250</u>
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	<u>117,192</u>	<u>84,100</u>	<u>90,124</u>	<u>80,638</u>	<u>99,499</u>
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	<u>\$ (70,480)</u>	<u>\$ (77,992)</u>	<u>\$ (69,216)</u>	<u>\$ (51,464)</u>	<u>\$ (90,908)</u>
Net loss per share, basic and diluted	<u>\$ (0.44)</u>	<u>\$ (0.62)</u>	<u>\$ (0.73)</u>	<u>\$ (0.58)</u>	<u>\$ (1.04)</u>
Weighted average shares used in computing net loss per share, basic and diluted	<u>160,529</u>	<u>126,324</u>	<u>94,387</u>	<u>88,434</u>	<u>87,662</u>

	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.

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. 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.

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 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.

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

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

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

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

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%	—

Revenues by collaborative partners were:

	Year Ended December 31,			Aggregate	Aggregate
	2018	2017	2016	Change	Change
				2018 from 2017	2017 from 2016
	(in thousands)				
<i>Kissei</i>	\$ 30,562	\$ —	\$ —	\$ 30,562	\$ —
<i>BerGenBio</i>	—	\$ 3,334	\$ 3,666	\$ (3,334)	\$ (332)
<i>Other third party</i>	—	1,150	—	(1,150)	1,150
<i>BMS</i>	—	—	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			Aggregate	Aggregate
	December 31,			Change	Change
	2018	2017	2016	2018 from 2017	2017 from 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.

Research and Development Expenses

	Year Ended December 31,			Aggregate	Aggregate
	2018	2017	2016	Change	Change
				2018 from 2017	2017 from 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

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,			From January 1, 2007* to December 31, 2018
	2018	2017	2016	
	(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
	<u>\$ 46,903</u>	<u>\$ 46,269</u>	<u>\$ 63,446</u>	<u>\$ 845,764</u>

* 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	Aggregate
	2018	2017	2016	Change	Change
	(in thousands)			2018 from 2017	2017 from 2016
<i>Selling, general and administrative expense</i>	\$ 70,002	\$ 37,831	\$ 20,908	\$ 32,171	\$ 16,923
<i>Stock-based compensation expense included in selling, general and administrative expense</i>	\$ 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

\$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	Aggregate
	2018	2017	2016	Change 2018 from 2017	Change 2017 from 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	Aggregate
	2018	2017	2016	Change 2018 from 2017	Change 2017 from 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	Aggregate
	2018	2017	2016	Change 2018 from 2017	Change 2017 from 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.

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

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.

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	<u>\$ 38,032</u>	<u>\$ 20,658</u>	<u>\$ (25,824)</u>

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).

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:

	Total	Less than 1 Year	Payment Due By Period		More than 5 Years
			1 - 3 Years	3 - 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.

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

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
	<u>\$ 139,109</u>	<u>\$ 119,111</u>
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
	<u>\$ 139,109</u>	<u>\$ 119,111</u>

See accompanying notes.

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.

RIGEL PHARMACEUTICALS, INC.
STATEMENTS OF COMPREHENSIVE LOSS

(In thousands)

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

See accompanying notes.

RIGEL PHARMACEUTICALS, INC.

STATEMENTS OF STOCKHOLDERS' EQUITY

(In thousands, except share and per share amounts)

	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount				
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
Balance at December 31, 2017	146,814,906	147	1,239,435	(82)	(1,138,854)	100,646
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	<u>167,171,505</u>	<u>\$ 167</u>	<u>\$ 1,319,068</u>	<u>\$ (24)</u>	<u>\$ (1,209,334)</u>	<u>\$ 109,877</u>

See accompanying notes.

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	<u>(58,826)</u>	<u>(77,557)</u>	<u>(75,889)</u>
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	<u>24,964</u>	<u>(19,473)</u>	<u>24,881</u>
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	<u>71,894</u>	<u>117,688</u>	<u>25,184</u>
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	<u>\$ 76,322</u>	<u>\$ 38,290</u>	<u>\$ 17,632</u>

See accompanying notes.

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,

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 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.

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.

Rigel Pharmaceuticals, Inc.

NOTES TO FINANCIAL STATEMENTS (Continued)

Development, Regulatory or Commercial Milestone Payments: At the inception of each arrangement that includes payments based on 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

Rigel Pharmaceuticals, Inc.

NOTES TO FINANCIAL STATEMENTS (Continued)

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.

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.

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

Rigel Pharmaceuticals, Inc.

NOTES TO FINANCIAL STATEMENTS (Continued)

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.

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.

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.

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.

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.

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.

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		
Outstanding at December 31, 2018	15,097,014	20,713,331	\$ 4.20	5.96	\$ 701,842
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.

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:

Exercise Price	Options Outstanding			Options Exercisable	
	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,

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
	<u>\$ 128,537</u>	<u>\$ 115,751</u>
Reported as:		
Cash and cash equivalents	\$ 76,322	\$ 38,290
Short-term investments	52,215	77,461
	<u>\$ 128,537</u>	<u>\$ 115,751</u>

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

	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	<u>\$ 116,830</u>	<u>\$ 2</u>	<u>\$ (27)</u>	<u>\$ 116,805</u>
December 31, 2017				
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	<u>\$ 112,456</u>	<u>\$ 1</u>	<u>\$ (83)</u>	<u>\$ 112,374</u>

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	<u>\$ 50,445</u>	<u>\$ (27)</u>

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

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

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	\$	—

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	Sublease	Net
	Lease	Receipts	
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	<u>\$ 40,459</u>	<u>\$ (18,196)</u>	<u>\$ 22,263</u>

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.

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	<u>\$ —</u>	<u>\$ —</u>

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	<u>0.0 %</u>	<u>0.0 %</u>	<u>0.0 %</u>

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.

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	<u>\$ 7,849</u>	<u>\$ 7,430</u>

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.

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.

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

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.

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

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.

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.

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.

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.

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\).](#)

- 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\).](#)

- 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\).](#)

- 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.](#)

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.

COLLABORATION AND LICENSE AGREEMENT

This Collaboration and License Agreement (the “**Agreement**”) is entered into as of October 29, 2018 (the “**Effective Date**”), by and between **Rigel Pharmaceuticals, Inc.**, a Delaware company having an address at 1180 Veterans Blvd., South San Francisco, CA 94080, USA (“**Rigel**”) and **Kissei Pharmaceutical Co. Ltd.**, a Japanese company having an address at 19-48 Yoshino, Matsumoto, Nagano 399-8710, Japan (“**Kissei**”). Rigel and Kissei may be referred to herein individually as a “**Party**” or collectively as the “**Parties**”.

Recitals

Whereas, Rigel, a biopharmaceutical company, owns or controls certain patents, know-how, and other intellectual property relating to its proprietary compound fostamatinib disodium hexahydrate, also known as TAVALISSE™ in the United States, which has been approved by the FDA for the treatment of chronic immune thrombocytopenia and is under development for the treatment of autoimmune hemolytic anemia, IgA nephropathy, and potentially other indications;

Whereas, Kissei, a pharmaceutical company, possesses substantial resources and expertise in the development and commercialization of pharmaceutical products; and

Whereas, Kissei and Rigel desire to form a collaboration for the continued development and commercialization of fostamatinib disodium hexahydrate, all on the terms and conditions set forth below.

Agreement

Now, Therefore, in consideration of the foregoing premises and the mutual covenants contained herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Rigel and Kissei hereby agree as follows:

1. Definitions

1.1 “**Affiliate**” means, with respect to any party, any entity that, directly or indirectly through one or more intermediaries, controls, is controlled by, or is under common control with such party, but for only so long as such control exists. As used in this Section 1.1, “control” means (a) to possess, directly or indirectly, the power to direct the management or policies of an entity, whether through ownership of voting securities, by contract relating to voting rights or corporate governance; or (b) direct or indirect beneficial ownership of more than fifty percent (50%) (or such lesser percentage which is the maximum allowed to be owned by a foreign corporation in a particular jurisdiction) of the voting share capital or other equity interest in such entity.

1.2 “**AIHA**” means autoimmune hemolytic anemia.

1.3 “**Allowable Increases**” has the meaning set forth in Section 4.5(b).

1.4 “**ANS**” has the meaning set forth in Section 8.5(c)(iii).

1.5 “**Applicable Laws**” means the applicable provisions of any and all national, supranational, regional, state and local laws, treaties, statutes, rules, regulations, administrative codes, guidance, ordinances, judgments, decrees, directives, injunctions, orders, permits (including MAAs) of or from any court, Regulatory Authority or governmental agency or authority having jurisdiction over or related to the subject item.

- 1.6** “**Auditor**” has the meaning set forth in Section 9.4.
- 1.7** “**Base Percent**” has the meaning set forth in Section 8.5(a)(ii).
- 1.8** “**Calendar Quarter**” means each respective period of three (3) consecutive months ending on March 31, June 30, September 30, and December 31.
- 1.9** “**Calendar Year**” means each respective period of twelve (12) consecutive months ending on December 31.
- 1.10** “**CFDA**” means the China Food and Drug Administration or its successor.
- 1.11** “**Claim**” has the meaning set forth in Section 12.3.
- 1.12** “**Clinical Trial**” or “**Clinical Trials**” means Phase 1 Clinical Trial, Phase 2 Clinical Trial, Phase 3 Clinical Trial, or Phase 4 Clinical Trial, as the context dictates.
- 1.13** “**Commercialization**” means the conduct of all activities undertaken before and after Regulatory Approval relating to the promotion, sales, marketing, medical support, and distribution (including importing, exporting, transporting, customs clearance, warehousing, invoicing, handling, and delivering Products to customers) of Products in the Field, including sales force efforts, detailing, advertising, market research, market access (including price and reimbursement activities), medical education and information services, publication, scientific and medical affairs, advisory and collaborative activities with opinion leaders and professional societies including symposia, marketing, sales force training, and sales (including receiving, accepting and filling Product orders) and distribution. “**Commercialize**” and “**Commercializing**” have correlative meanings.
- 1.14** “**Commercialization Plan**” has the meaning set forth in Section 6.2.
- 1.15** “**Commercialization Term**” means, on a Product-by-Product and country-by-country basis, the period commencing on the First Commercial Sale of such Product in such country and ending on the later of (a) the expiration of the last-to-expire Valid Claim of the Rigel Patents (including Joint Patents) covering such Product in such country, including its composition, method of manufacture, or method of use, in each case in the form of the Product that is actually Commercialized, and (b) ten (10) years after the First Commercial Sale of such Product in such country.
- 1.16** “**Commercially Reasonable Efforts**” means, with respect to a Party and its obligations under this Agreement, those commercially reasonable efforts and resources consistent with the usual practices of a similarly situated company for the development and commercialization of a pharmaceutical product originating from its own research and development department without a royalty obligation to others, which is at a similar stage of research, development, or commercialization, taking into account that product’s profile of efficacy and safety; proprietary position, including patent and regulatory exclusivity; regulatory status, including anticipated or approved labeling and anticipated or approved post-approval requirements; anticipated, present and future market and commercial potential, including competitive market conditions, and all other relevant factors, including technical, legal, scientific, economic and/or medical factors. Commercially Reasonable Efforts requires that a Party: (a) at a minimum establish a plan to achieve objectives and assign specific responsibilities for the achievement of that plan and (b) make and implement decisions and allocate resources designed to advance progress with respect to such objectives.
- 1.17** “**Committee**” means the JSC or any subcommittee established by the JSC, as applicable.
- 1.18** “**Competing Product**” means any product or compound, other than the Compound or Product, that [*].

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1.19 “**Complementary Product**” means any proprietary (i.e., not generic) product or compound, other than the Compound or Product, that is [*].

1.20 “**Compound**” means fostamatinib disodium hexahydrate, having the chemical structure set forth in **Exhibit A (1)**.

1.21 “**Compound Invention**” has the meaning set forth in Section 10.1(b)(ii).

1.22 “**Confidentiality Agreement**” means that certain Confidential Disclosure Agreement between Rigel and Kissei dated as of July 13, 2017, as amended.

1.23 “**Confidential Information**” means all Know-How and other proprietary scientific, marketing, financial, or commercial information or data that is generated by or on behalf of a Party or its Affiliates or which one Party or any of its Affiliates has supplied or otherwise made available to the other Party or its Affiliates, whether made available orally, in writing, or in electronic form, including information comprising or relating to concepts, discoveries, inventions, data, designs, or formulae in relation to this Agreement; provided that all Rigel Technology will be deemed Rigel’s Confidential Information, all Kissei Technology will be deemed Kissei’s Confidential Information, and all Joint Inventions and Joint Patents will be deemed both Parties’ Confidential Information.

1.24 “**Control**” or “**Controlled**” means, with respect to any Know-How, Patents, or other intellectual property rights, the legal authority or right (whether by ownership, license, or otherwise, but without taking into account any rights granted by one Party to the other Party pursuant to this Agreement) of a Party to grant access, a license, or a sublicense of or under such Know-How, Patents, or other intellectual property rights to another Party, or to otherwise disclose proprietary or trade secret information to such other Party, without breaching the terms of any agreement with a Third Party or any Applicable Laws, or misappropriating the proprietary or trade secret information of a Third Party.

1.25 “**Cost of Goods**” means, with respect to the Drug Product, the fully burdened cost to manufacture and supply such Drug Product, which means: (a) in the case of [*]; and (b) in the case of [*].

1.26 “**CTN**” means the Clinical Trial Notification filed with the PMDA which is required to commence human clinical trials of a pharmaceutically active agent in humans in Japan.

1.27 “**Data**” means any and all scientific, technical, test, marketing, or sales data pertaining to any Product that is generated by or on behalf of Rigel, Kissei, and their respective Affiliates and sublicensees, including research data, clinical pharmacology data, pre-clinical data, clinical data, clinical study reports, or submissions made in association with an IND, CTN, or MAA with respect to any Product.

1.28 “**Developing Party**” has the meaning set forth in Section 4.3(a).

1.29 “**Development**” means all development activities for the Compound and Product that are directed to obtaining Regulatory Approval(s) of the Product in the Field and lifecycle management of the Product in any country in the world, including all CMC-related, non-clinical, preclinical, and clinical testing and studies of the Product; toxicology, pharmacokinetic, and pharmacological studies; statistical analyses; assay development; protocol design and development; the preparation, filing, and prosecution of any MAA for the Product; development activities directed to label expansion and/or obtaining Regulatory Approval for one or more additional indications following initial Regulatory Approval; development activities conducted after receipt of Regulatory Approval, including Phase 4 Clinical Trials; and all regulatory affairs related to any of the foregoing. “**Develop**” and “**Developing**” have correlative meanings.

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1.30 “**Development Costs**” means the costs incurred by a Party or for its account or by the Parties jointly, during the Term and pursuant to this Agreement, that are specifically directed (or reasonably allocable) to the Development of a Product. The Development Costs shall include [*] and [*].

1.31 “**Development Plan**” has the meaning set forth in Section 4.2.

1.32 “**Drug Product**” means the Compound, having the chemical structure set forth in Exhibit A (I), manufactured into unit doses but not packaged or labelled.

1.33 “**ENS**” has the meaning set forth in Section 8.5(c)(i).

1.34 [*].

1.35 “**Executive Officers**” means the [*] of Rigel and the [*] of Kissei.

1.36 “**Export Control Laws**” means all applicable U.S. laws and regulations relating to (a) sanctions and embargoes imposed by the Office of Foreign Assets Control of the U.S. Department of Treasury or (b) the export or re-export of commodities, technologies, or services, including the Export Administration Act of 1979, 24 U.S.C. §§ 2401-2420, the International Emergency Economic Powers Act, 50 U.S.C. §§ 1701-1706, the Trading with the Enemy Act, 50 U.S.C. §§ 1 et. seq., the Arms Export Control Act, 22 U.S.C. §§ 2778 and 2779, and the International Boycott Provisions of Section 999 of the U.S. Internal Revenue Code of 1986, in each case, as amended.

1.37 “**Extended Commercialization Term**” means the period commencing on the expiration of the Commercialization Term and extending for the period of time during which Rigel continues to supply to Kissei the Product under the Supply Agreement.

1.38 “**FCPA**” means the U.S. Foreign Corrupt Practices Act (15 U.S.C. Section 78dd-1, et. seq.), as amended.

1.39 “**FDA**” means the U.S. Food and Drug Administration or its successor.

1.40 “**Field**” means the treatment, palliation, or prevention of human disease, including chronic or persistent ITP, AIHA, and IgAN.

1.41 “**First Commercial Sale**” means, on a Product-by-Product and country-by-country basis, the first sale of such Product in such country by Kissei or its Affiliates or Sublicensees to a Third Party after Regulatory Approval for such Product has been obtained in such country.

1.42 “**FTE**” means the equivalent of a full-time individual’s work for a twelve (12) month period (consisting of a total of [*] hours per year of dedicated effort). Any person who devotes more or less than [*] hours per year on the applicable activities shall be treated as an FTE on a pro-rata basis, based upon the actual number of hours worked by such person on such activities, divided by [*]. For clarity, the hours spent by temporary workers and contractors on applicable activities may be treated as FTE on a pro-rata basis.

1.43 “**FTE Rate**” means an initial rate of (a) with respect to Rigel’s personnel, [*] per FTE per year and (b) with respect to Kissei’s personnel, [*], which rate shall apply through December 31, 2018. Thereafter, the FTE Rate shall be changed annually on a Calendar Year basis to reflect any year-to-year percentage increase or decrease (as the case may be) (x) with respect to Rigel, in the [*], and (y) with respect to Kissei, in the [*] (both changes based on the change from the most recent applicable index available as of the Effective Date to the most recent applicable index available as of the date of the calculation of such revised FTE Rate).

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1.44 “GCP” means the current clinical practice as set out in (i) ICH Harmonized Guidance on current Good Clinical Practice (CPMP/ICH/135/95), (ii) US Code of Federal Regulations, Title 21, Chapters 50, 54, 56, 58, 210, 211 and 312, as amended, and (iii) the equivalent law or regulation in any other applicable jurisdiction in the Kissei Territory.

1.45 “Generic Product” means, with respect to a Product in a particular regulatory jurisdiction, any pharmaceutical product that (a) contains the same active pharmaceutical ingredient(s) as such Product; (b) is approved by the Regulatory Authority in such country as a substitutable generic for such Product on an expedited or abbreviated basis based on bioequivalence or interchangeability with the Product; and (c) is sold in such jurisdiction by a Third Party that is not a Sublicensee and did not purchase such product in a chain of distribution that included any of Rigel, Kissei, or their respective Affiliates, licensees, or sublicensees hereunder.

1.46 “GLP” means current good laboratory practice standards promulgated or endorsed by the FDA, as defined in U.S. 21 C.F.R. Part 58 (or such other equivalent regulatory standards in jurisdictions outside the U.S.), as amended.

1.47 “GMP” means the current minimum standards for methods to be used in, and the facilities or controls to be used for, the manufacture, processing, packing, or holding of a drug as specified by Applicable Laws of the relevant countries at the time of manufacturing conducted in accordance with this Agreement, defined under (a) 21 C.F.R. Part 210 and 211, and (b) equivalent law or regulations in any other applicable jurisdiction in the Territory.

1.48 “Governmental Authority” means any national, international, federal, state, provincial, or local government, or political subdivision thereof, or any multinational organization, or any authority, agency, or commission entitled to exercise any administrative, executive, judicial, legislative, police, regulatory, or taxing authority or power, or any court or tribunal (or any department, bureau or division thereof, or any governmental arbitrator or arbitral body).

1.49 “Gross Sales” means the Gross Sales Price multiplied by the units of Product sold.

1.50 “Gross Sales Price” means the gross amount invoiced for the sale or other disposition of a unit of Product in a country by or on behalf of Kissei or its Affiliates or Sublicensees to a Third Party.

1.51 “ICH” means the International Council for Harmonization (of Technical Requirements for Pharmaceuticals for Human Use).

1.52 “IgAN” means IgA nephropathy.

1.53 “IND” means an investigational new drug application or equivalent application filed with the applicable Regulatory Authority, which application is required to commence human clinical trials in the applicable country.

1.54 “Indemnitee” has the meaning set forth in Section 12.3.

1.55 “Indemnitor” has the meaning set forth in Section 12.3.

1.56 “Independent Work” has the meaning set forth in Section 4.3(b).

1.57 “Independent Work Costs” has the meaning set forth in Section 8.2(b).

1.58 “Indication” means a separate and distinct disease, disorder, illness, or health condition and all of its associated signs, symptoms, stages, or progression (including precursor conditions), in each case for which a

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separate MAA may be filed. For clarity, subpopulations or patients with a primary disease or condition, however stratified (including stratification by stages or progression, particular combinations of symptoms associated with the primary disease or condition, prior treatment courses, response to prior treatment, family history, clinical history, phenotype, or other stratification) shall not be deemed to be separate “Indications” for the purposes of this Agreement.

1.59 “**Inventions**” means all inventions, whether or not patentable, discovered, made, conceived, or reduced to practice in the course of activities contemplated by this Agreement.

1.60 “**ITP**” means immune thrombocytopenia.

1.61 “**JCC**” has the meaning set forth in Section 3.7(b).

1.62 “**JDC**” has the meaning set forth in Section 3.7(a).

1.63 “**Joint Development Work**” has the meaning set forth in Section 4.2(c).

1.64 “**Joint Inventions**” has the meaning set forth in Section 10.1(b)(i).

1.65 “**Joint Patents**” has the meaning set forth in Section 10.1(b)(i).

1.66 “**Kissei Data**” has the meaning set forth in Section 10.1(a).

1.67 “**Kissei Indemnitee**” has the meaning set forth in Section 12.1.

1.68 “**Kissei Know-How**” means all Know-How that is Controlled by Kissei or its Affiliate(s) as of the Effective Date or comes into the Control of Kissei or its Affiliate(s) during the Term, including Kissei’s interest in any Joint Inventions, in each case that is necessary or reasonably useful for the research, Development, manufacture, use, importation, offer for sale, or sale of any Compound or Product in the Field. For clarity, subject to Section 8.2(b) in the case of any Kissei Data generated during Kissei’s Independent Work, the Kissei Know-How includes the Kissei Data.

1.69 “**Kissei Only Development Work**” has the meaning set forth in Section 4.2(a).

1.70 “**Kissei Patents**” means all Patents that are Controlled by Kissei or its Affiliate(s) as of the Effective Date or come into the Control of Kissei or its Affiliates during the Term (including Kissei’s interest in any Joint Patents), in each case that would be infringed, absent a license or other right to practice granted under such Patents, by the research, Development, manufacture, use, importation, offer for sale, or sale of any Compound or Product (considering patent applications to be issued with the then-pending claims and considering Joint Patents as if owned solely by Kissei or its Affiliate).

1.71 “**Kissei Product Mark**” has the meaning set forth in Section 10.5(a).

1.72 “**Kissei Technology**” means the Kissei Know-How and the Kissei Patents, including Kissei’s interest in the Joint Inventions and Joint Patents.

1.73 “**Kissei Territory**” means (a) Japan, (b) the People’s Republic of China, but excluding Taiwan (“**China**”), (c) Taiwan, and (d) the Republic of Korea (“**Korea**”).

1.74 “**Know-How**” means all technical information, know-how, and data, including inventions, discoveries, trade secrets, specifications, instructions, processes, formulae, compositions of matter, cells, cell lines, assays, animal models, and other physical, biological, or chemical materials, expertise, and other technology

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applicable to development, registration, use, or marketing or to methods of assaying or testing them, and including all biological, chemical, pharmacological, biochemical, toxicological, pharmaceutical, physical, and analytical safety, nonclinical, and clinical data, regulatory documents, data and filings, instructions, processes, formulae, expertise, and information relevant to the research, development, use, importation, offering for sale, or sale of, or which may be useful in studying, testing, developing, Products. Know-How excludes Patents and manufacturing know-how for the Compound or Product.

1.75 “Losses” has the meaning set forth in Section 12.1.

1.76 “MAA” means a marketing authorization application or equivalent application, and all amendments and supplements thereto, filed with the applicable Regulatory Authority in any country or jurisdiction. For clarity, MAA does not include any application for Pricing and Reimbursement Approval.

1.77 “MAA Approval” means approval of an MAA by the applicable Regulatory Authority for marketing and sale of a Product in the applicable country or jurisdiction, but excluding any Pricing and Reimbursement Approval.

1.78 “Management Officer” means an officer in charge of Rigel and an appropriate officer in charge of Kissei who is designated by each CEO.

1.79 “Medical Affairs” or “Medical Affairs Activities” means activities designed to ensure or improve appropriate medical use of, conduct medical education of, or further research regarding, the Product, including by way of example: (a) activities of medical scientific liaisons who, among their other functions, may: (i) conduct service based medical activities including providing input and assistance with consultancy meetings, proposing investigators for clinical trials sponsored or co-sponsored by a Party or Affiliate, and providing input in the design of such trials and other research related activities; and/or (ii) deliver non-promotional communications and conduct non-promotional activities; (b) grants to support continuing medical education, symposia, or Third Party research related to the Product; (c) development, publication, and dissemination of publications relating to the Products; (d) medical information services provided in response to inquiries communicated via sales representatives or received by letter, phone call, or email; (e) conducting advisory board meetings, international advisory board activities, or other consultant programs, including the engagement of key opinion leaders and health care professional in individual or group advisory and consulting arrangements; and (f) the evaluation of applications submitted to Kissei for support of investigator-initiated trials.

1.80 “Milestone Catch-Up Payment” has the meaning set forth in Section 8.2(b)(ii).

1.81 “Missed Milestone Payments” has the meaning set forth in Section 8.2(b)(ii).

1.82 “Net Sales” means, with respect to any Product, the Gross Sales of such Product, less the following deductions to the extent actually taken and included in the gross invoiced sales price for such Product or otherwise directly paid or incurred by Kissei or its Affiliates or Sublicensees, as applicable, with respect to the sale or other disposition of such Product:

(a) normal and customary trade and quantity discounts, allowances and rebates actually allowed and properly taken directly with respect to sales of such Product (provided that such discounts are not applied disproportionately to such Product when compared to the other products of Kissei or its Affiliate or Sublicensee, as applicable);

(b) credits or allowances given or made for rejection or return of previously sold Products or for retroactive price reductions and billing errors;

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(c) rebates and chargeback payments granted to managed health care organizations, pharmacy benefit managers (or equivalents thereof), national, state/provincial, local, and other governments, their agencies and purchasers and reimbursers, or to trade customers;

(d) costs of freight, carrier insurance, and other transportation charges directly related to the distribution of such Product; and

(e) taxes, duties or other governmental charges (including any tax such as a value added or similar tax, other than any taxes based on income) directly levied on or measured by the billing amount for such Product, as adjusted for rebates and refunds.

Upon any sale or other disposition of any Product that should be included within Net Sales for any consideration other than exclusively monetary consideration on bona fide arms'-length terms, then for purposes of calculating Net Sales under this Agreement, such Product shall be deemed to be sold exclusively for money at the average sales price of the relevant Product in arm's length transactions during the applicable reporting period generally achieved for such Product in the country in which such sale or other disposition occurred when such Product is sold alone and not with other products (average sales price to be measured as the aggregate Product Net Sales divided by the aggregate number of units sold in such country).

In no event will any particular amount identified above be deducted more than once in calculating Net Sales. Sales of a Product between Kissei and its Affiliates or Sublicensees for resale shall be excluded from the computation of Net Sales, but the subsequent resale of such Product to a Third Party shall be included within the computation of Net Sales.

The supply of Product as samples, for use in non-clinical or clinical trials, or for use in any test or studies reasonably necessary to comply with any Applicable Laws, or as is otherwise normal and customary in the industry, shall not be included in the computation of Net Sales, so long as Kissei, its Affiliates, and Sublicensees do not receive payment for such Product in excess of the Cost of Goods of such Product.

1.83 "Newly-Proposed Development Work" has the meaning set forth in Section 4.3(a).

1.84 "Non-Developing Party" has the meaning set forth in Section 4.3(a).

1.85 "Patents" means (a) all patents, certificates of invention, applications for certificates of invention, priority patent filings, provisional patent applications and patent applications, and (b) any renewals, divisions, or continuations (in whole or in part) of any of such patents, certificates of invention and patent applications, and any all patents or certificates of invention issuing thereon, and any and all reissues, reexaminations, extensions, supplementary protection certificates, divisions, renewals, substitutions, confirmations, registrations, revalidations, revisions, and additions of or to any of the foregoing.

1.86 "Permissible Delay" has the meaning set forth in Section 4.8(b)(i).

1.87 "Pharmacovigilance Agreement" has the meaning set forth in Section 5.4.

1.88 "Phase 1 Clinical Trial" means a clinical trial, complying with Applicable Laws, in any country conducted in a small number of human volunteers designed or intended to establish an initial safety profile, pharmacodynamics, or pharmacokinetics of a Product.

1.89 "Phase 2 Clinical Trial" means a clinical trial, complying with Applicable Laws, of a Product in human patients in any country to determine initial efficacy and safety.

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1.90 “Phase 3 Clinical Trial” means a pivotal clinical trial, complying with Applicable Laws, of a Product in human patients in any country with a defined dose or a set of defined doses of a Product designed to ascertain efficacy and safety of such Product for the purpose of submitting applications for Regulatory Approval to the competent Regulatory Authorities.

1.91 “Phase 4 Clinical Trial” means a product support clinical trial, complying with Applicable Laws, of a Product that is commenced after receipt of MAA Approval in the country where such trial is conducted. Phase 4 Clinical Trial may include epidemiological studies, modeling and pharmaco-economic studies, and post-marketing surveillance trials.

1.92 “PMDA” means Japan’s Pharmaceuticals and Medical Devices Agency or its successor.

1.93 “Pricing and Reimbursement Approval” means, with respect to a Product, the approval, agreement, determination, or decision of any applicable Governmental Authority establishing the price or level of reimbursement for such Product, as required in a given country or jurisdiction prior to sale of such Product in such country or jurisdiction.

1.94 “Product” means any pharmaceutical product containing the Compound as the sole active ingredient in the form set forth in Exhibit A (I).

1.95 “Product Infringement” has the meaning set forth in Section 10.3(a).

1.96 “Proposal” has the meaning set forth in Section 4.3(a).

1.97 “Public Official or Entity” means (a) any officer, employee (including physicians, hospital administrators, or other healthcare professionals), agent, representative, department, agency, de facto official, representative, corporate entity, instrumentality, or subdivision of any government, military, or international organization, including any ministry or department of health or any state-owned or affiliated company or hospital, or (b) any candidate for political office, any political party, or any official of a political party.

1.98 “Recall” has the meaning set forth in Section 5.7.

1.99 “Regulatory Approval” means, with respect to a country or jurisdiction, any and all approvals (including MAA Approval, and Pricing and Reimbursement Approval, if applicable), licenses, registrations, permits, notifications and authorizations (or waivers) of any Regulatory Authority that are necessary for the manufacture, use, storage, import, transport, promotion, marketing, distribution, offer for sale, sale, or other commercialization of a Product in such country or jurisdiction.

1.100 “Regulatory Authority” means any Governmental Authority that has responsibility in its applicable jurisdiction over the testing, development, manufacture, use, storage, import, transport, promotion, marketing, distribution, offer for sale, sale, or other commercialization of pharmaceutical products in a given jurisdiction, including the FDA and PMDA. For countries where Pricing and Reimbursement Approval is required, Regulatory Authority shall also include any Governmental Authority whose grant of Pricing and Reimbursement Approval of the Product is required.

1.101 “Regulatory Filing” means all applications, filings, submissions, approvals, licenses, registrations, permits, notifications, and authorizations (or waivers) with respect to the testing, Development, manufacture, or Commercialization of any Product made to or received from any Regulatory Authority in a given country, including any CTNs, INDs and MAAs.

1.102 “Regulatory Meeting” has the meaning set forth in Section 5.2.

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- 1.103** “**Rigel Data**” has the meaning set forth in Section 10.1(a).
- 1.104** “**Rigel Indemnitee**” has the meaning set forth in Section 12.2.
- 1.105** “**Rigel Know-How**” means all Know-How that is Controlled by Rigel or its Affiliate(s) as of the Effective Date or comes into the Control of Rigel or its Affiliate(s) during the Term, including Rigel’s interest in any Joint Inventions, in each case that is necessary or reasonably useful for the Development, use, importation, offer for sale, or sale of any Compound or Product in the Field in the Kissei Territory. For clarity, subject to Section 8.2(b) in the case of any Rigel Data generated during Rigel’s Independent Work, the Rigel Know-How includes the Rigel Data. □
- 1.106** “**Rigel Only Development Work**” has the meaning set forth in Section 4.2(a).
- 1.107** “**Rigel Patents**” means all Patents in the Kissei Territory that are Controlled by Rigel or its Affiliate(s) as of the Effective Date or come into the Control of Rigel or its Affiliate(s) during the Term (including Rigel’s interest in any Joint Patents), in each case that would be infringed, absent a license or other right to practice granted under such Patents, by the Development, use, importation, offer for sale or sale of any Compound or Product in the Field in the Kissei Territory (considering patent applications to be issued with the then-pending claims and considering Joint Patents as if owned solely by Rigel). The Rigel Patents existing as of the Effective Date are set forth in **Exhibit B**. Exhibit B shall be updated pursuant to Section 10.2(a)(iii).
- 1.108** “**Rigel Technology**” means the Rigel Know-How and the Rigel Patents, including Rigel’s interest in the Joint Inventions and Joint Patents.
- 1.109** “**Rigel Territory**” means the world outside the Kissei Territory.
- 1.110** “**Safety Data**” means Data related solely to any adverse drug experiences and serious adverse drug experience as such information is reportable to Regulatory Authorities. Safety Data also includes “adverse events”, “adverse drug reactions”, and “unexpected adverse drug reactions” as defined in the ICH Harmonised Tripartite Guideline for Clinical Safety Data Management: Definitions and Standards for Expedited Reporting.
- 1.111** “**SEC**” means the U.S. Securities and Exchange Commission, or any successor entity or its foreign equivalent, such as the Japan Exchange Group (JPX), as applicable.
- 1.112** “**Sponsor**” means the Party that takes the ultimate responsibility for the initiation, performance, and management of, including financing or arranging the financing for, the applicable Clinical Trial.
- 1.113** “**Sublicensee**” means a Third Party to whom Kissei grants a sublicense to Develop, use, import, promote, offer for sale, or sell any Product in the Field in the Kissei Territory, beyond the mere right to purchase Products from Kissei and its Affiliates, and excluding wholesalers and full-service distributors that do not promote the sale of the Product, and other similar physical distributors. In no event shall Rigel or any of its Affiliates be deemed a Sublicensee.
- 1.114** “**Sunshine Reporting Laws**” has the meaning set forth in Section 5.8.
- 1.115** “**Supply Agreement**” has the meaning set forth in Section 7.23.
- 1.116** “**Term**” has the meaning set forth in Section 14.1.
- 1.117** “**Third Party**” means any entity other than Rigel or Kissei or an Affiliate of Rigel or Kissei.
- 1.118** “**Transfer Price**” has the meaning set forth in Section 8.5(a)(i).

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1.119 “**Transfer Price Rate**” has the meaning set forth in Section 8.5(a)(i).

1.120 “**U.S.**” means the United States of America, including its territories and possessions (including Puerto Rico).

1.121 “**Valid Claim**” means, with respect to any Rigel Patent (including Joint Patents), [*], in a particular country in the Kissei Territory: (a) a claim of an issued and unexpired patent that has not been revoked or held unenforceable, unpatentable, or invalid by a decision of a court or other governmental agency of competent jurisdiction that is not appealable or has not been appealed within the time allowed for appeal, and that has not been abandoned, disclaimed, denied, or admitted to be invalid or unenforceable through reissue, re-examination, or disclaimer or otherwise, or (b) a claim of a pending patent application that has not been cancelled, withdrawn or abandoned or finally rejected by an administrative agency action from which no appeal can be taken, which is filed in good faith [*].

2. Grant of Licenses

2.1 Licenses Granted to Kissei. Subject to the terms and conditions of this Agreement, Rigel hereby grants to Kissei, during the Term:

(a) an exclusive, payment-bearing license, with the right to grant sublicenses (through multiple tiers) solely as provided in Section 2.2, under the Rigel Technology to use, sell, offer for sale, import, and otherwise Commercialize (but not to make or have made) the Products in the Field in the Kissei Territory; and

(b) a non-exclusive license, with the right to grant sublicenses (through multiple tiers) solely as provided in Section 2.2, under the Rigel Technology to Develop (but not to make or have made) the Products on a worldwide basis in accordance with the Development Plan, and to use the Products solely for that purpose.

2.2 Sublicenses. Kissei shall have the right to grant sublicenses under the licenses granted in Section 2.1, subject to Section 2.10:

(a) to an Affiliate of Kissei without Rigel’s express prior written consent and without providing any written notice to Rigel, *provided that* such sublicense will terminate if such sublicensee no longer qualifies as an Affiliate of Kissei.

(b) to a Third Party other than as set forth in subsection (a) above with Rigel’s express prior written consent, which shall not be unreasonably withheld or delayed.

All sublicenses granted under the licenses granted in Section 2.1 shall be in writing and shall be subject to, and consistent with, the terms and conditions of this Agreement and shall provide that any such Sublicensee (for clarity, including any distributor, but not including any contract research organization engaged to conduct Development activities) shall not further sublicense except with the consent of Kissei and Rigel, which consent shall not be unreasonably withheld or delayed. Kissei shall ensure that each agreement with a Sublicensee grants Rigel all rights with respect to Data, Inventions, and Regulatory Filings made or generated by such Sublicensee as if such Data, Inventions, and Regulatory Filings were made or generated by Kissei. Kissei shall be responsible for the compliance of its Affiliates, Sublicensees (for clarity, including any distributors and contract research organization engaged to conduct Development activities), and their subcontractors with the terms and conditions of this Agreement. Kissei shall provide written notice to Rigel of each sublicense granted to a Third Party hereunder, specifying the name of the Sublicensee, the territory, and the duration of the sublicense.

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2.3 Reserved Rights by Rigel. Rigel hereby expressly reserves:

(a) the right under the Rigel Technology to exercise its rights and perform its obligations under this Agreement, whether directly or through one or more licensees or subcontractors; and

(b) all rights to practice, and to grant licenses under, the Rigel Technology outside of the scope of the licenses granted in Section 2.1.

2.4 Licenses Granted to Rigel. Subject to the terms and conditions of this Agreement, Kissei hereby grants to Rigel:

(a) an exclusive, royalty-free, fully paid-up license, with the right to sublicense (through multiple tiers) as provided in Section 2.4(d), under the Kissei Technology to Develop, use, sell, offer for sale, import, and otherwise Commercialize the Products in the Rigel Territory;

(b) a co-exclusive (with Kissei), royalty-free, fully paid-up license, with the right to sublicense (through multiple tiers), under the Kissei Technology to Develop the Compound and Products in the Kissei Territory in accordance with the Development Plan and subject to the process for conducting Independent Work set forth in Section 4.3; and

(c) an exclusive, royalty-free, fully paid-up license, with the right to sublicense (through multiple tiers), under the Kissei Technology to make and have made the Compound and Products anywhere in the world.

(d) Sublicenses: Rigel shall have the right to grant sublicenses under the licenses granted in Section 2.4 without Kissei's consent in the Rigel Territory, subject to Section 2.10, and shall have the right to grant sublicenses under the licenses granted in Section 2.4 with Kissei's prior written consent in the Kissei Territory, which consent shall not be unreasonably withheld or delayed. Rigel shall be responsible for the compliance of its Affiliates, sublicensees (for clarity, including any distributors and contract research organization for its Development), and subcontractors with the terms and conditions of this Agreement.

2.5 Reserved Rights by Kissei. Kissei hereby expressly reserves:

(a) the right under the Kissei Technology to exercise its rights and perform its obligations under this Agreement, whether directly or through one or more sublicensees or subcontractors;

(b) all rights to practice, and to grant licenses under, the Kissei Technology outside of the scope of the licenses granted in Section 2.4.

2.6 No Implied Licenses; Negative Covenant Except as set forth in this Agreement, neither Party shall acquire any license or other intellectual property interest, by implication or otherwise, under or to any Patents, Know-How, or other intellectual property owned or controlled by the other Party. Neither Party shall, nor shall it permit any of its Affiliates or sublicensees to, practice any Patents or Know-How licensed to it by the other Party outside the scope of the licenses expressly granted to it under this Agreement.

2.7 Disclosure of Know-How. For as long as the Parties are conducting Development activities under the Development Plan, Rigel shall, without additional compensation, disclose and make available to Kissei, in electronic form where possible, all Rigel Know-How that comes into existence after the Effective Date and that was not previously provided to Kissei, promptly after the development, making, conception, or reduction to practice of such Rigel Know-How. For as long as the Parties are conducting Development activities under the Development Plan, Kissei shall and shall cause its Affiliates to, without compensation, disclose and make available to Rigel, in electronic form where possible, any Kissei Know-How not previously provided to Rigel, promptly after the development,

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making, conception, or reduction to practice of such Kissei Know-How. The JSC shall establish a mechanism for the timely reciprocal disclosure of such Know-How.

2.8 Third Party Licenses.

(a) Kissei shall promptly notify Rigel if it becomes aware of any Third Party Know-How or Patent that is necessary or reasonably useful to Develop, make, have made, use, sell, offer for sale, or import the Compound or Product in the Field in the Kissei Territory, and Rigel shall have the first right, but not the obligation, to negotiate and obtain a license from such Third Party under such Know-How or Patents, provided that Rigel shall, subject to any applicable confidentiality obligations, keep Kissei reasonably informed of the status of such negotiations.

(b) If Rigel enters into any agreement with any Third Party after the Effective Date that includes a license from such Third Party to Rigel under any Know-How or Patents that are necessary or reasonably useful to Develop, use, sell, offer for sale, or import the Products in the Field in the Kissei Territory, and Rigel has the right to grant a sublicense under such Know-How or Patents to Kissei, then Rigel shall notify Kissei and identify the relevant Know-How or Patents and provide Kissei with the substantive terms of the applicable Third Party license agreement to Kissei, in each case to the extent applicable to the rights that would be sublicensed to Kissei. Such Know-How and Patents, to the extent falling within the definition of Rigel Technology, will be sublicensed to Kissei only if Kissei provides Rigel with written notice [*] such Patents and Know-How [*] Rigel Technology, [*] the Compound and Products in the Field in the Kissei Territory, [*] in writing [*].

(c) Except with the prior written consent of Rigel, Kissei shall not obtain a license to any Third Party Patent or Know-How that is necessary or reasonably useful to Develop, make, have made, use, sell, offer for sale, or import the Products in the Rigel Territory.

2.9 Exclusivity.

(a) Subject to Section 2.9(c) below, for the period starting from the Effective Date and until (i) the [*] of the Product in the first Indication in the Kissei Territory, Kissei shall not, directly or indirectly (including through an Affiliate or a Third Party), [*] any Competing Product and (ii) the [*] of the Product in the first Indication in the Kissei Territory, Kissei shall not, directly or indirectly (including through an Affiliate or a Third Party), [*] any Competing Product ((i) and (ii) each, a “**Competing Program**”).

(b) In the event that a Third Party becomes an assignee of this Agreement or an Affiliate of Kissei after the Effective Date through merger, acquisition, consolidation, or other similar transaction, and such Third Party, as of the closing date of such transaction, is engaged in the conduct of a Competing Program, then Rigel shall have the right to terminate this Agreement upon immediate written notice to Kissei if, within [*] after the closing of such transaction, the successor-in-interest of such Competing Program does not completely Divest such Competing Program.

“**Divest**” means the sale or transfer of rights to the Competing Program to a Third Party (i.e., not an Affiliate of either Kissei or such successor-in-interest) without receiving a continuing share of profit, royalty payment, or other economic interest in the success of such Competing Program.

(c) During the Term, Kissei shall not, directly or indirectly (including through an Affiliate or a Third Party), commercialize the Product in the Rigel Territory or any Generic Product of any Product anywhere in the world.

(d) During the Term, Rigel shall not, directly or indirectly (including through an Affiliate or a Third Party), [*] the Compound or Product outside the Field in the Kissei Territory.

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(e) For the period starting from the Effective Date and until the [*] of the Product in the first Indication in the Kissei Territory, Rigel shall not, directly or indirectly (including through an Affiliate or a Third Party), [*] any Competing Product in the Kissei Territory; provided that for any Competing Product that [*], the foregoing obligation shall be for the period starting from the Effective Date and until the [*] of the Product in the first Indication in the Kissei Territory.

2.10 Other (Sub)Licensees. In the event Rigel enters into a written agreement with a Third Party granting such Third Party the right to develop and commercialize the Product in all or a portion of the Rigel Territory: (a) Rigel may only grant to such Third Party the right to use, practice, and reference the Data, Inventions, and Regulatory Filings made or generated by or on behalf of Kissei (or its Affiliates or (sub)licensees) under this Agreement if such Third Party also agrees for Rigel to grant to Kissei (and its Affiliates or (sub)licensees) the right to use, practice, and reference the Data, Inventions, and Regulatory Filings made or generated by or on behalf of such Third Party under Rigel's agreement with such Third Party, and (b) Kissei (and its Affiliates and Sublicensees) shall only have the right to use, practice, and reference the Data, Inventions and Regulatory Filings made or generated by or on behalf of such Third Party under Rigel's agreement with such Third Party if such Third Party also has the right to use, practice, and reference the Data, Inventions, and Regulatory Filings made or generated by or on behalf of Kissei (or its Affiliates and Sublicensees) under this Agreement.

2.11 Complementary Products. During the Commercialization Term, in the event Kissei develops and/or commercializes one (1) or more Complementary Products, the following shall apply: (a) for the period starting from the Effective Date and until the [*] of the Product in the Kissei Territory, Kissei shall not, directly or indirectly (including through an Affiliate or a Third Party), conduct [*] activities with respect to any Complementary Product in the Kissei Territory; (b) for a period of [*] of the Product in the Kissei Territory, Kissei shall ensure that the Product has a priority detail position (i.e., first call or second call); (c) Kissei shall not [*] disproportionately favors the Complementary Product; (d) Kissei shall not [*] in a manner that is inconsistent with Kissei's customary practice for its products; and (e) in applying Commercially Reasonable Efforts in the Development and/or Commercialization of the Product [*], Kissei shall not [*].

3. Governance

3.1 Joint Steering Committee. As of the Effective Date, the Parties have established a joint steering committee (the "Joint Steering Committee" or the "JSC"), composed of an equal number of up to [*] senior employees of each Party, to oversee and guide the strategic direction of the collaboration of the Parties under this Agreement. The JSC shall act as a joint consultative body and, to the extent expressly provided herein, a joint decision-making body. The JSC shall in particular:

(a) provide a forum for discussion of the Development and Commercialization of the Compound and Products in the Kissei Territory and the Rigel Territory;

(b) review and discuss the global strategy for the Development of the Product worldwide, coordinate and monitor the Development activities of the Parties under the Development Plan, and oversee implementation of the Development Plan;

(c) review and discuss any proposed amendments to the Development Plan, including corresponding budgets, and approve any proposed amendments to joint work under the Development Plan;

(d) provide a forum for and facilitate communications between the Parties with respect to sharing of Development information, Know-How, and Data in accordance with Sections 2.7 and 4.7;

(e) review and discuss Clinical Trial protocols, and approve protocols for jointly-conducted Clinical Trials, and monitor the progress of all Clinical Trials;

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- (f) review Clinical Trial Data to determine whether progress to the next phase Clinical Trial is merited;
- (g) review and discuss Proposals for Newly-Proposed Development Work pursuant to Section 4.3, including research and Development plans related to new Indications or formulations;
- (h) monitor and coordinate regulatory actions and pharmacovigilance and safety matters for the Product worldwide;
- (i) review and discuss a Party's concern that an action with respect to a Product could reasonably be expected to have a material adverse impact upon the regulatory status of such Product in such Party's territory in accordance with Section 5.5;
- (j) oversee and coordinate the development of new formulations for the Product for use anywhere in the world, as well as analytical testing and other quality-related testing required in the Kissei Territory;
- (k) oversee and coordinate Medical Affairs Activities for the Product in all Indications in the Kissei Territory;
- (l) review and discuss the Commercialization Plan for the Kissei Territory, including proposed amendments;
- (m) review the manufacturing and supply strategy and supply performance;
- (n) oversee and facilitate the Parties' communications and activities with respect to publications under Section 13.4;
- (o) establish joint subcommittees as it deems necessary or advisable to further the purpose of this Agreement, including as set forth in Section 3.7; and
- (p) perform such other functions as appropriate to further the purposes of this Agreement, as expressly set forth in this Agreement or allocated to it by the Parties' written agreement, including providing financial oversight of the activities conducted pursuant to this Agreement.

3.2 JSC Membership and Meetings.

(a) **Committee Members; Minutes.** Each JSC representative shall have appropriate knowledge and expertise and sufficient seniority within the applicable Party to make decisions arising within the scope of the JSC's responsibilities. Each Party may replace its representatives on the JSC on written notice to the other Party, but each Party shall strive to maintain continuity in the representation of its JSC members. The JSC chairperson shall [*]. The chairperson shall prepare and circulate agendas to JSC members at least [*] before each JSC meeting and shall direct the preparation of reasonably detailed minutes for each JSC meeting, which minutes shall include, at a minimum, all decisions made by the JSC, and which shall be approved by the chairperson and circulated to JSC members within [*] after such meeting. The Parties shall determine their respective initial members of the JSC promptly following the Effective Date.

(b) **Meetings.** The JSC shall hold meetings at such times as it elects to do so, but in no event shall meetings of the JSC be held less frequently than [*] prior to [*] the Product in the Kissei Territory. The first JSC meeting shall be held within [*] after the Effective Date, at which meeting the dates for the first Calendar Year shall be set. JSC meetings may be held in person or by audio or video teleconference; provided that, unless otherwise agreed in writing by both Parties, at least [*] shall be held in person. In-person JSC meetings shall be held at locations

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alternately selected by the Parties. Each Party shall be responsible for all of its own expenses of participating in any JSC meeting. No action taken at any JSC meeting shall be effective unless at least [*] of each Party is participating. In addition, upon written notice to the other Party, either Party may request that a special *ad hoc* meeting of the JSC be convened for the purpose of resolving any disputes in connection with, or for the purpose of reviewing or making a decision pertaining to any material subject-matter within the scope of the JSC, the review or resolution of which cannot be reasonably postponed until the following scheduled JSC meeting. Such *ad hoc* meeting shall be convened at such time as may be mutually agreed by the Parties, but no later than [*] following the notification date of request that such meeting be held.

(c) Non-Member Attendance. Each Party may from time to time invite a reasonable number of participants, in addition to its representatives, to attend JSC meetings in a non-voting capacity; provided that if either Party intends to have any Third Party (including any consultant) attend such a meeting, such Party shall provide reasonable prior written notice to the other Party and obtain the other Party's approval for such Third Party to attend such meeting, which approval shall not be unreasonably withheld or delayed. Such Party shall ensure that such Third Party is bound by written confidentiality and non-use obligations consistent with the terms of this Agreement.

3.3 Decision-Making

(a) All decisions of the JSC shall be made by unanimous vote, with each Party's representatives collectively having one (1) vote. If after reasonable discussion and good faith consideration of each Party's view on a particular matter, the representatives of the Parties cannot reach an agreement as to such matter within [*] after such matter was brought to the JSC for resolution, then either Party at any time may refer such issue to the Executive Officers for resolution.

(b) If the Executive Officers cannot resolve such matter within [*] after such matter has been referred to them, then:

(i) Rigel shall have the final decision making authority, which shall be exercised in its reasonable discretion, with respect to Joint Development Work, Rigel's Independent Work, Rigel Only Development Work, and all manufacturing matters, except for:

(1) the [*], the cost of which [*]; and

(2) any material modification to [*]; for the purpose of this subsection (2), "material modification" means any material change to [*]; provided that any such material modification with respect to activities in the Kissei Territory does not adversely affect and are not reasonably expected to adversely affect the Development, manufacture, or Commercialization of the Product in the Kissei Territory; and provided further that Rigel's decision with respect to any of the foregoing shall be consistent with the terms and conditions of this Agreement.

(ii) Kissei shall have the final decision making authority, which shall be exercised in its reasonable discretion, with respect to (1) Commercialization in the Kissei Territory, (2) Medical Affairs in the Kissei Territory, (3) regulatory matters in the Kissei Territory, except with respect to Rigel's Independent Work in the Kissei Territory, and (4) Kissei's Independent Work in the Kissei Territory and Kissei Only Development Work, in each case (1) – (4) that do not adversely affect and are not reasonably expected to adversely affect the Development, manufacture, or Commercialization of the Product in the Rigel Territory; provided that Kissei's decision with respect to any of the foregoing shall be consistent with the terms and conditions of this Agreement.

(iii) Neither Party shall have the final decision making authority with respect to the matters in Sections 3.3(b)(i)(1) and (2), and the status quo shall persist with respect to such matter unless and until the Parties are able to agree.

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3.4 Limitations on Authority. The JSC shall have only such powers as are expressly assigned to it in this Agreement, and such powers shall be subject to the terms and conditions of this Agreement. Without limiting the generality of the foregoing, the JSC will not have the power to amend this Agreement, and no JSC decision may be in contravention of any terms and conditions of this Agreement.

3.5 Discontinuation of the JSC. The activities to be performed by the JSC shall solely relate to governance under this Agreement, and are not intended to be or involve the delivery of services. The JSC shall continue to exist until the first to occur of (a) the Parties mutually agree to disband the JSC; or (b) Rigel provides written notice to Kissei of its intention to disband and no longer participate in the JSC. Once the Parties mutually agree or Rigel has provided written notice to disband the JSC, the JSC shall have no further obligations under this Agreement and, thereafter, each Party shall designate a contact person for the exchange of information under this Agreement or such exchange of information shall be made through Alliance Managers, and decisions formerly assigned the JSC shall thereafter be decisions made between the Parties, subject to the other terms and conditions of this Agreement.

3.6 Management Committee. The Management Officers will meet [*] or such other frequency agreed by the Parties to discuss strategic issues or other issues that either Party deems important to maintain a successful partnership and collaboration, at locations alternately selected by the Parties.

3.7 JDC and JCC.

(a) Within [*] after the Effective Date, the JSC shall establish a joint development committee (the “**JDC**”) to coordinate the Development and regulatory activities of the Parties for the Product under this Agreement. The JDC shall consist of an equal number of representatives of each Party, each of who has sufficient seniority in the respective Party to make decisions with respect to the Development and regulatory activities under this Agreement. The JDC shall be responsible for updating or amending the Development Plan under this Agreement and shall prepare such update or amendment for the JSC’s review and, with respect to shared Development work, approval.

(b) Within [*] in the Kissei Territory, the JSC shall establish a joint commercialization committee (the “**JCC**”) to coordinate the Commercialization activities of the Parties for the Product under this Agreement as appropriate to maximize each Party’s sales of the Product in its respective territory. The JCC shall consist of an equal number of representatives of each Party, each of who has sufficient seniority in the respective Party to make decisions with respect to the Commercialization activities under this Agreement. The JCC shall be responsible for the review of any amendment to the Commercialization Plan under this Agreement and shall prepare such update or amendment for the JSC’s review and discussion.

3.8 Alliance Managers. Promptly after the Effective Date, each Party shall appoint an individual who shall be an employee of such Party having appropriate qualification and experience to act as the alliance manager for such Party (the “**Alliance Manager**”). Each Alliance Manager shall be responsible for coordinating and managing processes and interfacing between the Parties on a day-to-day basis throughout the Term. The Alliance Manager will ensure communication to the JSC of all relevant matters raised at any joint subcommittees (including the JDC and JCC) and project teams. Each Alliance Manager shall be permitted to attend meetings of the JSC, JDC, and JCC, in each case as appropriate and as non-voting participants. The Alliance Managers shall be the primary contact for the Parties regarding the activities contemplated by this Agreement and shall facilitate all such activities hereunder. Each Party may replace its Alliance Manager with an alternative representative at any time with prior written notice to the other Party. Any Alliance Manager may designate a substitute to temporarily perform the functions of that Alliance Manager. Each Party shall bear its own costs of its Alliance Manager, [*].

3.9 Supply Contacts. Each Party shall designate one (1) qualified and experienced supply chain professional to serve as that Party’s primary supply contact regarding the supply of Drug Product under this Agreement (“**Supply Contacts**”). Each Party may replace its Supply Contact with an alternative representative at any time with prior written notice to the other Party. The Supply Contacts shall be responsible for facilitating information exchange

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and discussion between the Parties regarding the supply of Drug Product, placebo and any other Materials (as defined in Section 4.15) needed for the Development of the Product in the Kissei Territory under this Agreement. [*]. Each Party shall bear its own costs of its Supply Contact, [*].

4. Development

4.1 Overview. Subject to the terms and conditions of this Agreement, the Parties will collaborate with respect to the Development of the Compound and Products and share the Data resulting from such collaboration as provided in this Article 4 to facilitate the Development of the Compound and Products throughout the Kissei Territory and the Rigel Territory. In addition, each Party shall use Commercially Reasonable Efforts to facilitate such collaboration with its respective licensees (in the case of Rigel, other than Kissei) and sublicensees.

4.2 Development Plan. The Development of the Compound and Products under this Agreement shall be conducted pursuant to a comprehensive written global Development plan (the “**Development Plan**”) as set forth in this Article 4, which shall be incorporated by reference as part of this Agreement. The Development Plan will include Clinical Trials that the Parties have committed to conducting ([*]), as well as Clinical Trials that may be decided by the JSC [*]. The Development Plan may also include any other Development activities approved by the JSC in accordance with Article 3. As of the Effective Date, the Parties have agreed upon an initial Development Plan and the associated Development Budget, attached to this Agreement as **Exhibit C**. If the terms of the Development Plan contradict, or create inconsistencies or ambiguities with, the terms of this Agreement, then the terms of this Agreement shall govern.

(a) Territory-Specific Development Work. Each Party shall be solely responsible for all Development work with respect to Development activities that are exclusively for the benefit of the countries within such Party’s territory, including (i) any and all Development activities required or recommended specifically by a Regulatory Authority of a Party’s territory solely for the benefit of such Party’s territory (e.g., additional Clinical Trials or CMC-related activities), and (ii) any and all Development activities required for any Pricing and Reimbursement Approval in such Party’s territory (but that are not required for the MAA Approval in such territory). The Development work set forth in this Section 4.2(a) pertaining to the Kissei Territory shall be deemed the “**Kissei Only Development Work**” and the Development work set forth in this Section 4.2(a) pertaining to the Rigel Territory shall be deemed the “**Rigel Only Development Work**”. Without limiting the generality of the foregoing, any Phase 3 Clinical Trial required to obtain MAA Approval of the Product for IgAN, ITP, or AIHA in the Kissei Territory that is not required to obtain MAA Approval of the Product in the Rigel Territory shall be deemed Kissei Only Development Work and Kissei shall be solely responsible for conducting such Phase 3 Clinical Trial(s) at its expense as part of the Development Plan and in accordance with the terms of this Agreement.

(b) Kissei Territory Development Work. Without limiting the generality of the foregoing, Kissei shall be responsible for conducting a Phase 3 Clinical Trial in Japan for the Product for (i) ITP, (ii) AIHA, and (iii) IgAN. The Development Plan shall set forth the timeline and details ([*]) of such Phase 3 Clinical Trials, which shall be deemed Kissei Only Development Work, as well as all other preclinical and clinical Development activities to be conducted by Kissei as necessary to generate Data sufficient to meet the requirements of the PMDA, CFDA, and other Regulatory Authorities in the Kissei Territory for MAA Approval of the Compound and Products for ITP, AIHA, and IgAN. If Kissei [*], Kissei shall present to the JSC [*] and the JSC shall review and approve any decision to [*] Clinical Trial.

(c) Joint Development Work. The Development Plan shall set forth the timeline and details ([*]) of all preclinical and clinical Development activities to be conducted jointly by the Parties as necessary to generate Data sufficient to meet the common requirements of the FDA, the PMDA, and other Regulatory Authorities agreed upon in writing by the Parties for MAA Approval of the Compound and Products for Indications agreed upon in writing by the Parties (“**Joint Development Work**”). Notwithstanding Section 4.2(b), the Parties shall discuss, through the JSC, potentially conducting Phase 3 Clinical Trials for IgAN so as to meet the common requirements of the FDA and PMDA and, if the JSC agrees to a protocol and study plan for such a Phase 3 Clinical Trial that meets the foregoing requirements, such Phase 3 Clinical Trial shall be deemed Joint Development Work. For clarity, if the

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JSC is unable to timely agree upon a protocol and study plan for such Phase 3 Clinical Trial, Rigel shall have the right (but not the obligation) to conduct a Phase 3 Clinical Trial for the Product for IgAN, as the case may be, in the Rigel Territory as Rigel Only Development Work, and Kissei shall have (i) the right (but not the obligation) to conduct a Phase 3 Clinical Trial for the Product in IgAN in the Kissei Territory as Kissei Only Development Work as contemplated in Section 4.2(b) and (ii) the obligation to conduct a Phase 3 Clinical Trial for AIHA for the Product in the Kissei Territory as Kissei Only Development Work unless Kissei presents to Rigel via the JSC [*] for not conducting such Clinical Trial ([*]).

(d) Regulatory Filings and Development Budget. The Development Plan shall include a coordinated Development and regulatory strategy, including [*]. The Development Plan shall also set forth the detailed budget of the anticipated costs for all Development activities (the “**Development Budget**”) on a study-by-study or Clinical Trial-by-Clinical Trial basis.

(e) Updates. From time to time during the Term (at least on [*] basis), the JSC shall prepare updates and amendments, as appropriate, to the then-current Development work under the Development Plan, including budgets in the case of Joint Development Work. If the JSC determines that any pre-clinical studies or Clinical Trials not included in the Development Plan are required in order to obtain or maintain MAA Approval for a Product for IgAN, ITP, or AIHA in one or more countries in the Kissei Territory, then the JSC shall review and approve, pursuant to final decision-making authority as set forth in Section 3.3(b), an amendment to the Development Plan reflecting such additional studies, including associated budget. The costs of such additional studies shall be borne by the Parties as provided in Section 4.5.

4.3 Independent Work.

(a) If either Party (the “**Developing Party**”) is interested in pursuing additional Development work on a Product ([*]) for the benefit of (a) the Rigel Territory or Kissei Territory in the case of Rigel, or (b) the Kissei Territory in the case of Kissei, in each case beyond what is set forth in the then-current Development Plan, then such Party shall provide the other Party (the “**Non-Developing Party**”) with a written detailed plan and budget for such additional work (the “**Proposal**”). Within [*] after the Non-Developing Party’s receipt of the Proposal, the JSC (or JDC or other delegated team) shall meet to review the Proposal and permit the Non-Developing Party an opportunity to ask questions and request additional information from the Developing Party related to the Proposal, including whether such Proposal is reasonably likely to have any adverse effect on the Development or Commercialization of the Product in the Non-Developing Party’s territory. No work under any Proposal shall proceed unless and until the JSC determines in its reasonable discretion that such Proposal is not likely to adversely affect the Development or Commercialization of the Product in the Non-Developing Party’s territory, and following each such determination, if any, the JSC shall incorporate such additional Development work and the corresponding budget into the Development Plan (the “**Newly-Proposed Development Work**”). For any Newly-Proposed Development Work, the Non-Developing Party may elect, at its discretion, to share the Development Costs with respect to such Development work under Section 8.2(a), and following such election such Newly-Proposed Development Work shall be Joint Development Work, but subject to the cost-sharing terms set forth in Section 8.2(a).

(b) If the Non-Developing Party elects to not pursue the Newly-Proposed Development Work jointly with the Developing Party and does not share the Development Costs with respect to such Development work as provided under Section 8.2(a), such Development work shall be deemed the “**Independent Work**” of the Developing Party and the Developing Party may pursue such work subject to the remainder of this Section 4.3, and the Development Costs with respect thereto shall be Independent Work Costs subject to Section 8.2(b). Following the amendment of the Development Plan by the JSC to include any Newly-Proposed Development Work that is Independent Work, the Developing Party may conduct such Independent Work, provided that: (x) it shall do so in accordance with the amended Development Plan, (y) it shall provide updates to the JSC with respect to such Independent Work at each regularly scheduled JSC meeting, and (z) neither Party shall conduct any Independent Work in a manner that would have, or would be reasonably expected to have, any adverse effect on the Development or Commercialization of the Product in either Party’s territory. Rigel shall have the right to conduct Development activities in the Kissei Territory as Independent Work, such as the Development of the Product to support Regulatory

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Approval in any particular Indication in any country or region in the Kissei Territory, in the event Kissei does not wish to conduct such activities as part of the Joint Development Work. Kissei shall have the right to conduct, as Independent Work but subject to the approval of the JSC, Development activities in the Rigel Territory solely as needed to support Regulatory Approval in the Kissei Territory in the event Rigel does not wish to conduct such activities as part of the Joint Development Work and such Development activities cannot, based on the determination of the JSC, be reasonably carried out in the Kissei Territory [*]. In the event either Party conducts such Independent Work in the other Party's territory, the Party conducting such Independent Work shall coordinate and consult with the Non-Developing Party (and any of such Non-Developing Party's (sub)licensee(s) for the applicable country or region in which such Independent Work is proposed to be conducted, subject to such Non-Developing Party's agreement with such (sub)licensee(s)), including with respect to communication with Regulatory Authorities and clinical trial sites selection and management. And in no event may the Developing Party proposing to conduct such Independent Work in a particular country or region in the Non-Developing Party's territory carry out a Clinical Trial in such country or region for the same Indication for which such Non-Developing Party (either by itself or through its Affiliate or actual or potential (sub)licensee) is conducting or is actively planning to conduct in such country or region.

(c) Notwithstanding the foregoing, Rigel shall have the right to conduct any Development activities with respect to the Compound or Product in the Rigel Territory outside the scope of the Development Plan. Such Development activities shall be: (i) deemed Rigel Only Development Work for the purpose of this Agreement, (ii) at Rigel's sole cost and expense pursuant to Section 4.5(a), and (iii) be subject to Section 4.7(d) such that Kissei shall have the right of reference to the data generated in such Development activities without any reimbursement obligation to Rigel.

4.4 Annual Update to Development Budget. The JSC shall review, discuss, and, with respect to Joint Development Work, agree upon the subsequent year's Development Budget on an annual basis [*].

4.5 Development Costs.

(a) **Territory-Specific Development Costs.** Kissei shall be solely responsible for all Development Costs arising from Kissei Only Development Work and Rigel shall be solely responsible for all Development Costs arising from Rigel Only Development Work.

(b) **Joint Development Work.** The costs of Joint Development Work shall be shared by the Parties as set forth in Section 8.2(a), with Rigel being solely responsible for all Development Costs (including Allowable Increases) arising from Joint Development Work conducted in or for the Rigel Territory and Kissei being solely responsible for all Development Costs (including Allowable Increases) arising from Joint Development Work conducted in or for the Kissei Territory. "Allowable Increases" means increased Development Costs resulting from (i) changes in study design after the Effective Date that are approved by the JSC [*], (ii) changes in regulatory requirements arising after the Effective Date ([*]), and (iii) [*].

(c) **Independent Work Costs.** The Party conducting Independent Work set forth in the Development Plan by the JSC under Section 4.3 shall be solely responsible for the Independent Work Costs with respect to such Independent Work as provided in Section 8.2(b).

4.6 Development Responsibilities. Each Party shall be responsible for the Joint Development Work to be conducted in its respective territory and such allocation shall be set forth in the Development Plan, except that, unless otherwise agreed in writing by the Parties, Rigel shall be the Sponsor for all Clinical Trials that are required to obtain MAA Approvals by both the FDA and the PMDA for IgAN and, as applicable, AIHA, and any other Indications agreed in writing by the Parties as Joint Development Work in the Development Plan. Each Party shall have the operational responsibility and be the Sponsor for its own Independent Work, and Kissei shall be the Sponsor and have the operational responsibility for the Kissei Only Development Work, and Rigel shall be the Sponsor and have the operational responsibility for the Rigel Only Development Work.

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4.7 Data Exchange and Use.

(a) General. With respect to all Joint Development Work, Independent Work (but subject to Section 4.7(c) 4.7(c) below), and Kissei Only Development Work, each Party shall in a timely manner provide the other Party with (i) [*] status reports on [*] for clinical studies and Development activities, provided, however, that with respect to [*], (ii) [*] for such activity (e.g., [*]), (iii) preliminary and final Data, and interim, preliminary, and final results and reports, and (iv) output from [*] investigator meetings with respect to such activity. The Parties shall cooperate on a secure website to facilitate the sharing of reports, Data, and other information on a routine basis.

(b) Joint Development Work . Each Party shall have the right to use and reference, without additional consideration, any and all Data generated by or on behalf of the other Party (including by any licensee of Rigel and any Sublicensee of Kissei) under the Joint Development Work, for obtaining and maintaining Regulatory Approval for the Products and otherwise Commercializing the Products in the referencing Party's territory in accordance with the terms of this Agreement, subject to Section 2.10 and Section 5.1(b).

(c) Independent Work Data. Notwithstanding the foregoing, the Party receiving Data resulting from the other Party's Independent Work shall have the right to use such Data only to the extent reasonably necessary for the receiving Party to comply with its regulatory reporting and compliance obligations, including safety reporting obligations, but shall not have the right to use such Data to support its own Development, Regulatory Approval, or Commercialization of the Product in such Party's territory (or, in the case of Kissei, Commercialization of the Product under any Regulatory Approval obtained by Rigel), except pursuant to Section 8.2(b) and 5.1(b).

(d) Rigel Only Development Work and Kissei Only Development Work. Kissei shall have the right to use and reference, without additional consideration, any and all Data generated by or on behalf of Rigel (including by any licensee of Rigel) under any Rigel Only Development Work, for obtaining and maintaining Regulatory Approval for the Products and otherwise Commercializing the Products in the Kissei Territory in accordance with the terms of this Agreement, subject to Section 2.10 and Section 5.1(b). Rigel shall have the right to use and reference, without additional consideration, any and all Data generated by or on behalf of Kissei (including by any Sublicensee of Kissei) under any Kissei Only Development Work, for obtaining and maintaining Regulatory Approval for the Products and otherwise Commercializing the Products in the Rigel Territory in accordance with the terms of this Agreement, subject to Section 2.10. For clarity, all Data resulting from [*] shall not be Independent Work Data for which Kissei is obligated to reimburse Rigel pursuant to Section 4.7(c), but shall in each case be deemed Data generated pursuant to Rigel Only Development Work for which Kissei has the right to use and reference as set forth in this Section 4.7(d).

4.8 Diligence.

(a) General. Each Party shall use Commercially Reasonable Efforts to perform the Development activities assigned to such Party under and in accordance with the Development Plan. In addition, Kissei shall use Commercially Reasonable Efforts to perform Kissei Only Development Work and Kissei's Independent Work, and file MAAs and seek and maintain Regulatory Approval (including Pricing and Reimbursement Approval, as applicable) for the Products throughout the Kissei Territory.

(b) ITP Clinical Trial and Minimum Financial Contribution. Without limiting the generality of the foregoing Section 4.8(a):

(i) Within [*] after the Effective Date, Kissei shall [*] with the PMDA [*] for the Product for ITP in Japan. Prior to the [*] the Effective Date, Kissei shall [*] the PMDA for the Product for ITP in Japan, provided that such [*] period may be extended as agreed by the JSC to the extent due to [*] (provided that Kissei [*]), and delay in technology transfer (to the extent required for Kissei's [*]) or supply from Rigel to Kissei of Drug Product and placebo necessary [*] (the "**Permissible Delay**");

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(ii) between the Effective Date and the [*] of the Effective Date, Kissei shall spend approximately [*] in Development Costs, whether for Joint Development Work, Kissei Only Development Work, or Independent Work.

(iii) With respect to the milestone timelines set forth in subsections (i) and (ii) above, the following shall apply:

(1) If Kissei fails to [*] (which deadline shall be extended by the period of any Permissible Delay), Kissei shall pay to Rigel [*], which payment shall be fully creditable against the next milestone payment under Section 8.3 that becomes payable by Kissei, and if Kissei elects not to make such payment, Rigel shall have the right to terminate this Agreement pursuant to Section 14.2(a). If Kissei makes such payment but again fails to [*] for the Product for ITP in Japan [*], then Rigel will have the right to terminate this Agreement pursuant to Section 14.2(a).

(2) If Kissei fails to achieve its obligations under the foregoing subsection (ii), Kissei shall pay to Rigel [*], which payment shall be creditable against any milestone payment under Section 8.3 or any other payment under this Agreement, and if Kissei elects not to make such payment, Rigel shall have the right to terminate this Agreement pursuant to Section 14.2(a).

(c) **Sublicensing Requirements.** If by the [*] of the Effective Date Kissei has accomplished none of the following in any country or region in the Kissei Territory (i.e., China, Taiwan or Korea): (i) [*] for the Product, or (ii) [*] for the Product, or (iii) [*] the Product, then Rigel shall inform Kissei of its decision to regain the right to the Product in the applicable country or region and the Parties shall promptly, and in any event within [*] after Rigel so informs Kissei, confirm in writing that such country or region shall no longer be included in the Kissei Territory under this Agreement and shall become part of the Rigel Territory. For clarity, if the Parties fail to so confirm in writing that any such country or region is no longer included in the Kissei Territory within such [*] period, such country or region shall automatically be deemed part of the Rigel Territory and excluded from the Kissei Territory upon the expiration of such [*] period. In addition, prior to Kissei's [*], if Rigel or Kissei receives a sublicensing request under the licenses granted to Kissei under this Agreement to Develop and Commercialize the Product in such country, Kissei shall use good faith efforts to negotiate a sublicense agreement with the requesting party on commercially reasonable terms and in accordance with Section 2.2.

4.9 Compliance. Each Party shall Develop the Compound and Products in compliance with all Applicable Laws, including good scientific and clinical practices under the Applicable Laws of the country in which such activities are conducted.

4.10 Development Records. Each Party shall maintain complete, current, and accurate records of all Development activities conducted by it hereunder, and all data and other information resulting from such activities. Such records shall fully and properly reflect all work done and results achieved in the performance of the Development activities in good scientific manner appropriate for regulatory and patent purposes. Each Party shall document all non-clinical studies and Clinical Trials in formal written study reports according to Applicable Laws and national and international guidelines (e.g., ICH, GCP, GLP, and GMP).

4.11 Development Reports. At each regularly scheduled JSC meeting, each Party shall provide the JSC with regular reports detailing its Development activities for the Products under this Agreement, and the results of such activities. In addition, after the completion of any Clinical Trial or other study of the Products, the Party responsible for the conduct of such Clinical Trial or study shall in a timely manner provide the other Party with a data package consisting of, at a minimum, tables, lists, and figures, as well as any other Data specified in the Development Plan or otherwise agreed in writing by the Parties. The Parties shall discuss the status, progress, and results of each Party's Development activities under this Agreement at such JSC meetings.

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4.12 Use of Subcontractors. Each Party may perform its Development activities under this Agreement through one or more subcontractors, provided that (a) such Party will remain responsible for the work allocated to, and payment to, such subcontractors to the same extent it would if it had done such work itself, (b) each subcontractor undertakes in writing obligations of confidentiality and non-use regarding Confidential Information that are substantially the same as those undertaken by the Parties pursuant to Article 13, and (c) each subcontractor agrees in writing to assign all intellectual property developed in the course of performing any such work to such Party (or, in the event such assignment is not feasible, a license to such intellectual property with the right to sublicense to such other Party). The Parties may also subcontract work on terms other than those set forth in this Section 4.12 with the prior approval of the JSC.

4.13 Restrictions. During the Term, neither Party nor any of its Affiliates or sublicensees shall, directly or through any Third Party, sponsor, conduct, cause to be conducted, otherwise assist in, supply any Product for use in connection with, or otherwise fund any research or Development of any Product that is inconsistent with this Agreement. For clarity and without limiting the foregoing, if Kissei wishes to perform or sponsor any study or test on the Compound or Products, including any pre-clinical or non-clinical study, toxicology study, or CMC-related study, Kissei shall first prepare and provide to Rigel a Proposal detailing such study in accordance with Section 4.3 for the JSC's approval.

4.14 Combination Product Development. If either Party desires to Develop a Product in combination with another product, either as a combination product or combination therapy, then such Party shall notify the other Party via the JSC and the JSC shall discuss such proposed Development work at its next regularly scheduled meeting.

4.15 Materials Transfer. In order to facilitate the non-clinical and CMC Development activities contemplated by this Agreement, either Party may provide the other Party certain biological materials or chemical compounds, including, but not limited to API, reference standard and metabolite, Controlled by the supplying Party (collectively, "**Materials**") for use by the other Party in furtherance of such non-clinical and CMC Development activities. Any provision of such Materials [*]. Except as otherwise provided for under this Agreement, all such Materials delivered to the other Party will remain the sole property of the supplying Party, will be used only in furtherance of the Development activities conducted in accordance with this Agreement, will not be used or delivered to or for the benefit of any Third Party, except to subcontractors, without the prior written consent of the supplying Party, and will be used in compliance with all Applicable Laws. The Materials supplied under this Agreement must be used with prudence and appropriate caution in any experimental work because not all of their characteristics may be known. Except as expressly set forth in this Agreement, THE MATERIALS ARE PROVIDED "AS IS" AND WITHOUT ANY REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR ANY PARTICULAR PURPOSE OR ANY WARRANTY THAT THE USE OF THE MATERIALS WILL NOT INFRINGE OR VIOLATE ANY PATENT OR OTHER PROPRIETARY RIGHTS OF ANY THIRD PARTY.

5. Regulatory Activities

5.1 Regulatory Responsibilities.

(a) General.

(i) The Development Plan shall set forth the regulatory strategy for seeking Regulatory Approval for the Compound and Products by the appropriate Regulatory Authorities in the Kissei Territory and Rigel Territory. Subject to the oversight of the JSC and except as otherwise set forth in the Development Plan, each Party shall be responsible for implementing such regulatory strategy in its territory. The Development Plan shall also specify which Party shall apply for and hold Regulatory Filings in each country with respect to the conduct of Development activities, provided that Rigel shall apply for and hold all Regulatory Filings for Rigel Only Development Work and Rigel's Independent Work and Kissei shall hold all Regulatory Filings for Kissei Only Development Work and Kissei's Independent Work. Except as otherwise provided herein or in the Development Plan or required by Applicable Law, each Party shall be responsible for the preparation and submission of any and all

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Product registrations and MAAs in its territory and shall own and hold all such Regulatory Filings (including Regulatory Approvals), except that Rigel shall be responsible for the preparation and submission of Product registrations and MAAs in the Kissei Territory to the extent based on Rigel's Independent Work in the Kissei Territory and shall own and hold all such Product registrations and MAAs until Kissei reimburses Rigel for Kissei's share of such Independent Work Costs as set forth in Section 8.2(b)(ii). For the avoidance of doubt, in no event shall Kissei submit any Product registration application or MAA in the Rigel Territory. At the filing Party's reasonable request and expense ([*]), the other Party shall cooperate with the filing Party in the preparation of any Regulatory Filings or responses to inquiries from a Regulatory Authority in the filing Party's territory, including by providing necessary Data (for clarity, subject to Section 4.7) and technical information and technical support.

(ii) Each Party shall be responsible for the costs of all regulatory activities in its territory, except that any costs incurred by Rigel in connection with regulatory activities in the Kissei Territory pursuant to Rigel's Independent Work shall be Independent Work Costs of Rigel and subject to Section 8.2(b).

(iii) Kissei acknowledges that Rigel may be required to communicate with Regulatory Authorities in the Kissei Territory with regard to the Rigel Independent Work in the Kissei Territory as a result of Development and manufacturing activities in such territory. Rigel shall notify Kissei as soon as reasonably possible of such communication with Regulatory Authorities in the Kissei Territory.

(b) **Rigel Transfer of Regulatory Filings and Right of Reference.** Except as set forth in Section 5.1(c) and subject to Section 8.2(b) in the case of any of Rigel's Independent Work, Rigel shall cooperate with Kissei to enable Kissei to submit Regulatory Filings and obtain MAA Approvals for Products in the Kissei Territory:

(i) provide Kissei with access and right of reference to all Regulatory Approvals and Regulatory Filings submitted to any Regulatory Authority in the Rigel Territory for the Compound and Products that are in Rigel's name and Controlled by Rigel, other than INDs and MAAs relating to any of Rigel's Independent Work in the Kissei Territory for which Kissei has not reimbursed Rigel pursuant to Section 8.2(b), or any other Clinical Trials conducted and Sponsored by Rigel in the Kissei Territory pursuant to the Development Plan; and

(ii) to the extent that such transfer is not permitted under Applicable Laws, Rigel shall provide to Kissei a right of reference or use to such Regulatory Approvals and Regulatory Filings, subject to Section 8.2(b) in the case of any of Rigel's Independent Work. Rigel shall provide appropriate notification of Kissei's access and reference rights to the applicable Regulatory Authorities, at Kissei's expense. For the purposes of this Agreement, "right of reference" means the "right of reference or use" as defined in 21 C.F.R. §314.3(b) and any equivalent regulation outside the U.S., as each may be amended.

(c) **Kissei Regulatory Information Sharing and Right of Reference.**

(i) Kissei shall, in a timely manner, provide Rigel with copies of the final version and at least one interim draft version (or its summary as agreed by the JSC) of any Regulatory Filings prepared, submitted, or received by Kissei in the Kissei Territory pertaining to the Compound and Products, and Rigel shall have the right to review and comment on such Regulatory Filings. For the purpose of this Section 5.1(c)(i), the Regulatory Filings will include CTNs. Kissei shall share with Rigel the following communications/correspondence with any Regulatory Authority: (a) summary of contact reports Kissei receives concerning substantive conversations or substantive meetings in the Kissei Territory with the PMDA with respect to the Product or if contacts with those Regulatory Authorities are made orally, to be reduced in writing, (b) documents related to regulatory milestones and dates (e.g., submission, validations, agency review questions, and opinions, and their equivalent), and (c) cover letters of all agency submissions relating to the Compound or any Product. For clarity, in each case (a)-(c), the documents shared with Rigel shall be provided "as is" and, to the extent available, Kissei shall provide an English translation to Rigel. Kissei shall use Commercially Reasonable Efforts to grant to Rigel access and rights to use any such communications with any Regulatory Authority generated by or on behalf of any Sublicensee. Should Kissei fail to obtain such access and rights from any Sublicensee, Kissei shall not have the right to grant access or rights to such Sublicensee to any Regulatory Filing or right of reference granted to Kissei by Rigel pursuant to Section 5.1(b).

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(ii) Kissei hereby grants to Rigel a right of reference to all Regulatory Filings pertaining to the Compound and Products submitted by or on behalf of Kissei. Rigel may use such right of reference to seek, obtain, and maintain Regulatory Approval of the Products in the Rigel Territory, except that Rigel may use such right of reference to any Regulatory Filings based on Data resulting from Kissei's Independent Work only to comply with its safety reporting obligations, unless Rigel reimburses Kissei for such work as set forth in Section 8.2(b).

5.2 Meetings with Regulatory Authorities. On a current and ongoing basis, each Party shall provide the other Party with a list and schedule of any in-person meeting or material teleconference with the Regulatory Authorities (or related advisory committees) in the Kissei Territory and the Rigel Territory planned for the next Calendar Quarter that relates to the Development of the Compound and Products under the Development Plan in the Kissei Territory and the Rigel Territory (each, a "Regulatory Meeting"). In addition, each Party shall notify the other Party as soon as reasonably possible if such Party becomes aware of any additional Regulatory Meetings that become scheduled for such Calendar Quarter and will keep the other Party informed of any significant interface or communication with any Regulatory Authority which might affect efforts to obtain Regulatory Approval for the Product in the Kissei Territory. Each Party shall be solely responsible for any communications with any Regulatory Authorities occurring or required in connection with performing its regulatory responsibilities set forth in this Article 5 with respect to the Product in the Kissei Territory. With respect to Regulatory Meetings for which Kissei is the responsible Party, Rigel shall have the right to provide input in preparation for all such Regulatory Meetings and Rigel may have its representatives attend any such Regulatory Meetings. Kissei shall have these same rights with respect to any such Regulatory Meetings before such Regulatory Filings are transferred to Kissei under Section 5.1(b)(i).

5.3 Regulatory Inspections. Each Party shall permit the Regulatory Authority(ies) in the other Party's Territory to conduct inspections of itself, its Affiliates, its licensees and its Sublicensees and subcontractors (including Clinical Trial sites) relating to the Development of the Product under the Development Plan, and shall ensure that such Affiliates, its licensees and its Sublicensees and subcontractors permit such inspections. In addition, each Party shall promptly notify the other Party of any such inspection and shall supply the other Party with all information pertinent thereto. Each Party shall have the right to have a representative attend any such inspection.

5.4 Adverse Event Reporting; Pharmacovigilance Agreement. As soon as reasonably practicable after the Effective Date, the Parties shall enter into a pharmacovigilance agreement setting forth the worldwide pharmacovigilance procedures for the Parties with respect to the Products, such as Safety Data sharing, adverse events reporting, and safety signal and risk management (the "Pharmacovigilance Agreement"), which agreement shall be amended by the Parties [*] to comply with any changes in Applicable Laws or any guidance received from Regulatory Authorities. Such procedures shall be in accordance with, and enable the Parties to fulfill, local and national regulatory reporting obligations under Applicable Laws (including, to the extent applicable, those obligations contained in ICH guidelines) to monitor patients' safety. Rigel has established, and shall continue to hold (either by itself or through a vendor engaged by Rigel) the global safety database for the Products, and shall maintain such global safety database for so long as such Product is under Development or Commercialization by the Parties. The Parties will collaboratively agree on data cut points for periodic aggregate safety reports and Rigel will author such reports; the Parties will jointly review and approve such reports before submission to worldwide Regulatory Authorities as required. Rigel shall [*] such database and preparing such reports. Kissei shall maintain its own safety database for the Product in the Kissei Territory and shall provide all Safety Data, including adverse event reports, in such database to Rigel in accordance with this Section 5.4 and the Pharmacovigilance Agreement. Kissei shall [*] such database for the Kissei Territory and preparing reports in the Kissei Territory. Rigel will ensure that each Party is able to access the data from the global safety database in order to meet legal and regulatory obligations. The JSC shall establish a safety subcommittee, and all Safety Data, including adverse event reports, shall be submitted to such safety subcommittee and Rigel concurrently so that Rigel may update the global safety database accordingly. Such safety subcommittee shall coordinate with respect to any Safety Data reporting for the Products to the Regulatory Authorities in the Kissei Territory, but each Party shall be primarily responsible for reporting quality complaints, adverse events, and Safety Data related to the Products to any necessary Regulatory Authorities, and responding to safety issues and to all requests of Regulatory Authorities related to the Products under any MAA or Regulatory Approval for the Product held by such Party and filed with such Regulatory Authorities, [*]. Each Party agrees to comply with its

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respective obligations under the Pharmacovigilance Agreement and to cause its Affiliates, licensees, and sublicensees to comply with such obligations.

5.5 No Harmful Actions. If a Party reasonably believes that the other Party is taking or intends to take any action with respect to a Product that could reasonably be expected to have a material adverse impact upon the regulatory status of such Product in the first Party's territory, then such Party may bring the matter to the attention of the JSC and the Parties shall discuss in good faith to promptly resolve such concern.

5.6 Notification of Threatened Action. Each Party shall notify the other Party within [*], after receiving any information regarding any threatened or pending action, inspection, or communication by any Regulatory Authority which may adversely affect the safety or efficacy claims of any Product or the continued Development or Commercialization of any Product. Upon receipt of such information, the Parties shall promptly consult with each other in an effort to arrive at a mutually acceptable procedure for taking appropriate action.

5.7 Recalls. In the event that a recall, withdrawal, or correction (including the dissemination of relevant information) of any Product in a Party's territory is required by a Regulatory Authority of competent jurisdiction, or if any Regulatory Authority requires or advises either Party or such Party's Affiliates or sublicensees to distribute a "Dear Doctor" letter or its equivalent regarding use of such Product in a Party's territory, or if a recall, withdraw, or correction of a Product in its territory is deemed advisable by such Party in its sole discretion, such Party shall so notify the other Party no later than [*] in advance of the earlier of (a) initiation of a recall, withdrawal, or correction, or (b) the submission of plans for such an action to a Regulatory Authority. Any such recall, withdrawal, correction, or dissemination of information (e.g., "Dear Doctor" letter) shall be referred to herein as a "**Recall**". Promptly after being notified of a Recall, each Party shall provide the other Party with such assistance in connection with such Recall as may be reasonably requested by such other Party. All costs and expenses in connection with a Recall [*] shall be paid by [*], including the costs and expenses related to the dissemination of relevant information. Each Party shall handle exclusively the organization and implementation of all Recalls of Products in its territory. Notwithstanding the foregoing, any Recall related to the manufacture and supply of the Product by Rigel to Kissei shall be governed by the terms and conditions of the Supply Agreement (defined in Section 7.1).

5.8 Sunshine Reporting Laws. Each Party acknowledges that the other Party may be subject to federal, state, local, and international laws, regulations, and rules related to the tracking and reporting of payments and transfers of value provided to health care professionals, health care organizations, and other relevant individuals and entities (collectively, "**Sunshine Reporting Laws**"), and agrees to provide the other Party with all information regarding such payments or transfers of value pertaining to the Joint Development Work by such Party in the form separately agreed in advance by the Parties as necessary for such other Party to comply in a timely manner with its reporting obligations under the Sunshine Reporting Laws.

6. Commercialization

6.1 General. Subject to the terms and conditions of this Article 6, Kissei shall have the sole and exclusive responsibility, at its own expense, for all aspects of the Commercialization of the Products in the Kissei Territory, including (a) developing and executing a commercial launch and pre-launch plan, (b) negotiating with applicable Governmental Authorities and other payors regarding the price and reimbursement status of the Products, (c) marketing and promotion, (d) booking sales and distribution and performance of related services, (e) handling all aspects of order processing, invoicing and collection, inventory and receivables, (f) providing customer support, including handling medical queries, and performing other related functions, and (g) conforming its practices and procedures to Applicable Laws relating to the promotion, sales and marketing, access, and distribution of the Products in the Kissei Territory.

6.2 Commercialization Plan. As soon as reasonably practicable, but no later than [*], Kissei shall prepare and present to the JSC a reasonably detailed plan for the Commercialization of the Product in the Kissei Territory (the "**Commercialization Plan**"). The Commercialization Plan shall include such information on a country-by-country basis, as applicable. Kissei shall update and amend the Commercialization Plan on [*] basis following the

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First Commercial Sale of the Product in the Kissei Territory and present such updates and any amendments to the JSC for review and discussion. Subject to the provisions of this Agreement and compliance with the Commercialization Plan, Kissei shall have full Control and authority with respect to the day-to-day Commercialization of the Products and implementation of the Commercialization Plan.

6.3 Diligence.

(a) General. During the Term, Kissei shall use Commercially Reasonable Efforts to Commercialize the Products for each and every Indication that has received or will receive Regulatory Approval in the Kissei Territory.

(b) Product Launch. Kissei shall launch the Product for each Indication that has received Regulatory Approval in the Kissei Territory as soon as reasonably possible following receipt of such Regulatory Approval. As applicable, Kissei shall obtain all Pricing and Reimbursement Approvals necessary to launch such Product for such Indication as soon as reasonably possible following receipt of MAA Approval of such Product in a country. Without limiting the generality of the foregoing, Kissei shall launch the Product in each country in the Kissei Territory within [*] after receiving Regulatory Approval (or, where applicable, Pricing and Reimbursement Approval) of the Product for an Indication from the applicable Regulatory Authority in such country. Thereafter, Kissei shall utilize Commercially Reasonable Efforts in the ongoing support for the Product in each country in the Kissei Territory.

(c) Commercial Financial Contribution. Kissei shall spend [*] in connection with the marketing and promotion of the Product in the Kissei Territory.

(d) Minimum Sales Force. During the Term, Kissei shall engage in-house sales representatives to promote and detail the Product in Japan. Without limiting the generality of the foregoing, prior to the date that is [*], Kissei shall have engaged [*] in-house sales representatives to promote and detail the Product in Japan.

(e) Commercial Updates. Kissei shall update the JSC on [*] basis regarding its Commercialization activities with respect to the Products in the Kissei Territory. Each such update shall be in a form to be agreed by the JSC and shall summarize Kissei's and its Affiliates' and Sublicensees' significant Commercialization activities with respect to the Products in the Kissei Territory, and shall contain at least such information at such level of detail reasonably required by Rigel to determine Kissei's compliance with its diligence obligations set forth in this Section 6.3. Such updates shall include Kissei's sales activities, sales forecasts for at least the next [*], marketing activities, and Medical Affairs Activities.

6.4 Coordination of Commercialization Activities.

(a) Generally. The Parties, through the JSC (or JCC or other designated team), shall update each other on Commercialization strategies for the Product (e.g., for branding and messaging, international congresses, advisory boards) in their respective territories, and the Parties shall work together to identify and take advantage of any potential global strategies and messaging. The foregoing shall not be construed as requiring either Party to seek the other Party's consent in connection with such first Party establishing or implementing any sales, marketing, or medical affairs practices in such first Party's territory.

(b) Pricing. Kissei shall keep Rigel timely informed on the status of any application for Pricing and Reimbursement Approval or material updates to an existing Pricing and Reimbursement Approval in the Kissei Territory, including any discussion with a Regulatory Authority with respect thereto. Kissei and its Affiliates and Sublicensees shall not sell any Product in [*], in such a manner as to [*] the selling price of the Product [*].

(c) Sharing of Promotional Materials. Kissei shall, at its own expense, prepare, develop, produce, or otherwise obtain and utilize sales, promotional, advertising, marketing, website, educational, and training

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materials (the “**Promotional Materials**”) to support its Commercialization activities in the Kissei Territory, and shall ensure that such Promotional Materials, as well as all information contained therein, comply with all Applicable Laws and are consistent with any Regulatory Approvals obtained for the Product in the applicable jurisdiction in the Kissei Territory. At Rigel’s written reasonable request, Kissei shall share samples of and updates to Promotional Materials with respect to the Commercialization of the Products with Rigel. For clarity, the Promotional Materials shall be provided to Rigel “as is”.

(d) Commercialization in Rigel Territory. For clarity, Rigel shall have the exclusive right to Commercialize the Product in the Rigel Territory at its own cost and expense, with or without Third Party(ies).

6.5 Medical Affairs Activities.

(a) Coordination of Global Medical Affairs Activities. Rigel shall be responsible for all Medical Affairs Activities for the Product in the Rigel Territory in accordance with the medical affairs portion of the Development Plan. Kissei shall be responsible for Medical Affairs Activities in the Kissei Territory in accordance with the medical affairs portion of the Development Plan, provided, however, that Rigel shall have the right, but not the obligation, to also conduct Medical Affairs Activities in the Kissei Territory in global support of the Product, consistent with the medical affairs portion of the Development Plan and under prior approval of the JSC. Kissei will not undertake Medical Affairs Activities in the Rigel Territory without Rigel’s prior written consent to be given on a case-by-case basis.

(b) Advisory Panels. To the extent practicable, each Party shall give the other Party written notice at least [*] in advance of any major market or international level advisory panel meetings with key opinion leaders with respect to the Commercialization of the jointly-developed Products in the Kissei Territory and the Rigel Territory that are held, sponsored, or attended by either Party or its Affiliate or sublicensee, and each Party shall have the right to attend and participate in such meetings with the consent of the other Party.

6.6 Diversion. Each Party hereby covenants and agrees that it and its Affiliates shall not, and it shall contractually obligate (and use Commercially Reasonable Efforts to enforce such contractual obligation) its sublicensees not to, directly or indirectly, promote, market, distribute, import, sell, or have sold any Product, including via the Internet or mail order, to any Third Party or to any address or Internet Protocol address or the like in the other Party’s territory. Neither Party shall engage, nor permit its Affiliates and sublicensees to engage, in any advertising or promotional activities relating to any Product for use directed primarily to customers or other buyers or users of such Product located in any country or jurisdiction in the other Party’s territory, or solicit orders from any prospective purchaser located in any country or jurisdiction in the other Party’s territory. If a Party or its Affiliates or sublicensees receives any order for a Product for use from a prospective purchaser located in a country or jurisdiction in the other Party’s territory, such Party shall immediately refer that order to such other Party and shall not accept any such orders. Neither Party shall, nor permit its Affiliates and sublicensees to, deliver or tender (or cause to be delivered or tendered) any Product for use in the other Party’s territory.

7. Manufacture and Supply

7.1 Rigel shall manufacture and supply, itself or through a Third Party contract manufacturer, all Drug Product and its placebo in fill and finished form but without final packaging or labeling, for use in the Development and Commercialization of the Products under this Agreement, as the exclusive manufacturer and supplier for Kissei, in compliance with the Applicable Laws in the Kissei Territory.

(a) All Drug Product and its placebo supplied by Rigel to Kissei for use for Development purposes shall be [*] to Kissei if such Drug Product and placebo is [*], and if it is [*] it shall be supplied [*], payment for which shall be due within [*] after Kissei’s receipt from Rigel of an invoice for such Drug Product and placebo. Kissei shall provide Rigel with each request for Drug Product for Development purposes [*] of Drug Product ordered.

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(b) All Drug Product supplied by Rigel to Kissei for use for Commercial sale shall be subject to the pricing set forth in Section 8.5. Kissei shall be responsible, at its expense, for the final packaging and labeling of the Product for all countries in the Kissei Territory. Kissei shall also be responsible, at its sole expense, for any specific manufacturing requirements, such as stability studies or development of finished product presentations, necessary to obtain MAA Approval of the Product in the Kissei Territory.

7.2 Drug Master File. In connection with Kissei's preparation and filing of an MAA for the Product in the Kissei Territory and to the extent required for MAA approval in the Territory, at Kissei's request [*] ([*]), Rigel shall obtain and maintain a DMF for the Product to support such filing.

7.3 Supply Agreement. Concurrently with the execution of this Agreement, the Parties shall enter into a supply agreement for the manufacture and supply of the Drug Product to Kissei (the "**Supply Agreement**").

8. Financial Provisions

8.1 Upfront Payment. Kissei shall make a one-time, non-refundable, non-creditable upfront payment to Rigel of thirty-three million dollars (\$33,000,000) within ten (10) days after receiving an invoice from Rigel issued promptly after the Effective Date.

8.2 Sharing/Reimbursements of Development Costs

(a) **Shared Development Costs.** With respect to Joint Development Work, Kissei shall bear one hundred percent (100%) of all Development Costs (including Allowable Increases) for Joint Development Work pertaining to the Kissei Territory and Rigel shall bear one hundred percent (100%) of all Development Costs (including Allowable Increases) for Joint Development Work pertaining to the Rigel Territory, in each case as set forth in the Development Plan. No later than [*] after the beginning of each Calendar Quarter during which a Party will perform any Joint Development Work in such Calendar Quarter, such Party shall submit to the other Party a statement setting forth the Development Costs incurred, including the other Party's share (calculated in accordance with the foregoing sentence) of (i) estimated Development Costs for the then current quarter; (ii) variances from prior invoiced estimates and actual Development Costs; and (iii) Development Costs incurred by or on account of such Party in the past quarter not previously invoiced. Such invoice shall include a reasonably detailed report for such Development Costs, including supporting documents. The other Party shall pay the amount invoiced within [*] after the receipt of the invoice, subject to the other Party's right to audit the invoicing Party's records and books related to such costs as provided in Section 9.4. If both Parties will perform Joint Development Work under the Development Plan in such Calendar Quarter, the Parties shall consolidate the payments for such Calendar Quarter into a single payment from one Party to the other Party, as applicable.

(b) Independent Work

(i) Except as set forth below in this Section 8.2(b), each Party shall bear all of the Development Costs incurred by or on account of such Party in performing its own Independent Work (the "**Independent Work Costs**"). After the completion of such Independent Work, such Party shall provide the other Party with a report of such Independent Work Costs. If a Party desires to submit any portion of the Data resulting from any Independent Work conducted by the other Party and related Regulatory Filings generated by the other Party to support Regulatory Approval in its own territory, then such Party shall notify the other Party in writing at any time following the completion of such Independent Work. Within [*] after its receipt of such notice, the Party conducting or having conducted such Independent Work shall submit to the other Party a reasonably detailed invoice setting forth [*] the Independent Work Costs that such other Party would have incurred in connection with the generation of such Data if such Independent Work Costs were Development Costs shared jointly by the Parties as set forth in Section 8.2(a) (e.g., with respect to Independent Work conducted by Rigel, Kissei would be responsible for [*] any Independent Work Costs pertaining to the Kissei Territory). Should there be no Independent Work Costs pertaining to the Kissei Territory for Rigel Independent Work and Kissei wishes to reference the Data from such Independent

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Work for regulatory purposes in the Kissei Territory, then the Parties shall negotiate in good faith a percentage reimbursement of Rigel's Independent Work Costs for such Independent Work. If Kissei decides to use such Data to support Regulatory Approval of the Product in the Kissei Territory, then Kissei shall notify Rigel in writing and pay the amount invoiced by Rigel within [*] after the receipt of such invoice.

(ii) Notwithstanding the foregoing Section 8.2(b)(i), if Rigel conducts Independent Work in the Kissei Territory and obtains MAA Approval of the Product in any country in the Kissei Territory for any new Indication or new formulation of the Product as a result of such Independent Work, Kissei shall be obligated to reimburse Rigel for the greater of: (A) [*] any of Rigel's Independent Work Costs for Development activities specifically performed to support the MAA filing in such country in the Kissei Territory; and (B) the pro-rata share of the total costs for the global Development of such Product for such Indication allocated to the country(ies) or region(s) in the Kissei Territory [*]. Upon Rigel's receipt of such payment in full, Kissei shall have the right and obligation to Commercialize, itself or through a Sublicensee, such Product under such MAA Approval. In addition, Kissei shall pay to Rigel the milestone payment(s) set forth in Section 8.3 triggered by such Product for such Indication in such country that would have been paid if such Development and regulatory activities were conducted by Kissei (or its Affiliate or Sublicensee) instead of Rigel (i.e., MAA submission and approval milestone payments for such Indication) (the "Missed Milestone Payments"), by making a [*] payment to Rigel that is equal to [*] (the "Milestone Catch-Up Payment") until the total amount of such Milestone Catch-Up Payments made by Kissei in aggregate equals the amount of such Missed Milestone Payments. For clarity, such Milestone Catch-Up Payments shall commence with [*] and shall be in addition to the Transfer Price payments for such Product paid by Kissei to Rigel under Section 8.5(a) and ends at the end of the Commercialization Term.

(c) **Internal Development Cost.** Each Party shall record and calculate its internal Development Costs on an FTE basis at the applicable FTE Rate.

8.3 Development Milestone Payments.

(a) **Development Milestones.** Subject to the remainder of this Section 8.3, Kissei shall pay to Rigel the one-time, non-refundable, non-creditable payments set forth in the table below upon the achievement of the applicable milestone event (whether by or on behalf of Kissei or its Affiliates or Sublicensees).

Milestone Event	Milestone Payment		
	For 1 st Indication Achieved	For 2 nd Indication Achieved	For 3 rd Indication Achieved
[*]	\$[*]	\$[*]	\$[*]
[*]	\$[*]	\$[*]	\$[*]
[*]	\$[*]	\$[*]	\$[*]
[*]	\$[*]	\$[*]	\$[*]
[*]	\$[*]	\$[*]	\$[*]

For the application of the table above: (i) if [*] is the [*] Indication to achieve a milestone event, Kissei shall pay to Rigel the milestone payment for such milestone event set forth in the column for the [*] Indication achieved, and for [*], the milestone payment set forth in the column for the [*] Indication shall apply, unless such Indication is [*], in which event the milestone payment set forth in the column for the [*] Indication shall apply and the column for the [*] Indication shall apply to achievement of the milestone event in a [*] Indication; (ii) if [*] is the

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[*] Indication to achieve a milestone event, Kissei shall pay to Rigel the milestone payment for such milestone event set forth in the column for the [*] Indication achieved, and for [*], the milestone payment set forth in the column for the [*] Indication shall apply, unless such Indication is [*], in which event the milestone payment set forth in the column for the [*] Indication shall apply and the column for the [*] Indication shall apply to achievement of the milestone event in a [*] Indication; and (iii) if [*] is the [*] Indication to achieve a milestone event, Kissei shall pay to Rigel the milestone payment for such milestone event set forth in the column for the [*] Indication achieved, and for [*], the milestone payment set forth in the column for the [*] Indication shall apply if such milestone payment for the [*] Indication has not been made (i.e., [*]) or, the milestone payment set forth in the column for the [*] Indication shall apply if such milestone payment for the [*] Indication has previously been made. For clarity, each milestone payment above shall be paid not more than once for each Indication and overall for no more than three Indications under this Agreement, and the total amount payable by Kissei to Rigel pursuant to this Section 8.3(a) is [*]. By way of example only, [*]. By way of further example only, [*].

(b) Notice and Payment. Kissei shall notify Rigel in writing within [*] after the achievement of any milestone set forth in this Section 8.3 by Kissei or its Affiliates or Sublicensees and, in the case of Independent Work conducted by Rigel in the Kissei Territory, Rigel will notify Kissei in writing within [*] after the achievement of any milestone set forth in this Section 8.3 by Rigel. Promptly following receipt of any such notice from Kissei, Rigel will issue an invoice for the applicable development milestone payment to Kissei. Kissei shall pay to Rigel the applicable development milestone payment within [*] after the receipt of such invoice.

8.4 Sales Milestones Payments.

(a) Kissei shall pay to Rigel the one-time, non-refundable, non-creditable payments set forth in the table below when the aggregated Net Sales of all Products [*] in any Calendar Year first reach the values indicated in the table below. For clarity, each payment in this Section 8.4 shall be payable once only upon first achievement of the applicable milestone event, regardless of the number of times such milestone is subsequently achieved.

Aggregate Net Sales of all Products [*] in a Calendar Year		Milestone Payment
Equal or exceed	\$[*]	\$[*]
Equal or exceed	\$[*]	\$[*]
Equal or exceed	\$[*]	\$[*]
Equal or exceed	\$[*]	\$[*]

(b) Notice and Payment. As part of the report in Section 9.1, Kissei shall provide written notice to Rigel if the aggregated Net Sales of all Products [*] in any Calendar Year first reach the values set forth in Section 8.4(a) above, and Kissei shall pay to Rigel the corresponding Net Sales milestone payment within [*] after the end of such Calendar Year.

8.5 Transfer Price.

(a) Transfer Price During the Commercialization Term.

(i) In consideration for the Drug Product provided by Rigel to Kissei for Commercial use, Kissei shall pay to Rigel a provisional transfer price (the “**Transfer Price**”) equal to the percentage rates set forth

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in the table below (the “**Transfer Price Rate**”) for all Product provided to Kissei for sale by or on behalf of Kissei or its Affiliates or Sublicensees during the Commercialization Term.

Annual Net Sales of all Products in [*]		Transfer Price Rate
Portion less than or equal to	\$[*]	[*]%
Portion greater than and less than or equal to	\$[*] \$[*]	[*]%
Portion greater than	\$[*]	[*]%

Annual Net Sales of all Products in [*]	Transfer Price Rate
(Regardless of the sales scale)	[*]%

(ii) Notwithstanding the foregoing, on a country-by-country or region-by-region basis, if [*] a unit of Product exceeds an amount equal to [*] for such unit of Product in such country or region (the “**Base Percent**”), the Transfer Price Rate set forth in Section 8.5(a)(i) for such unit of Product in such country or region shall be adjusted accordingly: for [*] the Base Percent, the Transfer Price Rate set forth in Section 8.5(a)(i) shall be increased by [*], provided, however, that in no event shall the Transfer Price Rate exceed [*]. By way of example only, [*] for such Product in a particular country, the Transfer Price Rate for such Product in such country shall be equal to [*] for portions of Net Sales less than or equal to [*] for portions of Net Sales greater than [*], but less than [*], and [*] for portions of Net Sales greater than [*]. For clarity, the Transfer Price Rate in this Section 8.5(a) shall apply to the units of Products sold for the period during which such Transfer Price Rate(s) applies, regardless of when such Products are manufactured and/or supplied to Kissei. If, during the Commercialization Term, the Transfer Price for the Product [*] for such Product falls below an amount equal to [*] for such Product, the Parties shall discuss in good faith a modification in the Transfer Price Rate(s) for such Product [*].

(b) **Transfer Price During the Extended Commercialization Term.** In consideration for the Drug Product provided by Rigel to Kissei for Commercial use, Kissei shall pay to Rigel a Transfer Price equal to [*] for all Product manufactured for sale by or on behalf of Kissei or its Affiliates or Sublicensees during the Extended Commercialization Term. For clarity, Kissei shall have the right to obtain other source(s) of supply for the Compound and Drug Product and to conclude a contract with Rigel’s manufacturers directly after the Commercialization Term.

(c) **Transfer Price Payments During the Commercialization Term**

(i) **Estimated Price.** No later than [*] the first Product in the first Indication in the Kissei Territory, Kissei shall calculate and report to Rigel its good-faith, estimated average per unit Net Sales price for the Product in the Kissei Territory (the “**ENS**”) until the end of that Calendar Year. Thereafter, no later than [*] before the beginning of each Calendar Year, Kissei shall calculate and report to Rigel the ENS for the Product in the Kissei Territory for such Calendar Year. The ENS shall be calculated and reported by Kissei on a country-by-country basis.

(ii) **Initial Payment.** For each unit of Drug Product delivered to Kissei in a Calendar Quarter during the Commercialization Term, Kissei shall pay to Rigel an amount equal to the Transfer Price Rate of the applicable ENS for Drug Product for such Calendar Quarter, which amount shall be paid within [*] Kissei receives Rigel’s invoice for such quantity of Drug Product.

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(iii) Actual Price and True Up. Within [*] after the end of each Calendar Quarter during the Commercialization Term, Kissei shall calculate and report to Rigel in writing the actual average per unit Net Sales price for the Product in the Kissei Territory in such Calendar Quarter (the “ANS”) on a country-by-country basis. The ANS shall be calculated by dividing the Net Sales for such Calendar Quarter in a country by the number of units of Product sold by Kissei that constitutes the Net Sales for such period in such country. Within [*] after Kissei’s report of the ANS for a Calendar Quarter:

(1) if the ANS is greater than the ENS for a country, then Kissei shall pay to Rigel a true up payment equal to the applicable Transfer Price Rate multiplied by (ANS – ENS) for each unit of Drug Product ordered by Kissei and delivered by Rigel for Commercial use in such country during such Calendar Quarter; and

(2) if the ANS is less than the ENS for a country, then Rigel shall issue a credit to Kissei equal to the applicable Transfer Price Rate multiplied by (ENS – ANS) for each unit of such Drug Product ordered by Kissei and delivered by Rigel for Commercial use in such country during such Calendar Quarter.

(d) Transfer Price Adjustments During the Commercialization Term.

(i) During the Commercialization Term, if one or more Generic Products to a Product is sold in any country in the Kissei Territory for such Product in such country, and such Generic Products [*] during such Calendar Quarter, the Transfer Price Rates provided in Section 8.5(a) for such Product shall be reduced in such country by [*] for such Calendar Quarter.

(ii) During the Commercialization Term, if it is necessary for Kissei to obtain a license from a Third Party under any Patent in a particular country in the Kissei Territory in order to sell a Product in such country and Kissei obtains such a license, Kissei may deduct from the Transfer Price that would otherwise have been due pursuant to Section 8.5(a) with respect to Net Sales of such Product in such country in a particular Calendar Quarter an amount equal to [*] paid by Kissei to such Third Party pursuant to such license on account of the sale of such Product in such country during such Calendar Quarter. For clarity, [*].

(iii) Notwithstanding the foregoing, during any Calendar Quarter in the Commercialization Term for a Product in a country, the operation of subsection (i) and (ii) above, individually or in combination, shall not reduce by more than [*] the Transfer Price that would otherwise have been due under Section 8.5(a) with respect to Net Sales of such Product in such country during such Calendar Quarter. Kissei [*].

(e) Transfer Price Payments During the Extended Commercialization Term. The Transfer Price payable by Kissei to Rigel for each unit of Drug Product delivered to Kissei during the Extended Commercialization Term under Section 8.5(b) shall be due within [*] after Kissei’s receipt from Rigel of an invoice for such Drug Product. For clarity, such payments shall not be subject to any offsets or reductions whatsoever, including those set forth in Section 8.5(d).

9. Payment; Records; Audits

9.1 Payment; Reports. All Transfer Price payments due under Section 8.5 shall be accompanied by a report setting forth, on a country-by-country basis, Net Sales of the Products by Kissei and its Affiliates and Sublicensees in the Kissei Territory in sufficient detail to permit confirmation of the accuracy of the Transfer Price payment made, including, for each country, the number of Products sold, the Gross Sales and Net Sales of Products, including the deductions from Gross Sales to arrive at Net Sales, the Transfer Price payable, the method used to calculate the Transfer Price, the exchange rates used, any adjustments to the Transfer Price Rate in accordance with Section 8.5(d), and whether any Net Sales milestone under Section 8.4 has been achieved. Prior to the First Commercial Sale of the Product in the Kissei Territory, the Parties will agree on the form of Transfer Price report.

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Kissei shall submit a single report for all Net Sales during a Calendar Year, including all of Kissei's and its Affiliates' and Sublicensees' Net Sales, but shall separately identify the Net Sales and other information applicable to each entity.

9.2 Exchange Rate; Manner and Place of Payment. All references to dollars and "\$" herein shall refer to U.S. dollars. All payments hereunder shall be payable in U.S. dollars. When conversion of Net Sales from any currency other than U.S. dollars is required, such conversion shall be at the exchange rate equal to the conversion rate for the U.S. dollar for the currency of the country in which the applicable Net Sales were made as published by [*]. All payments owed under this Agreement shall be made by wire transfer in immediately available funds to a bank and account designated in writing by Rigel, unless otherwise specified in writing by Rigel.

9.3 Taxes.

(a) Taxes on Income. Each Party shall be solely responsible for the payment of all taxes imposed on its share of income arising directly or indirectly from the activities of the Parties under this Agreement.

(b) Tax Cooperation. The Parties agree to cooperate with one another and use reasonable efforts to avoid or reduce tax withholding or similar obligations in respect of the milestone payments, Transfer Price payments, and other payments made by Kissei to Rigel under this Agreement. To the extent that Kissei is required by Applicable Laws to deduct and withhold taxes on any payment to Rigel, Kissei shall pay the amounts of such taxes to the proper Governmental Authority in a timely manner and promptly transmit to Rigel an official tax certificate or other evidence of such payment sufficient to enable Rigel to claim such payment of taxes. Rigel shall provide Kissei any tax forms that may be reasonably necessary in order for Kissei to not withhold tax or to withhold tax at a reduced rate under an applicable bilateral income tax treaty, to the extent legally able to do so. Rigel shall use reasonable efforts to provide any such tax forms to Kissei in advance of the due date. Kissei shall provide Rigel with reasonable assistance to enable the recovery, as permitted by Applicable Laws, of withholding taxes or similar obligations resulting from payments made under this Agreement, such recovery to be for the benefit of Rigel. Kissei shall have the right to deduct any such tax, levy, or charge actually paid from payment due to Rigel. Each Party agrees to assist the other Party in claiming exemption from such deductions or withholdings under double taxation or similar agreement or treaty from time to time in force and in minimizing the amount required to be so withheld or deducted.

(c) Taxes Resulting From Kissei's Action. If a Party takes any action of its own discretion (not required by a Regulatory Authority), including any assignment, sublicense, change of place of incorporation, or failure to comply with Applicable Laws or filing or record retention requirements, which results in a withholding or deduction obligation ("**Withholding Tax Action**"), then such Party shall pay the sum associated with such Withholding Tax Action. For clarity, if Kissei undertakes a Withholding Tax Action, then the sum payable by Kissei (in respect of which such deduction or withholding is required to be made) shall be increased to the extent necessary to ensure that Rigel receives a sum equal to the sum which it would have received had no such Withholding Tax Action occurred. Otherwise, the sum payable by Kissei (in respect of which such deduction or withholding is required to be made) shall be made to Rigel after deduction of the amount required to be so withheld or deducted. If a change in Applicable Laws results in a withholding or deduction obligation absent either Party taking a Withholding Tax Action, then the amount of such withholding or deduction obligation shall be paid by Kissei to the applicable Governmental Authority on behalf of Rigel, provided that Kissei shall use reasonable efforts to assist Rigel in minimizing or recovering such withholding or deduction obligation. The Parties shall use commercially reasonable efforts to invoke the application of any applicable bilateral income tax treaty that would reduce or eliminate otherwise applicable taxes with respect to payments payable pursuant to this Agreement.

9.4 Records; Audit. Each Party shall maintain complete and accurate records in sufficient detail in relation to this Agreement to permit the other Party to confirm the accuracy of the amount of Development Costs and the Cost of Goods to be reimbursed or shared, achievement of Net Sales milestones, and the amount of Transfer Price and other payments payable under this Agreement. Each Party will keep such books and records for at least [*] following the Calendar Year to which they pertain. Upon reasonable prior notice, such records shall be inspected during regular business hours at such place or places where such records are customarily kept by an independent certified public accountant (the "**Auditor**") selected by the auditing Party and reasonably acceptable to the audited

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Party for the sole purpose of verifying for the auditing Party the accuracy of the financial reports furnished by the audited Party pursuant to this Agreement or of any payments made, or required to be made, by or to the audited Party pursuant to this Agreement. Before beginning its audit, the Auditor shall execute an undertaking acceptable to each Party by which the Auditor agrees to keep confidential all information reviewed during the audit. Such audits may occur no more often than [*] each Calendar Year and not more frequently than [*] with respect to records covering any specific period of time. Each Party shall only be entitled to audit the books and records from the [*] prior to the Calendar Year in which the audit request is made. Such auditor shall not disclose the audited Party's Confidential Information to the auditing Party, except to the extent such disclosure is necessary to verify the accuracy of the financial reports furnished by the audited Party or the amount of payments to or by the audited Party under this Agreement. In the event that the final result of the inspection reveals an undisputed underpayment or overpayment, the underpaid or overpaid amount shall be settled within [*] after the Auditor's report. The auditing Party shall bear the full cost of such audit unless such audit reveals an overpayment to, or an underpayment by, the audited Party that resulted from a discrepancy in the financial report provided by the audited Party for the audited period, which underpayment or overpayment was more than [*] of the amount set forth in such report, in which case the audited Party shall reimburse the auditing Party for the costs for such audit. With respect more specifically to [*], in addition to the right of inspection and audit by an Auditor, [*] upon reasonable notice sent by the paying Party to the requesting Party and during regular business hours.

9.5 Late Payments. In the event that any payment due under this Agreement is not paid when due in accordance with the applicable provisions of this Agreement, the payment shall accrue interest from the date due [*]; provided, however, that in no event shall such rate exceed the maximum legal annual interest rate. The payment of such interest shall not limit the Party entitled to receive payment from exercising any other rights it may have as a consequence of the lateness of any payment.

10. Intellectual Property

10.1 Ownership.

(a) Data. All Data generated in connection with any Development or Commercial activities with respect to any Product conducted solely by or on behalf of Rigel and its Affiliates and licensees (other than Kissei) (the "**Rigel Data**") shall be the sole and exclusive property of Rigel or its Affiliates or licensees, as applicable. All Data generated in connection with any Development or Commercial activities with respect to any Product conducted solely by or on behalf of Kissei or its Affiliates or Sublicensees (the "**Kissei Data**") shall be the sole and exclusive property of Kissei or of its Affiliates or Sublicensees, as applicable. All Data generated in connection with any Joint Development Work or joint Commercial activities with respect to any Product and for which the Parties are sharing Development Costs pursuant to Section 8.2(a) shall be jointly owned by the Parties. For clarity, each Party shall have access and right to use and reference the other Party's Data as and to the extent set forth in this Agreement.

(b) Inventions. Inventorship of any Inventions will be determined in accordance with the standards of inventorship and conception under U.S. patent laws. The Parties will work together to resolve any issues regarding inventorship or ownership of Inventions. Ownership of Inventions will be allocated as follows:

(i) Each Party shall solely own any Inventions made solely by its and its Affiliates' employees, agents, or independent contractors, and the Parties shall jointly own any Inventions that are made jointly by employees, agents, or independent contractors of one Party and its Affiliates together with employees, agents, or independent contractors of the other Party and its Affiliates ("**Joint Inventions**"). All Patents claiming patentable Joint Inventions shall be referred to herein as "**Joint Patents**". Except to the extent either Party is restricted by the licenses granted to the other Party under this Agreement, each Party shall be entitled to practice, license, assign, and otherwise exploit its interest under the Joint Inventions and Joint Patents without the duty of accounting or seeking consent from the other Party.

(ii) All data, Inventions, and Patents claiming such Inventions that relate to the composition, manufacture, or use of any Compound, or any improvement of any such composition, manufacture, or

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use, including in combination with other agents or components, together with all intellectual property rights therein, shall be deemed "**Compound Inventions**". To the extent that any Compound Invention is made by Kissei, whether solely or jointly with Rigel, such Compound Invention shall be included in the license granted to Rigel by Kissei under Section 2.4, without additional consideration. Effective only upon the later of the expiration of the Commercialization Term or the expiration or termination of this Agreement: (A) Kissei hereby assigns to Rigel its rights, title, and interest in and to all Compound Inventions, and (B) solely in the event that the Commercialization Term expires, Rigel hereby grants to Kissei a fully-paid, royalty-free, perpetual, irrevocable, exclusive license under such Compound Inventions assigned by Kissei to Rigel for Kissei to use, sell, offer for sale, import, and otherwise Commercialize the Products in the Field in the Kissei Territory.

10.2 Patent Prosecution and Maintenance.

(a) Rigel Patents.

(i) Subject to this Section 10.2(a), Rigel shall have the sole right and obligation (subject to Section 10.2(a)(ii)) to control the preparation, filing, prosecution, and maintenance (including any interferences, reissue proceedings, reexaminations, inter partes review, patent term extensions, applications for supplementary protection certificates, oppositions, invalidation proceedings and defense of validity or enforceability challenges) of the Rigel Patents (including Joint Patents) worldwide, [*] using counsel of its own choice. Rigel shall keep Kissei informed of material progress with regard to the preparation, filing, prosecution, and maintenance of the Rigel Patents in the Kissei Territory, sufficiently in advance for Kissei to be able to review any material documents, including content, timing, and jurisdiction of the filing of such Rigel Patents in the Kissei Territory, and Rigel shall consult with, and consider in good faith the requests and suggestions of, Kissei with respect to strategies for filing, prosecuting, and defending, if any, the Rigel Patents in the Kissei Territory.

(ii) In the event that Rigel desires to abandon or cease prosecution or maintenance of any Rigel Patent (including Joint Patent) in any country in the Kissei Territory, Rigel shall provide reasonable prior written notice to Kissei of such intention to abandon (which notice shall, to the extent possible, be given no later than [*] prior to the next deadline for any action that must be taken with respect to any such Rigel Patent in the relevant patent office). In such case, upon Kissei's written election provided no later than [*] after such notice from Rigel, Kissei shall have the right to assume prosecution and maintenance of such Rigel Patent at Kissei's expense, and any claim included in such Rigel Patent shall cease to be a Valid Claim under this Agreement. If Kissei does not provide such election within [*] after such notice from Rigel, Rigel may, in its sole discretion, continue prosecution and maintenance of such Rigel Patent or discontinue prosecution and maintenance of such Rigel Patent.

(iii) Rigel shall update **Exhibit B** on [*] basis during the Commercialization Term. Notwithstanding the foregoing, solely with respect to [*] during the Term, Kissei shall have the right to [*] the update [*]. If Rigel [*] but shall also [*] under this Agreement, provided that, for clarity, in the event [*] under this Agreement. If Rigel disagrees with Kissei [*], such disagreement shall be subject to the dispute resolution process set forth in Article 15 (the "**Disputed Claims**").

(b) Kissei Patents.

(i) Subject to this Section 10.2(b), Kissei shall have the first right, but not the obligation, to control the preparation, filing, prosecution and maintenance (including any interferences, reissue proceedings, reexaminations, patent term extensions, applications for supplementary protection certificates, oppositions, invalidation proceedings, and defense of validity or enforceability challenges) of all Kissei Patents (other than Joint Patents) worldwide, [*] by counsel of its own choice in the Kissei Territory and by counsel mutually agreed to by the Parties in the Rigel Territory. Kissei shall keep Rigel informed of the status of filing, prosecution, maintenance, and defense, if any, of the Kissei Patents, and, [*] for Patents claiming or covering a Compound Invention, Kissei shall consult with, and consider in full good faith the requests and suggestions of, Rigel with respect to strategies for filing, prosecuting, and defending such Kissei Patents.

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(ii) In the event that Kissei desires to abandon or cease prosecution or maintenance of any Kissei Patent, Kissei shall provide reasonable prior written notice to Rigel of such intention to abandon (which notice shall, to the extent possible, be given no later than [*] prior to the next deadline for any action that must be taken with respect to any such Kissei Patent in the relevant patent office). In such case, upon Rigel's written election provided no later than [*] after such notice from Kissei, Rigel shall have the right to assume prosecution and maintenance of such Kissei Patent at Rigel's expense and Kissei shall assign to Rigel all of its rights, title, and interest in and to such Kissei Patent. If Rigel does not provide such election within [*] after such notice from Kissei, Kissei may, in its sole discretion, continue prosecution and maintenance of such Kissei Patent or discontinue prosecution and maintenance of such Kissei Patent.

(c) **Cooperation.** Each Party agrees to cooperate fully in the preparation, filing, prosecution, maintenance, and defense, if any, of Patents under Section 10.2 and in the obtaining and maintenance of any patent term extensions and supplementary protection certificates and their equivalents, [*]. Such cooperation includes (i) executing all papers and instruments, or requiring its employees or contractors, to execute such papers and instruments, so as enable the other Party to apply for and to prosecute patent applications in any country as permitted by Section 10.2; and (ii) promptly informing the other Party of any matters coming to such Party's attention that may affect the preparation, filing, prosecution, or maintenance of any such patent application and the obtaining of any patent term extensions or supplementary protection certificates or their equivalents.

10.3 Patent Enforcement.

(a) **Notice.** Each Party shall notify the other within [*] of becoming aware of any alleged or threatened infringement by a Third Party of any of the Rigel Patents (including Joint Patents) in the Kissei Territory, which infringement adversely affects or is reasonably expected to adversely affect any Product, including any declaratory judgment, opposition, or similar action alleging the invalidity, unenforceability, or non-infringement of any of the Rigel Patents (collectively, "**Product Infringement**").

(b) **Enforcement Right.** Rigel shall have the first right to bring and control any legal action in connection with such Product Infringement at its own expense as it reasonably determines appropriate. If Rigel (i) decides not to bring such legal action against a Product Infringement (the decision of which Rigel shall inform Kissei promptly) or (ii) Rigel otherwise fails to bring such legal action against a Product Infringement within [*] of first becoming aware of such Product Infringement, Kissei shall have the right to bring and control any legal action in connection with such Product Infringement at its own responsibility and expense and in consultation with Rigel.

(c) **Collaboration.** Each Party shall provide to the enforcing Party reasonable assistance in such enforcement, at such enforcing Party's request and expense, including to be named in such action if required by Applicable Laws to pursue such action. The enforcing Party shall keep the other Party regularly informed of the status and progress of such enforcement efforts, shall reasonably consider the other Party's comments on any such efforts, including determination of litigation strategy and filing of material papers to the competent court. The non-enforcing Party shall be entitled to separate representation in such matter by counsel of its own choice and at its own expense, but such Party shall at all times cooperate fully with the enforcing Party.

(d) **Expense and Recovery.**

(i) Except as set forth in subsection (ii) below, the enforcing Party shall be solely responsible for any cost and expenses incurred by such Party as a result of such enforcement action. If such Party recovers monetary damages in such enforcement action, such recovery shall be allocated [*].

(ii) Notwithstanding the foregoing, if [*] is the enforcing Party against a Product Infringement in the Kissei Territory, [*] shall have the option to share [*] the cost and expense incurred by [*] in such enforcement action, which option [*] may exercise by providing written notice to [*] within [*] after receiving a notice from [*] that it has determined to bring such action. If [*] exercises such option, then (1) [*] shall reimburse [*] for

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[*] of all costs and expenses incurred by [*] in such enforcement action, within [*] from the date of invoice for such costs and expenses provided by [*]; and (2) if [*] recovers any monetary damages in such enforcement action, such recovery shall be allocated [*].

(e) **Other Infringement.** Except for Product Infringement as set forth above, each Party shall have the exclusive right to enforce its own Patent against any infringement anywhere in the world. For clarity, Rigel shall have the exclusive right to enforce (i) the Rigel Patents against any infringement in the Kissei Territory that is not a Product Infringement, and (ii) the Rigel Patents and Joint Patents against any infringement in the Rigel Territory, in each case at its own expense as it reasonably determines appropriate. The Parties shall discuss global enforcement strategy for the Rigel Patents and Kissei Patents, including the defense of validity and enforceability challenges arising from any enforcement action.

(f) **Infringement of Third Party Rights.** If any Product used or sold by Kissei, its Affiliates, or Sublicensees becomes the subject of a Third Party's claim or assertion of infringement of any intellectual property rights in a jurisdiction within the Kissei Territory, Kissei shall promptly notify Rigel and the Parties shall promptly meet to consider the claim or assertion and the appropriate course of action and may, if appropriate, agree on and enter into a "common interest agreement" wherein the Parties agree to their shared, mutual interest in the outcome of such potential dispute. Absent any agreement to the contrary, and subject to claims for indemnification under Article 12, each Party may defend itself from any such Third Party claim at its own cost and expense, provided, however, that the provisions of Section 10.3 shall govern the right of Kissei to assert a counterclaim of infringement of any Rigel Patents.

10.4 Patents Licensed From Third Parties. Each Party's rights under this Article 10 with respect to the prosecution and enforcement of any Rigel Patent and Kissei Patent shall be subject to the rights (a) retained by any upstream licensor to prosecute and enforce such Patent Right, if such Patent Right is subject to an upstream license agreement; and (b) granted to any Third Party prior to such Patent Right becoming subject to the license grant under this Agreement.

10.5 Trademarks.

(a) **Product Trademarks.** Subject to 10.5(c), each Party shall develop and adopt trademarks, including trade names, trade dresses, branding, and logos, to be used for the Products (the "**Product Marks**") in its own territory [*]; provided, however, that the Parties shall collaborate to have a global, worldwide trademark to be used on the Product where possible and in such cases Rigel shall own such global Product Mark, subject to the license granted to Kissei in Section 10.5(b). For clarity, Kissei may develop a trademark for its Commercialization of the Product in the Kissei Territory, which trademark is the notation of each national language in each country of the Kissei Territory parallel to Rigel's global, worldwide trademark in the Kissei Territory (the "**Kissei Product Mark**"), and Kissei shall own such Kissei Product Mark. Each Party shall own all Product Marks developed by such Party. Each Party shall be responsible for the registration, maintenance, defense, and enforcement of the Product Marks [*] using counsel of its own choice in its respective territory. Kissei shall keep Rigel informed of material progress with regard to the registration, prosecution, maintenance, and defense, if any, of any Product Marks in the Kissei Territory, including content, timing, and jurisdiction of the filing of such Product Marks in the Kissei Territory.

(b) **Trademark License.** Kissei shall use the Product Marks to Commercialize the Product in the Kissei Territory. In addition, unless prohibited by Applicable Laws, Kissei shall use Commercially Reasonable Effort to include Rigel's corporate trademark on the packaging and product information of the Products sold in the Kissei Territory to indicate that the Product is licensed from Rigel. Rigel hereby grants to Kissei a limited, royalty-free license to use Rigel's corporate trademark and Product Marks solely in connection with the Commercialization of the Product in the Kissei Territory under this Agreement. All use of the Product Marks and Rigel's corporate trademark shall comply with Applicable Laws and shall be subject to Rigel's prior review and written approval, provided that such Rigel's approval shall not be unreasonably withheld and delayed. For clarity, Kissei shall also include its (or its Affiliate's or Sublicensee's, as applicable) corporate logo in the Product sold in the Kissei Territory.

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(c) **Global Strategy.** Where Rigel reasonably believes in good faith that a Product Mark developed by Kissei is not appropriate and conflicts with Rigel's global strategy for the Product, the Parties shall use reasonable commercial efforts to agree on an alternative Product Mark.

11. Representations and Warranties

11.1 Mutual Representations and Warranties. Each Party represents and warrants to the other that, as of the Effective Date: (a) it is duly organized and validly existing under the laws of its jurisdiction of incorporation or formation, and has full corporate or other power and authority to enter into this Agreement and to carry out the provisions hereof, (b) it is duly authorized to execute and deliver this Agreement and to perform its obligations hereunder, and the person or persons executing this Agreement on its behalf has been duly authorized to do so by all requisite corporate or partnership action, (c) this Agreement is legally binding upon it, enforceable in accordance with its terms, and does not conflict with any agreement, instrument, or understanding, oral or written, to which it is a Party or by which it may be bound, nor violate any material law or regulation of any court, governmental body, or administrative or other agency having jurisdiction over it, and (d) it has the right to grant the licenses granted by it under this Agreement.

11.2 Covenants.

(a) **Employees, Consultants, and Contractors.** Each Party covenants that it has obtained or will obtain written agreements from each of its employees, consultants, and contractors who perform Development activities pursuant to this Agreement, which agreements will obligate such persons to obligations of confidentiality and non-use and to assign (or, in the case of contractor, if the contracting Party is unable to obtain an assignment from such contractor despite good faith negotiation, to grant a license under) Inventions in a manner consistent with the provisions of this Agreement.

(b) **Debarment.** Each Party represents, warrants, and covenants to the other Party that it is not debarred or disqualified under the U.S. Federal Food, Drug and Cosmetic Act, as may be amended, or comparable laws in any country or jurisdiction other than the U.S., and it does not, and will not during the Term, employ or use the services of any person who is debarred or disqualified, in connection with activities relating to any Product. In the event that either Party becomes aware of the debarment or disqualification or threatened debarment or disqualification of any person providing services to such Party, including the Party itself or its Affiliates or Sublicensees, that directly or indirectly relate to activities contemplated by this Agreement, such Party shall immediately notify the other Party in writing and such Party shall cease employing, contracting with, or retaining any such person to perform any such services.

(c) **Compliance.** Each Party covenants as follows:

(i) In the performance of its obligations under this Agreement, each Party shall comply and shall cause its and its Affiliates' employees and contractors to comply with all Applicable Laws.

(ii) Each Party and its and its Affiliates' employees and contractors shall not, in connection with the performance of their respective obligations under this Agreement, directly or indirectly through Third Parties, pay, promise, or offer to pay, or authorize the payment of, any money or give any promise or offer to give, or authorize the giving of anything of value to a Public Official or Entity or other person for purpose of obtaining or retaining business for or with, or directing business to, any person, including, each Party (and each Party represents and warrants that as of the Effective Date, such Party, and to its knowledge, its and its Affiliates' employees and contractors, have not directly or indirectly promised, offered, or provided any corrupt payment, gratuity, emolument, bribe, kickback, illicit gift, or hospitality or other illegal or unethical benefit to a Public Official or Entity or any other person in connection with the performance of such Party's obligations under this Agreement, and such Party covenants that it and its Affiliates' employees and contractors shall not, directly or indirectly, engage in any of the foregoing).

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(iii) Each Party and its Affiliates, and their respective employees and contractors, in connection with the performance of their respective obligations under this Agreement, shall not violate or cause the violation of the FCPA, Export Control Laws, or any other Applicable Laws, or otherwise cause any reputational harm to the other Party.

(iv) Each Party shall immediately notify the other Party if it has any information or suspicion that there may be a violation of the FCPA, Export Control Laws, or any other Applicable Laws in connection with the performance of this Agreement or the Development, manufacture, or Commercialization of any Product.

(v) Each Party will have the right, upon reasonable prior written notice and during the other Party's regular business hours, to conduct at its own cost and expenses inspections of and to audit the other Party's books and records in the event of a suspected violation or to ensure compliance with the representations, warranties, and covenants of this Section 11.2(c); provided, however, that in the absence of good cause for such inspections and audits, each Party exercise this right no more than annually.

(vi) In the event that one Party has violated or been suspected of violating any of the representations, warranties, or covenants in this Section 11.2(c), such Party will cause its or its Affiliates' personnel or others working under its direction or control to submit to periodic training that it will provide on anti-corruption law compliance or other relevant compliance.

(vii) Each Party will, at the other's request, annually certify to the other Party in writing its compliance, in connection with the performance of its obligations under this Agreement, with the representations, warranties, or covenants in Section 11.2(c), which certification shall be issued by its appropriate executive.

(viii) Each Party shall have the right to suspend or terminate this Agreement in its entirety where there is a credible finding, after a reasonable investigation, that the other Party or its Affiliates or Sublicensees, in connection with the performance of such other Party's obligations under this Agreement, has engaged in chronic or material violations of the FCPA.

11.3 Additional Rigel Representations, Warranties, and Covenants. Rigel represents, warrants, and covenants, as applicable, to Kissei that, as of the Effective Date:

(a) **Exhibit B** lists all Patents Controlled by Rigel in the Kissei Territory as of the Effective Date that claim the composition of matter or method of manufacture of the Compound and have been filed, prosecuted, and maintained in a manner consistent with Rigel's standard practice, and in each applicable jurisdiction in which such Patent has been filed no official final deadlines with respect to prosecution thereof have been missed and all applicable fees have been paid on or before the due date for payment;

(b) All inventors of Inventions claimed in the Patents listed on **Exhibit B** have assigned their entire right, title, and interest in and to such inventions to Rigel and the inventors listed are correct and there are no claims or assertions in writing received by Rigel regarding the inventorship of such Patent alleging that additional or alternative Inventors ought to be listed;

(c) Rigel has the right to grant all rights and licenses it purports to grant to Kissei with respect to the Rigel Technology under this Agreement;

(d) Rigel has not granted any liens or security interests on the Rigel Technology;

(e) to Rigel's knowledge, Rigel has not received any written notice from a Third Party that the Development of any Product conducted by Rigel prior to the Effective Date has infringed any Patents of any Third Party;

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(f) Rigel has not as of the Effective Date, and will not during the Term, grant any right to any Third Party under the Rigel Technology that would conflict with the rights granted to Kissei hereunder;

(g) no claim or action has been brought, or, to Rigel's knowledge, threatened in writing, by any Third Party alleging that the Rigel Patents are invalid or unenforceable, and no Rigel Patent is the subject of any interference, opposition, cancellation, or other protest proceeding;

(h) to Rigel's knowledge, no Third Party is infringing or misappropriating or has materially infringed or misappropriated the Rigel Technology in the Kissei Territory;

(i) Rigel is not aware of any Third Party Patents that would be necessary for Kissei to Develop, make, have made, use, sell, offer for sale, or import the Compound or Product in the Field in the Kissei Territory;

(j) to Rigel's knowledge, it has disclosed to Kissei the clinical and non-clinical data in Rigel's Control that is material to the evaluation of the safety, efficacy, and manufacturing process of the Product; and

(k) to Rigel's knowledge, there are no issues or information, which to Rigel's knowledge and reasonable opinion, are reasonably likely to have a material impact on the Development of the Product that have not been fully disclosed to Kissei in the course of Kissei's due diligence.

11.4 Additional Kissei Representations, Warranties, and Covenants

(a) In connection with the performance of its obligations under this Agreement, Kissei shall comply and shall cause its and its Affiliates' employees and contractors to comply with Kissei's own anti-corruption and anti-bribery policy, a copy of which shall be provided to Rigel upon Rigel's written request.

(b) Kissei represents, warrants, and covenants to Rigel that, as of the Effective Date, Kissei has not granted, and will not grant during the Term in the Rigel Territory or the Kissei Territory, any right to any Third Party under the Kissei Technology that would conflict with the rights granted to Rigel hereunder. Kissei further represents, warrants, and covenants to Rigel that, as of the Effective Date, Kissei does not own or control any Kissei Patents.

11.5 Disclaimer. Except as expressly set forth in this Agreement, THE TECHNOLOGY AND INTELLECTUAL PROPERTY RIGHTS PROVIDED BY EACH PARTY HEREUNDER ARE PROVIDED "AS IS" AND EACH PARTY EXPRESSLY DISCLAIMS ANY AND ALL WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF DESIGN, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NONINFRINGEMENT OF THE INTELLECTUAL PROPERTY RIGHTS OF THIRD PARTIES, OR ARISING FROM A COURSE OF DEALING, USAGE OR TRADE PRACTICES, IN ALL CASES WITH RESPECT THERETO. Without limiting the foregoing, (a) neither Party represents or warrants that any data obtained from conducting Clinical Trials in one country or jurisdiction will comply with the laws and regulations of any other country or jurisdiction, and (b) neither Party represents or warrants the success of any study or test conducted pursuant to this Agreement or the safety or usefulness for any purpose of the technology it provides hereunder.

12. Indemnification

12.1 Indemnification by Rigel. Rigel hereby agrees to defend, indemnify, and hold harmless Kissei and its Affiliates and their respective directors, officers, employees, and agents (each, a "**Kissei Indemnitee**") from and against any and all liabilities, expenses, and losses including any product liability, personal injury, property damage, including reasonable legal expenses and attorneys' fees (collectively, "**Losses**"), to which any Kissei Indemnitee may become subject as a result of any claim, demand, action, or other proceeding by any Third Party to the extent such Losses arise out of or result from: (a) the Development, use, manufacture, handling, storage, Commercialization, or other disposition of any Compound or Product by Rigel or its Affiliates or licensees or the contractors of any of them

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(excluding any activities by or on behalf of Kissei or its Affiliates or its Sublicensees), (b) the negligence or willful misconduct of any Rigel Indemnitee, or (c) the breach by Rigel of any warranty, representation, covenant, or agreement made by Rigel in this Agreement; except, in each case (a)-(c), to the extent such Losses arise out of any activities set forth in Section 12.2(a), (b), or (c) for which Kissei is obligated to indemnify any Rigel Indemnitee(s) under Section 12.2.

12.2 Indemnification by Kissei. Kissei hereby agrees to defend, indemnify, and hold harmless Rigel, its Affiliates, and licensees and their respective directors, officers, employees, and agents (each, a “**Rigel Indemnitee**”) from and against any and all Losses to which any Rigel Indemnitee may become subject as a result of any claim, demand, action, or other proceeding by any Third Party to the extent such Losses arise out of: (a) the Development, use, handling, storage, Commercialization, or other disposition of any Compound or Product by Kissei or its Affiliates or Sublicensees or the contractor of any of them, (b) the negligence or willful misconduct of any Kissei Indemnitee, or (c) the breach by Kissei of any warranty, representation, covenant, or agreement made by Kissei in this Agreement; except, in each case (a)-(c), to the extent such Losses arise out of any activities set forth in Section 12.1(a), (b), or (c) for which Rigel is obligated to indemnify any Kissei Indemnitee(s) under Section 12.1.

12.3 Procedure. A party that intends to claim indemnification under this Article 12 (the “**Indemnitee**”) shall promptly notify the indemnifying Party (the “**Indemnitor**”) in writing of any Third Party claim, demand, action, or other proceeding (each, a “**Claim**”) in respect of which the Indemnitee intends to claim such indemnification, and the Indemnitor shall have sole control of the defense or settlement thereof. The Indemnitee may participate at its expense in the Indemnitor’s defense of and settlement negotiations for any Claim with counsel of the Indemnitee’s own choice. The indemnity arrangement in this Article 12 shall not apply to amounts paid in settlement of any action with respect to a Claim if such settlement is effected without the consent of the Indemnitor, which consent shall not be unreasonably withheld or delayed. The failure to deliver written notice to the Indemnitor within a reasonable time after the commencement of any action with respect to a Third Party Claim shall only relieve the Indemnitor of its indemnification obligations under this Article 12 if and to the extent the Indemnitor is actually prejudiced thereby. The Indemnitee shall cooperate fully with the Indemnitor and its legal representatives in the investigation of any action with respect to a Claim covered by this indemnification.

12.4 Insurance. Each Party, at its own expense, for a period until [*] after expiration or termination of this Agreement, shall maintain commercial general liability insurance, including public and product liability and other appropriate insurance (e.g., contractual liability, bodily injury, property damage and personal injury coverage) (or self-insure) in an amount consistent with sound business practice and reasonable in light of its obligations under this Agreement during the Term, at a minimum equivalent to [*] for any one claim or in the aggregate. Each Party shall provide a certificate of insurance (or evidence of self-insurance) evidencing such coverage to the other Party upon request. It is understood that such insurance shall not be construed to create any limit of either Party’s obligations or liabilities with respect to its indemnification obligations hereunder. In the event of use by either Party of subcontractors, sublicensees, or any Third Party in the performance of such Party’s obligations under the Agreement, such Party shall ensure that its subcontractor, sublicensee, or Third Party has a proper and adequate general liability insurance to cover its risks with respect to the other Party for damages mentioned above.

12.5 Limitation of Liability. NEITHER PARTY SHALL BE ENTITLED TO RECOVER FROM THE OTHER PARTY ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR PUNITIVE DAMAGES, INCLUDING LOST PROFITS, IN CONNECTION WITH THIS AGREEMENT OR ANY LICENSE GRANTED HEREUNDER, REGARDLESS OF ANY NOTICE OF THE POSSIBILITY OF SUCH DAMAGES; PROVIDED, HOWEVER, THAT THIS SECTION 12.5 SHALL NOT BE CONSTRUED TO LIMIT EITHER PARTY’S INDEMNIFICATION OBLIGATIONS UNDER THIS ARTICLE 12 OR DAMAGES AVAILABLE AS A RESULT OF A BREACH OF A PARTY’S EXCLUSIVITY OBLIGATIONS UNDER SECTION 2.9 OR CONFIDENTIALITY OBLIGATIONS UNDER ARTICLE 13.

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13. Confidentiality

13.1 Confidential Information. Except to the extent expressly authorized by this Agreement or otherwise agreed in writing by the Parties, the Parties agree that, during the Term and for [*] thereafter, the receiving Party shall keep confidential and shall not publish or otherwise disclose and shall not use for any purpose other than as expressly provided for in this Agreement any Confidential Information of the other Party, and both Parties shall keep confidential and, subject to the remainder of this Article 13, shall not publish or otherwise disclose the terms of this Agreement. Each Party may use the other Party's Confidential Information only to the extent required to accomplish the purposes of this Agreement, including exercising its rights or performing its obligations under this Agreement. Each Party will use at least the same standard of care as it uses to protect proprietary or confidential information of its own (but no less than reasonable care) to ensure that its employees, agents, consultants, contractors, and other representatives do not disclose or make any unauthorized use of the Confidential Information of the other Party. Each Party will promptly notify the other upon discovery of any unauthorized use or disclosure of the Confidential Information of the other Party.

13.2 Exceptions. The obligations of confidentiality and restriction on use under Section 13.1 will not apply to any information that the receiving Party can prove by competent written evidence: (a) is at the time of disclosure, or thereafter becomes, through no act or failure to act on the part of the receiving Party, generally known or available to the public; (b) is known by the receiving Party at the time of receiving such information, other than by previous disclosure of the disclosing Party, or its Affiliates, employees, agents, consultants, or contractors; (c) is disclosed to the receiving Party without restriction by a Third Party who has no obligation of confidentiality or limitations on use with respect thereto; or (d) is independently discovered or developed by the receiving Party without the use of or reference to the Confidential Information belonging to the disclosing Party.

13.3 Authorized Disclosure. Each Party may disclose Confidential Information belonging to the other Party as expressly permitted by this Agreement or if and to the extent such disclosure is reasonably necessary in the following instances:

- (a) filing, prosecuting, or maintaining Patents as permitted by this Agreement;
- (b) Regulatory Filings for Products that such Party has a license or right to Develop or Commercialize hereunder in a given country or jurisdiction;
- (c) prosecuting or defending litigation as permitted by this Agreement;
- (d) complying with applicable court orders or governmental regulations, including regulations promulgated by securities exchanges; and
- (e) disclosure to its and its Affiliates' employees, consultants, contractors, agents, licensees and sublicensees, in each case on a need-to-know basis, in connection with the Development, manufacture, or Commercialization of the Compound and Products in accordance with the terms of this Agreement, in each case under written obligations of confidentiality and non-use at least as stringent as those herein; and
- (f) disclosure to actual and bona fide potential investors, acquirers, licensees, sublicensees and other financial or commercial partners solely for the purpose of evaluating or carrying out an actual or potential investment, acquisition, or collaboration, in each case under written obligations of confidentiality and non-use at least as stringent as those herein, provided that the disclosing Party redacts the financial terms and other provisions of this Agreement that are not reasonably required to be disclosed in connection with such potential investment, acquisition, or collaboration, which redaction shall be prepared in consultation with the other Party.

Notwithstanding the foregoing, in the event a Party is required to make a disclosure of the other Party's Confidential Information pursuant to Section 13.3(c) or 13.3(d), it will, except where impracticable, give reasonable

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advance notice to the other Party of such disclosure and use the same diligent efforts to secure confidential treatment of such Confidential Information as such Party would use to protect its own confidential information, but in no event less than reasonable efforts. In any event, the Parties agree to take all reasonable action to avoid disclosure of Confidential Information hereunder. Any information disclosed pursuant to Section 13.3(c) or 13.3(d) shall remain Confidential Information and subject to the restrictions set forth in this Agreement, including the foregoing provisions of this Article 13.

13.4 Publications.

(a) Each Party shall have the right to review and comment on any material proposed for disclosure or publication by the other Party (the “**Disclosing Party**”) regarding results of and other information regarding the Disclosing Party’s Development activities during the Term with respect to the Compound and Product, whether by oral presentation, manuscript, or abstract. Before any such material is submitted for publication, or presentation of any such material is made, the Disclosing Party shall deliver a complete copy of the material proposed for disclosure to the other Party (the “**Reviewing Party**”) at least [*] prior to submitting the material to a publisher or initiating any other disclosure, or as close to these time frames as reasonably possible. The Reviewing Party shall review any such material and give its comments to the Disclosing Party within [*] of the receipt of such material. With respect to oral presentation materials and abstracts, the Reviewing Party shall make reasonable efforts to expedite review of such materials and abstracts, and shall return such items as soon as practicable to the Disclosing Party with comments, if any. Subject to Section 13.4(b), following the expiration of the applicable time period for review, the Disclosing Party shall be free to submit such proposed manuscript for publication or presentation materials for public disclosure, and does not need to follow this process for subsequent publications or presentations of the same data.

(b) If the Reviewing Party notifies the Disclosing Party within the applicable time period set forth in subsection (a) above that such publication or presentation, in either Party reasonable judgment:

(i) contains an invention for which the Reviewing Party desires to obtain patent protection, the Disclosing Party shall delay such publication or presentation for a period of up to [*] (or such other time period agreed by the Parties in writing) to permit the preparation and filing of a patent application for such invention, or

(ii) contains any Confidential Information of the Reviewing Party, or could be expected to have an adverse effect on the commercial value of any Confidential Information disclosed by the Reviewing Party to the Disclosing Party, the Parties shall attempt to agree on revisions to the applicable disclosure so as to preserve both the commercial value of such Confidential Information and the scientific merit of such disclosure, provided that if and to the extent the Parties are unable to agree, the Disclosing Party shall delete such Confidential Information from the proposed publication or presentation.

13.5 Publicity; Public Disclosures. It is understood that each Party will issue a press release announcing the signature of this Agreement in the forms agreed by the Parties, and subsequent press releases relating to this Agreement or activities hereunder. The Parties agree to consult with each other reasonably and in good faith with respect to the text and timing of any subsequent press releases prior to the issuance thereof, to the extent practicable, provided that a Party may not unreasonably withhold, condition, or delay its input to such releases by more than [*], and that either Party may issue such press releases or make such disclosures to the SEC or other applicable agency as it determines, based on advice of counsel, is reasonably necessary to comply with Applicable Laws or for appropriate market disclosure. Each Party shall provide the other Party with advance notice of legally required disclosures to the extent practicable. The Parties will consult with each other on the provisions of this Agreement to be redacted in any filings made by a Party with the SEC or other applicable agency or as otherwise required by Applicable Laws; provided that each Party shall have the right to make any such filing as it reasonably determines necessary under Applicable Laws. In addition, following the initial joint press release announcing this Agreement, either Party shall be free to disclose, without the other Party’s prior written consent, the existence of this Agreement, the identity of the other Party and those terms of the Agreement which have already been publicly disclosed in accordance with this Section 13.5.

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13.6 Prior Confidentiality Agreement. As of the Effective Date, the terms of this Article 13 shall supersede any prior non-disclosure, secrecy, or confidentiality agreement between the Parties (or their Affiliates) relating to the subject of this Agreement, including the Confidentiality Agreement. Any information disclosed pursuant to any such prior agreement shall be deemed Confidential Information under this Agreement.

13.7 Equitable Relief. Given the nature of the Confidential Information and the competitive damage that a Party would suffer upon unauthorized disclosure, use, or transfer of its Confidential Information to any Third Party, the Parties agree that monetary damages may not be a sufficient remedy for any breach of this Article 13. In addition to all other remedies, a Party shall be entitled to seek specific performance and injunctive and other equitable relief as a remedy for any breach or threatened breach of this Article 13.

14. Term and Termination

14.1 Term. This Agreement shall commence on the Effective Date and shall continue until terminated as provided in this Article 14 (the “**Term**”). Notwithstanding anything herein, on a Product-by-Product and country-by-country basis, upon the expiration of the Commercialization Term, whether or not this Agreement is later terminated pursuant to Section 14.3(c), the licenses granted to Kissei in Section 2.1, Section 10.1(b)(ii) (with respect to Compound Inventions assigned to Rigel by Kissei), and the Trademark license granted to Kissei under Section 10.5(b) shall become perpetual (even subsequent to the termination pursuant to Section 14.3(c)), exclusive and fully paid-up with respect to such Product in such country, subject only to Kissei’s payment obligations under Section 8.5(b) and Section 8.5(e) during the Extended Commercialization Term.

14.2 Termination for Cause.

(a) Material Breach. Each Party shall have the right to terminate this Agreement immediately in its entirety upon written notice to the other Party if such other Party materially breaches this Agreement and has not cured such breach to the reasonable satisfaction of the other Party within [*] after notice of such breach from the non-breaching Party.

(b) Bankruptcy. Each Party shall have the right to terminate this Agreement immediately in its entirety upon written notice to the other Party if such other Party makes a general assignment for the benefit of creditors, files an insolvency petition in bankruptcy, petitions for or acquiesces in the appointment of any receiver, trustee, or similar officer to liquidate or conserve its business or any substantial part of its assets, commences under the laws of any jurisdiction any proceeding involving its insolvency, bankruptcy, reorganization, adjustment of debt, dissolution, liquidation, or any other similar proceeding for the release of financially distressed debtors, or becomes a party to any proceeding or action of the type described above and such proceeding is not dismissed within [*] after the commencement thereof.

(c) Patent Challenge. Rigel shall have the right to terminate this Agreement immediately in its entirety upon written notice to Kissei if Kissei or any of its Affiliates or Sublicensees directly, or indirectly through any Third Party, commences any interference or opposition proceeding with respect to, challenges the validity or enforceability of, or opposes any extension of or the grant of a supplementary protection certificate with respect to, any Rigel Patent.

(d) Safety Reasons. Either Party shall have the right to terminate or suspend its Development and/or Commercialization of the Product in its Territory upon written notice to the other Party if the terminating Party reasonably determines, based upon additional information that becomes available or an analysis of the existing information at any time, that the medical risk/benefit of the Product is so unfavorable that it would be incompatible with the welfare of patients to Develop or Commercialize or to continue to Develop or Commercialize such Product. Prior to any such termination, the terminating Party shall comply with such internal review and management approval processes as it would normally follow in connection with the termination of the development and commercialization of its own products for safety reasons. The terminating Party shall document the decisions of such committees or

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members of management and the basis therefor and shall make such minutes and documentation available to the other Party promptly upon written request. In the event that Rigel terminates its Development or Commercialization of the Product according to this Section 14.2(d), and Kissei wishes to continue to Develop and/or Commercialize the Product in the Field in the Kissei Territory, Kissei shall notify Rigel in writing and any such continuation by Kissei shall occur only subject to an amendment to this Agreement to be negotiated between the Parties.

14.3 Termination without Cause.

(a) Prior to [*]. Prior to [*] the Product in the Kissei Territory, Kissei shall have the right to terminate this Agreement in its entirety without cause upon [*] prior written notice to Rigel.

(b) After [*]. Following [*] the Product in the Kissei Territory, Kissei shall have the right to terminate this Agreement in its entirety without cause upon [*] prior written notice to Rigel.

(c) After the Commercialization Term. Either Party shall have the right to terminate this Agreement, on a Product-by-Product and country-by-country basis, without cause upon [*] prior written notice to the other Party so long as such termination becomes effective on or after the end of the Commercialization Term for such Product in such country.

14.4 Effects of Termination. If Kissei, its Affiliates and/or Sublicensees continues to Commercialize the Product after the termination of this Agreement pursuant to Section 14.3(c), the licenses granted to Kissei in Section 2.1, Section 10.1(b)(ii) (with respect to Compound Inventions assigned to Rigel by Kissei), and the Trademark license granted to Kissei under Section 10.5(b) shall become perpetual, exclusive and fully paid-up with respect to such Product in such country for Kissei to continue to Commercialize the Product following such termination, subject only to Kissei's payment obligations under Section 8.5(b) and Section 8.5(e) during the Extended Commercialization Term. Upon the termination of this Agreement for any other reason, the following subsections (a)-(h) will apply. For clarity, during the pendency of any termination notice period, all of the terms and conditions of this Agreement shall remain in effect and the Parties shall continue to perform all of their respective obligations hereunder.

(a) Licenses. All licenses granted by Rigel to Kissei will automatically terminate, including all sublicenses granted by Kissei to any Sublicensee. Except in the event of termination by Kissei under Section 14.2(a) for material breach by Rigel, the licenses granted by Kissei to Rigel shall survive in perpetual and fully-paid-up basis following such termination and shall automatically become worldwide.

(b) Regulatory Materials; Data. Within [*] after the effective date of termination, Kissei shall transfer and assign to Rigel, [*], all Regulatory Filings and Regulatory Approvals for the Products, Data from all preclinical, non-clinical, and clinical studies of the Product conducted by or on behalf of Kissei, its Affiliates, or Sublicensees, and all pharmacovigilance data (including all adverse event data) on the Products. In addition, at Rigel's reasonable request, Kissei shall provide Rigel with Commercially Reasonable assistance with any inquiries and correspondence with Regulatory Authorities regarding the Product in the Kissei Territory, such assistance shall be limited to a period of [*] after such termination.

(c) Development Wind-Down. Kissei shall either, as directed by Rigel, (i) wind-down any ongoing Development activities (including any Clinical Trials) of Kissei or its Affiliates and Sublicensees with respect to any Product in the Kissei Territory in an orderly fashion or (ii) promptly transfer such Development activities to Rigel or its designee, [*], in each case in compliance with all Applicable Laws.

(d) Cost of Ongoing Trials. If there is any ongoing Clinical Trial of the Product under the Development Plan for which the Parties are sharing costs, then Kissei shall continue to share the cost of such Clinical Trial until [*]. The remaining costs from [*] until completion of such Clinical Trial (or early termination of such Clinical Trial by Rigel) shall be borne entirely by Rigel following [*].

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(e) Commercial Wind-Down. The Parties agree that Kissei shall (i) continue certain ongoing Commercial activities of Kissei and its Affiliates and Sublicensees with respect to any Product in the Kissei Territory for a period of up to [*] after the effective date of termination and (ii) handoff such Commercial activities to Rigel or its designee, on a timetable to be set by the Parties, not to exceed [*] after the effective date of termination, and in compliance with all Applicable Laws. During such commercial wind-down period, Kissei shall continue to book sales and pay the Transfer Price to Rigel in accordance with Section 8.5. Except as necessary to conduct the foregoing activities as directed by Rigel, Kissei shall immediately discontinue its (and shall ensure that its Affiliates and Sublicensees immediately discontinue their) promotion, marketing, offering for sale, and servicing of the Product and its use of all Product Marks. In addition, Kissei shall immediately deliver to Rigel ([*]) all samples, demonstration equipment, sales materials, catalogs, and literature of Rigel in Kissei's possession or control.

(f) Transition Assistance. Kissei shall use Commercially Reasonable Efforts to seek an orderly transition of the Development and Commercialization of the Compound and Products to Rigel or its designee. Except in the event of termination by Kissei under Section 14.2(a), Kissei shall, [*], provide reasonable consultation and assistance for a period of no more than [*] after the effective date of termination for the purpose of transferring or transitioning to Rigel all Kissei Know-How not already in Rigel's possession and, at Rigel's request, all then-existing commercial arrangements relating to the Products that Kissei is able, using Commercially Reasonable Efforts, to transfer or transition to Rigel or its designee, in each case, to the extent reasonably necessary for Rigel to continue the Development or Commercialization of the Compound and Products in the Kissei Territory. If any such contract between Kissei and a Third Party is not assignable to Rigel or its designee (whether by such contract's terms or because such contract does not relate specifically to the Products) but is otherwise reasonably necessary for Rigel to continue the Development or Commercialization of the Compound and Products in the Kissei Territory, or if Kissei is performing such work for the Compound and Product itself (and thus there is no contract to assign), then Kissei shall reasonably cooperate with Rigel to negotiate for the continuation of such services for Rigel from such entity, or Kissei shall use Commercially Reasonable Efforts to continue to perform such work for Rigel, as applicable, for a reasonable period (not to exceed [*]) after the effective date of termination at Rigel's cost until Rigel establishes an alternate, validated source of such services.

(g) Remaining Inventories. Other than termination for safety reasons pursuant to Section 14.2(d), Kissei shall have the right to sell out the inventory of the Products held by Kissei as of the notice date of termination until the effective date of termination, subject to Kissei's payment obligations to Rigel under Article 8 with respect to such sales.

(h) Trademarks. The license granted to Kissei under Section 10.5(b) shall terminate and Kissei shall cease immediately the use of all Rigel Trademarks. Unless this Agreement is terminated pursuant to Section 14.3(c), Kissei shall transfer and assign to Rigel, [*], all Kissei Product Marks.

(i) Non-Compete. Following any termination of this Agreement by Rigel pursuant to Section 14.2, neither Kissei nor any of its Affiliates shall (directly or indirectly, either with or without a bona fide collaborator or any other Third Party) commercialize any Competing Product for a period of [*] following the effective date of such termination.

14.5 Confidential Information. Upon expiration or termination of this Agreement in its entirety, except to the extent that a Party obtains or retains the right to use the other Party's Confidential Information, each Party shall promptly return to the other Party, or delete or destroy, all relevant records and materials in such Party's possession or control containing Confidential Information of the other Party; provided that such Party may keep one copy of such materials for archival purposes only subject to continuing confidentiality obligations. All Kissei Data and Regulatory Filings assigned to Rigel upon termination of this Agreement will be deemed Rigel's Confidential Information and no longer Kissei's Confidential Information.

14.6 Survival. Expiration or termination of this Agreement shall not relieve the Parties of any obligation or right accruing prior to such expiration or termination. Except as set forth below or elsewhere in this Agreement, the obligations and rights of the Parties under the following provisions of this Agreement shall survive expiration or

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termination of this Agreement: Articles 1, 9 (with respect to payment obligations accrued prior to such expiration or termination and/or during the Extended Commercialization Term), 12, 13, 15 and 16, and Sections 2.6, 4.15 (the 3rd, 4th and 5th sentences only), 8.5(b) and 8.5(e) (each solely during the Extended Commercialization Term), 10.1, 11.5, 14.4, 14.5 and 14.6.

14.7 Exercise of Right to Terminate. All rights and obligations of a Party accrued prior to the effective date of a termination (including the rights to receive reimbursement for costs incurred prior to the effective date of such termination and payments accrued or due prior to the effective date of such termination) shall survive such termination.

14.8 Rights in Bankruptcy. All rights and licenses granted under or pursuant to this Agreement by one Party to the other Party are, and will otherwise be deemed to be, for purposes of Section 365(n) of the U.S. Bankruptcy Code or comparable provision of applicable bankruptcy or insolvency laws, licenses of right to “intellectual property” as defined under Section 101 of the U.S. Bankruptcy Code or comparable provision of applicable bankruptcy or insolvency laws. The Parties agree that a Party that is a licensee of such rights under this Agreement will retain and may fully exercise all of its rights and elections under the U.S. Bankruptcy Code or comparable provision of applicable bankruptcy or insolvency laws. The Parties further agree that, in the event of the commencement of a bankruptcy proceeding by or against a Party to this Agreement under the U.S. Bankruptcy Code or comparable provision of applicable bankruptcy or insolvency laws, the other Party will be entitled to a complete duplicate of (or complete access to, as appropriate) any such intellectual property and all embodiments of such intellectual property, and same, if not already in its possession, will be promptly delivered to it (a) upon any such commencement of a bankruptcy or insolvency proceeding upon its written request therefor, unless the bankrupt Party elects to continue to perform all of its obligations under this Agreement, or (b) if not delivered under (a) above, following the rejection of this Agreement by or on behalf of the bankrupt Party upon written request therefor by the other Party.

15. Dispute Resolution

15.1 Objective. The Parties recognize that disputes as to matters arising under or relating to this Agreement or either Party’s rights and obligations hereunder may arise from time to time. It is the objective of the Parties to establish procedures to facilitate the resolution of such disputes in an expedient manner by mutual cooperation and without resort to litigation. To accomplish this objective, the Parties agree to follow the procedures set forth in this Article 15 to resolve any such dispute if and when it arises.

15.2 Executive Mediation. The Parties shall attempt to settle any dispute, controversy, or claim that arises out of, or relates to, any provision of the Agreement (“**Disputed Matter**”) by first referring the Disputed Matter to the Executive Officers (or their respective designees having the authority to settle such Disputed Matter). Either Party may initiate such informal dispute resolution by sending written notice of the Disputed Matter to the other Party, and, within [*] after such notice, the Executive Officers (or their respective designees) shall meet for attempted resolution by good faith negotiations. If the Executive Officers (or their respective designees) are unable to resolve such dispute within [*] of their first meeting for such negotiations, either Party may seek to have such dispute resolved in accordance with Section 15.3 below.

15.3 Dispute Resolution.

(a) If the Parties are unable to resolve a Disputed Matter using the process described in Section 15.2, then a Party seeking further resolution of the Disputed Matter will submit the Disputed Matter to resolution by final and binding arbitration. Whenever a Party decides to institute arbitration proceedings, it will give written notice to that effect to the other Party. Arbitration will be held in [*] and administered by the International Chamber of Commerce pursuant to its ICC International Arbitration Rules then in effect (the “**Rules**”), except as otherwise provided herein and applying the substantive law specified in Section 16.1. The arbitration will be conducted by a panel of three (3) arbitrators appointed in accordance with the Rules; provided that each Party will, within [*] after the institution of the arbitration proceedings, appoint an arbitrator, and such arbitrators will together, within [*], select a third (3rd) arbitrator as the chairperson of the arbitration panel. Each arbitrator must have significant business or

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legal experience in the pharmaceutical business. If the two (2) initial arbitrators are unable to select a third (3rd) arbitrator within such [*] period, the third (3rd) arbitrator will be appointed in accordance with Rules. After conducting any hearing and taking any evidence deemed appropriate for consideration, the arbitrators will be requested to render their opinion within [*] of the final arbitration hearing. No panel of arbitrators will have the power to award damages excluded pursuant to Section 12.5 under this Agreement and any arbitral award that purports to award such damages is expressly prohibited and void *ab initio*. Decisions of the panel of arbitrators that conform to the terms of this Section 15.3 will be final and binding on the Parties and judgment on the award so rendered may be entered in any court of competent jurisdiction. The losing Party, as determined by the panel of arbitrators, will pay all of the ICC administrative costs and fees of the arbitration and the fees and costs of the arbitrators, and the arbitrators will be directed to provide for payment or reimbursement of such fees and costs by the losing Party. If the panel of arbitrators determines that there is no losing Party, the Parties will each bear one-half of those costs and fees and the arbitrators' award will so provide. Notwithstanding the foregoing, each Party shall bear its own attorneys' fees, expert or witness fees, and any other fees and costs, and no such fees or costs will be shifted to the other Party.

(b) Notwithstanding the terms of and procedures set forth in Section 15.2 or 15.3(a), any applications, motions, or orders to show cause seeking temporary restraining orders, preliminary injunctions, or other similar preliminary or temporary legal or equitable relief ("**Injunctive Relief**") concerning a Disputed Matter (including Disputed Matters arising out of a potential or actual breach of the confidentiality and non-use provisions in Article 13) may immediately be brought in the first instance and without invocation or exhaustion of the procedures set forth in subsections (a) and (b) for hearing and resolution in and by any court of competent jurisdiction. Alternatively, a party seeking Injunctive Relief may immediately institute arbitral proceedings without invocation or exhaustion of the procedures set forth in subsections (a) and (b), and any such Injunctive Relief proceedings will be administered by the ICC pursuant to its ICC emergency arbitration procedures then in effect and applying the substantive law specified in Section 16.1. In either event, once the Injunctive Relief proceedings have been conducted and a decision is rendered thereon by the court or arbitral forum, the Parties shall, if the Disputed Matter is not finally resolved by the Injunctive Relief, proceed to resolve the Disputed Matter in accordance with the terms of Section 15.2 and 15.3(a).

(c) Notwithstanding the foregoing, this Section 15.3 shall not apply to any dispute, controversy, or claim that concerns (i) the validity, enforceability, or infringement of a patent, trademark, or copyright; or (ii) any antitrust, anti-monopoly, or competition law or regulation, whether or not statutory. Disputes regarding the foregoing shall be brought in a court of competent jurisdiction in which such patent or trademark or copyright was granted or arose, or in which such law or regulation applies, in each case as applicable.

16. General Provisions

16.1 Governing Law. This Agreement, and all questions regarding the existence, validity, interpretation, breach, or performance of this Agreement, shall be governed by, and construed and enforced in accordance with, the laws of the State of New York, United States, without reference to its conflicts of law principles.

16.2 Entire Agreement; Modification. This Agreement, including the exhibits, is both a final expression of the Parties' agreement and a complete and exclusive statement with respect to all of its terms. This Agreement supersedes all prior and contemporaneous agreements and communications, whether oral, written, or otherwise, concerning any and all matters contained herein. This Agreement may only be modified or supplemented in a writing expressly stated for such purpose and signed by the Parties to this Agreement.

16.3 Relationship Between the Parties. The Parties' relationship, as established by this Agreement, is solely that of independent contractors. This Agreement does not create any partnership, joint venture, or similar business relationship between the Parties. Neither Party is a legal representative of the other Party, and neither Party can assume or create any obligation, representation, warranty, or guarantee, express or implied, on behalf of the other Party for any purpose whatsoever.

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16.4 Non-Waiver. The failure of a Party to insist upon strict performance of any provision of this Agreement or to exercise any right arising out of this Agreement shall neither impair that provision or right nor constitute a waiver of that provision or right, in whole or in part, in that instance or in any other instance. Any waiver by a Party of a particular provision or right shall be in writing, shall be as to a particular matter and, if applicable, for a particular period of time and shall be signed by such Party.

16.5 Assignment. Except as expressly provided hereunder, neither this Agreement nor any rights or obligations hereunder may be assigned or otherwise transferred by either Party without the prior written consent of the other Party (which consent shall not be unreasonably withheld); provided, however, that either Party may assign or otherwise transfer this Agreement and its rights and obligations hereunder without the other Party's consent:

(a) in connection with the transfer or sale of all or substantially all of the business or assets of such Party relating to the Compound and Products to a Third Party, whether by merger, consolidation, divestiture, restructure, sale of stock, sale of assets, or otherwise, provided that in the event of any such transaction (whether this Agreement is actually assigned or is assumed by the acquiring Party by operation of law (e.g., in the context of a reverse triangular merger)), the intellectual property rights of the acquiring Party to such transaction (if other than one of the Parties to this Agreement) shall not be included in the technology licensed hereunder; or

(b) to an Affiliate, provided that the assigning Party shall remain liable and responsible to the non-assigning Party hereto for the performance and observance of all such duties and obligations by such Affiliate, and provided further that if the entity to which this Agreement is assigned ceases to be an Affiliate of the assigning Party, the Agreement shall be automatically assigned back to the assigning Party or its successor.

The rights and obligations of the Parties under this Agreement shall be binding upon and inure to the benefit of the successors and permitted assigns of the Parties specified above, and the name of a Party appearing herein will be deemed to include the name of such Party's successors and permitted assigns to the extent necessary to carry out the intent of this Section 16.5. Any assignment not in accordance with this Section 16.5 shall be null and void. For clarity, neither Party's rights and obligations under this Agreement shall be affected by the other Party's assignment of this Agreement.

16.6 Severability. If, for any reason, any part of this Agreement is adjudicated invalid, unenforceable, or illegal by a court of competent jurisdiction, such adjudication shall not, to the extent feasible, affect or impair, in whole or in part, the validity, enforceability, or legality of any remaining portions of this Agreement. All remaining portions shall remain in full force and effect as if the original Agreement had been executed without the invalidated, unenforceable, or illegal part.

16.7 Notices. Any notice to be given under this Agreement must be in writing and delivered either in person, by (a) air mail (postage prepaid) requiring return receipt, (b) overnight courier, or (c) facsimile confirmed thereafter by any of the foregoing, to the Party to be notified at its address(es) given below, or at any address such Party may designate by prior written notice to the other in accordance with this Section 16.7. Notice shall be deemed sufficiently given for all purposes upon the earliest of: (i) the date of actual receipt, (ii) if air mailed, [*] after the date of postmark, (iii) if delivered by overnight courier, the next day the overnight courier regularly makes deliveries, or (iv) if sent by facsimile, the date of confirmation of receipt if during the recipient's normal business hours, otherwise the next business day.

If to Kissei, notices must be addressed to:

Kissei Pharmaceutical Co., Ltd
1-8-9 Nihonbashi-Muromachi,
Chuo-ku, Tokyo 103-0022 Japan
Attention: [*]
Facsimile: [*]

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□ with a copy to □
Kissei Pharmaceutical Co., Ltd.
19-48 Yoshino, Matsumoto-City
Nagano-prefecture, 399-8710 Japan
Attention: [*]
Facsimile: [*]

If to Rigel, notices must be addressed to:

Rigel Pharmaceuticals, Inc.
1180 Veterans Blvd.
South San Francisco, CA 94080
USA
Attention: [*]
Facsimile: [*]

16.8 Force Majeure. Each Party shall be excused from liability for the failure or delay in performance of any obligation under this Agreement (other than failure to make payment when due) by reason of any event beyond such Party's reasonable control including Acts of God, fire, flood, explosion, earthquake, pandemic flu, or other natural forces, war, civil unrest, acts of terrorism, accident, destruction or other casualty, any lack or failure of transportation facilities, any lack or failure of supply of raw materials, or any other event similar to those enumerated above. Such excuse from liability shall be effective only to the extent and duration of the event(s) causing the failure or delay in performance and provided that the Party has not caused such event(s) to occur and uses reasonable efforts to overcome such event. Notice of a Party's failure or delay in performance due to force majeure must be given to the other Party within [*] after its occurrence. All delivery dates under this Agreement that have been affected by force majeure shall be tolled for the duration of such force majeure. In no event shall any Party be required to prevent or settle any labor disturbance or dispute.

16.9 Interpretation. The headings of clauses contained in this Agreement preceding the text of the sections, subsections, and paragraphs hereof are inserted solely for convenience and ease of reference only and shall not constitute any part of this Agreement, or have any effect on its interpretation or construction. All references in this Agreement to the singular shall include the plural where applicable. Unless otherwise specified, references in this Agreement to any Article shall include all Sections, subsections, and paragraphs in such Article, references to any Section shall include all subsections and paragraphs in such Section, and references in this Agreement to any subsection shall include all paragraphs in such subsection. The word "including" and similar words means including without limitation. The word "or" means "and/or" unless the context dictates otherwise because the subjects of the conjunction are, or are intended to be, mutually exclusive. The words "herein", "hereof", and "hereunder" and other words of similar import refer to this Agreement as a whole and not to any particular Section or other subdivision. All references to days in this Agreement mean calendar days, unless otherwise specified. Ambiguities and uncertainties in this Agreement, if any, shall not be interpreted against either Party, irrespective of which Party may be deemed to have caused the ambiguity or uncertainty to exist. This Agreement has been prepared in the English language and the English language shall control its interpretation. In addition, all notices required or permitted to be given hereunder, and all written, electronic, oral, or other communications between the Parties regarding this Agreement shall be in the English language.

16.10 Counterparts; Electronic or Facsimile Signatures. This Agreement may be executed in any number of counterparts, each of which shall be an original, but all of which together shall constitute one instrument. This Agreement may be executed and delivered electronically or by facsimile and upon such delivery such electronic or facsimile signature will be deemed to have the same effect as if the original signature had been delivered to the other Party.

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{Signature Page Follows}

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In Witness Whereof, the Parties hereto have caused this **Collaboration and License Agreement** to be executed and entered into by their duly authorized representatives as of the Effective Date.

Rigel Pharmaceuticals, Inc.

By: /s/ Raul R. Rodriguez

Name: Raul R. Rodriguez

Title: President and CEO

Kissei Pharmaceutical Co. Ltd.

By: /s/ Mutsuo Kanzawa

Name: Mutsuo Kanzawa

Title: Chairman and CEO

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List of Exhibits:

Exhibit A (1): Compound

Exhibit A(2): Active Compound

Exhibit B: Rigel Patents

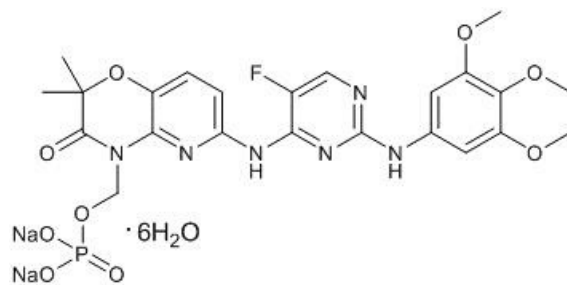
Exhibit C: Initial Development Plan and Budget

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Exhibit A(1): Compound

fostamatinib disodium hexahydrate ("Compound")

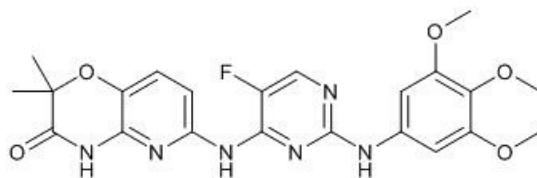
Chemical Name: disodium (6-[[5-fluoro-2-(3,4,5-trimethoxyanilino)pyrimidin-4-yl]amino]-2,2-dimethyl-3-oxo-pyrido[3,2-b][1,4]oxazin-4-yl)methyl phosphate hexahydrate



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Exhibit A(2): Active Compound

Chemical Name: 6-((5-fluoro-2-((3,4,5-trimethoxyanilino)pyrimidin-4-yl)amino)-2,2-dimethyl-2H-pyrido[3,2-b][1,4]oxazin-3(4H)-one



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Exhibit B: Rigel Patents

[*]

[*] = Certain confidential information contained in this document, marked by brackets, has been omitted and filed separately with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended.

Exhibit C: Initial Development Plan and Budget

[*]

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SUPPLY AGREEMENT

This **Supply Agreement** (the “**Supply Agreement**”) is entered into as of October 29, 2018 (the “**Effective Date**”) by and between **Rigel Pharmaceuticals, Inc.**, a Delaware company having an address at 1180 Veterans Blvd., South San Francisco, CA 94080, USA (“**Rigel**”) and **Kissei Pharmaceutical Co. Ltd.**, a Japanese company having an address at 19-48 Yoshino, Matsumoto, Nagano 399-8710, Japan (“**Kissei**”). Rigel and Kissei may be referred to herein individually as a “**Party**” or collectively as the “**Parties**”.

RECITALS

Whereas, Rigel, a biopharmaceutical company, has developed its proprietary compound fostamatinib disodium hexahydrate, also known as TAVALISSE™ in the United States, which has been approved by the FDA for the treatment of chronic immune thrombocytopenia and is under development for the treatment of autoimmune hemolytic anemia, IgA nephropathy, and potentially other indications;

Whereas, Rigel and Kissei are parties to a certain Collaboration and License Agreement of even date hereof (the “**Collaboration and License Agreement**”), under which Rigel has granted Kissei the right to develop and commercialize fostamatinib disodium hexahydrate in the Kissei Territory; and

Whereas, the Collaboration and License Agreement contemplates that Rigel will manufacture, or have manufactured, and supply fostamatinib disodium hexahydrate to Kissei for development and commercial use, and Rigel is willing to manufacture and supply fostamatinib disodium hexahydrate to Kissei, on the terms and conditions set forth below.

Now, Therefore, in consideration of the foregoing premises and the mutual covenants contained herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

ARTICLE 1 DEFINITIONS

Capitalized terms used in this Supply Agreement but not defined herein shall have the meanings set forth in the Collaboration and License Agreement.

- 1.1** “**Batch**” means the quantity of a Product produced in a single production run of such Product.
- 1.2** “**Business Day**” means a day that is not a Saturday, Sunday, or a day on which banking institutions in [*] are authorized by Applicable Law to remain closed.
- 1.3** “**Claim**” had the meaning set forth in Section 9.3.
- 1.4** “**Collaboration and License Agreement**” has the meaning set forth in the Recitals.
- 1.5** “**Compound**” means fostamatinib disodium hexahydrate, having the chemical structure set forth in Exhibit A.

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- 1.6** “**Finish Manufacture**” means the manufacture of Finished Product from bulk Drug Product.
- 1.7** “**Finished Product**” means the Product in appropriate final form, packaged and labeled and ready for its intended use (i.e., sale to the end-user, use in any Clinical Trial or other Development work, or use as a sample).
- 1.8** “**GMP**” means the current minimum standards for methods to be used in, and the facilities or controls to be used for, the manufacture, processing, packing, or holding of a drug as specified by applicable laws of the relevant countries at the time of manufacturing conducted in accordance with this Supply Agreement, defined under (a) 21 C.F.R. Part 210 and 211, and (b) equivalent law or regulations in any other applicable jurisdiction in the Territory.
- 1.9** “**Indemnitee**” has the meaning set forth in Section 9.3.
- 1.10** “**Indemnitor**” has the meaning set forth in Section 9.3.
- 1.11** “**Information**” means any data, results, technology, business, or financial information, or information of any type whatsoever, in any tangible or intangible form, including know-how, trade secrets, practices, techniques, methods, processes, inventions, developments, specifications, formulae, software, algorithms, marketing reports, expertise, technology, test data (including pharmacological, biological, chemical, biochemical, clinical test data, and data resulting from non-clinical studies), CMC information, stability data, and other study data and procedures.
- 1.12** “**Kissei Indemnitee**” has the meaning set forth in Section 9.1.
- 1.13** “**Losses**” has the meaning set forth in Section 9.1.
- 1.14** “**Manufacture**” means all activities related to the manufacturing of the Drug Product in fill and finished form but without final packaging or labeling, including quality assurance activities related to manufacturing and release of product, ongoing stability tests, and regulatory activities related to any of the foregoing. “**Manufacturing**” has a correlative meaning.
- 1.15** “**Order Forecast**” has the meaning set forth in Section 2.2(a).
- 1.16** “**Quality Agreement**” has the meaning set forth in Section 2.6.
- 1.17** “**Rigel Indemnitee**” has the meaning set forth in Section 9.2.
- 1.18** “**Specification**” means the written specifications for the Product. Specifications may be required to be different for a Product for use in different countries due to individual Regulatory Authority requirements in such countries.
- 1.19** “**Term**” has the meaning set forth in Section 10.1.
- 1.20** “**Transfer Price**” has the meaning set forth in Section 3.1.

ARTICLE 2 PRODUCT SUPPLY

2.1 Purchase and Sale. Pursuant to the terms and conditions of this Supply Agreement, Rigel (either itself or through its Affiliates or Third Party subcontractors) shall Manufacture and supply the Product and its placebo

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(if applicable) to Kissei in such quantities as Kissei shall order pursuant to and in accordance with this Article 2, and Kissei shall purchase from Rigel all of Kissei's and its Affiliates' and Sublicensees' requirements for Products for development and commercialization in the Field in the Kissei Territory pursuant to and in accordance with the Collaboration and License Agreement. For clarity, Rigel may perform its obligations under this Supply Agreement through one or more Third Party subcontractors, provided that Rigel remains responsible for the work allocated to, and payment to, such subcontractors as it selects, to the same extent it would if it had done such work itself. Notwithstanding the following Sections 2.2 and 2.3, the Parties agree that Kissei may amend Order Forecasts (as defined below) and Purchase Orders (as defined below) from time to time during the [*] from the Effective Date with the prior mutual consent of the Parties via the JSC and Rigel shall supply the Product to Kissei in such agreed quantities.

2.2 Order Forecasts.

(a) **Rolling Forecast.** On or before the [*] of each Calendar Quarter during the Term of this Supply Agreement, Kissei shall provide Rigel a rolling forecast of the quantity of Products to be used for (i) Development purposes that Kissei plans to order during the [*] period commencing the following Calendar Quarter and (ii) Commercial use that Kissei plans to order during the [*] period commencing the following Calendar Quarter ("**Order Forecast**"). For clarity, each Order Forecast shall itemize the applicable quantity of Drug Product for each of Development and Commercial use. Each Order Forecast shall be made in good faith for budget and capacity planning purposes only and shall be non-binding on Kissei and Rigel, except as provided in Section 2.2(b). The Parties shall discuss and review the Order Forecast at each regularly scheduled meeting of the JSC established by the Parties under the Collaboration and License Agreement (or by a subcommittee established by the JSC to oversee the manufacture and supply of the Product). The Order Forecast will be in substantially the form attached hereto as **Exhibit B**.

(b) **Binding Commitment.** The first [*] of each Order Forecast shall constitute a binding commitment for Kissei to purchase, pursuant to Section 2.3(a), [*] of the quantities of Drug Product specified therein and Kissei shall be required to order such quantities pursuant to Section 2.3(a). For clarity, the numbers set out in the following [*] of the Order Forecast constitute the non-binding forecast of Kissei's expected requirements.

2.3 Purchase Orders; Delivery Terms.

(a) **Purchase Orders.** On or before the [*] of each Calendar Quarter during the Term of this Supply Agreement, Kissei shall submit to Rigel a binding purchase order (a "**Purchase Order**") for Drug Product to be delivered during the next Calendar Quarter of the most recent Order Forecast for Development use and/or Commercial use in quantities [*] those set forth for such Calendar Quarter in the most recent Order Forecast. Rigel shall accept or reject each Purchase Order in writing within [*] after its receipt of such Purchase Order; provided, however, that Rigel shall accept such Purchase Order if the quantities of Drug Product ordered for each of Development and Commercial uses in such Purchase Order are [*] the quantities for such use set forth in the most recent Order Forecast, as applicable.

(b) **Additional Quantities.** In the event Kissei desires to obtain quantities of Drug Product in a particular Calendar Quarter in excess of the quantities specified in the Order Forecast after such forecast became binding, Kissei shall notify Rigel in writing and the Parties will discuss in good faith whether Rigel may be able to supply Kissei with such additional quantities, provided that Rigel shall use Commercially Reasonable Efforts to accept such order for such additional quantities, and provided further that Kissei shall be solely responsible for any additional cost incurred in supplying such additional quantities. For clarity, Rigel shall not be obligated to accept any such order for additional quantities if accepting such order would result in or is reasonably likely to result in a Drug Product shortfall in the Rigel Territory.

(c) **Delivery and Shipping Terms.** Purchase Orders submitted for quantities of Product that are in accordance with Section 2.3(a) and/or Section 2.3(b) will be binding on both Parties after acceptance in writing

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by Rigel. The Purchase Order will specify delivery dates for such order to be delivered in such Calendar Quarter, but will in no event be a date sooner than [*] following the Purchase Order date. By way of example, a Purchase Order submitted on [*] would specify the quantity of Product ordered for delivery in [*], with a delivery date no sooner than [*]. Notwithstanding the foregoing, Rigel's delivery schedule under this Supply Agreement shall be subject to any change in the delivery schedule under the supply agreements between Rigel and its contract manufacturers. The Parties agree to discuss in good faith any adjustment of the minimum delivery time of [*] from Purchase Order submission if a Party deems such an adjustment necessary. Rigel shall inform Kissei in advance of any such change. Rigel shall deliver all Product [*] , and title and risk of loss shall pass from Rigel to Kissei upon the Product's being placed at the disposal of Kissei [*]. Rigel shall be responsible for obtaining all licenses or other authorizations for the exportation of such shipments and shall supply Kissei with the documentation required for filing or claiming credit or deduction for any applicable taxes and/or duties. Kissei shall be responsible for [*], and shall be the importer of record and responsible for [*], and shall be responsible for obtaining all distribution licenses for the Product. Notwithstanding the foregoing, Rigel shall [*], and cooperates with Kissei on such shipment.

(d) **Separate Contracts.** Each Purchase Order will constitute a separate contract for the supply of Drug Product on the terms of this Supply Agreement (and excluding all other terms and conditions including any set out or referred to in any Purchase Order). In the event of a conflict between a Purchase Order and the terms of this Supply Agreement, the terms of this Supply Agreement will govern.

2.4 Supply.

(a) **Documentation.** Rigel shall establish and maintain any necessary drug master files, standard operating procedures, protocols, and master batch records for the Manufacture of the Product. Rigel shall, in connection with each shipment of Product to Kissei, provide to Kissei the certificate of compliance, certificate of analysis, completed batch records, and any other documentation as may be required in the Quality Agreement with respect to such shipment.

(b) **Traceability.** Rigel shall mark the Drug Product shipment supplied to Kissei with a lot number for the purposes of traceability. Kissei shall record the lot number of each Drug Product used for each Clinical Trial, promotion and marketing event, distributed to each patient in an expanded access program, or sold to each customer, and shall retain all such records for at least [*] after the date of termination or expiration of this Supply Agreement to facilitate in the event of a Recall under Section 5.7 of the Collaboration and License Agreement.

(c) **Form of Supply.** Rigel shall supply Kissei with Drug Product and Kissei shall perform the Finish Manufacture of the Drug Product, including final packaging and labeling, for Development uses. Kissei shall perform the tablet appearance test with the appearance testing machine and the Finish Manufacture of the Drug Product, including final packaging and labeling, for Commercial uses. Kissei shall be responsible for ensuring that the Finished Product conforms with all Applicable Laws and Regulatory Approvals for each applicable jurisdiction within Kissei Territory.

(d) **Finished Product Release.** Kissei (by itself or through its contract manufacturer) shall conduct release tests of the Product, and the Parties will agree to a mechanism in the Quality Agreement for the shipment of test samples of each Batch of the Drug Product to Kissei for local release testing purposes.

(f) **Product Shelf Life.** The Product supplied by Rigel to Kissei hereunder shall have a remaining shelf life of [*].

(g) **Inventory Management; Safety Stock.** Each Party shall manage its inventory in a manner that maximizes the remaining shelf life of its inventory. Kissei shall carry a reasonable quantity of inventory of the Finished Product, and Rigel shall carry a reasonable quantity of raw materials, including the Compound, which may be used in the event of an interruption to the supply chain. The quantity of such safety stock shall be sufficient to cover the quantity set forth in the Order Forecast for [*]. The Parties shall replace and replenish the safety stock

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continuously on a first to expire, first out basis. Each Party shall be responsible for the cost of maintaining its own safety stock.

2.5 Inspection and Acceptance.

(a) Non-Conforming Product.

(i) Kissei shall inspect all shipments of Product promptly upon receipt, and shall notify Rigel in writing in reasonable detail within [*] of receipt if Kissei is rejecting any Product that fails to conform to Rigel's warranties set forth in Sections 8.2(a) or 8.2(b). All Product not rejected within such [*] period will be deemed accepted.

(ii) If Kissei notifies Rigel of any nonconformity of any Product in accordance with Section 2.5(a) (i), Rigel shall have the right to inspect the Product in question and Kissei shall cooperate with Rigel's inspection, including providing Rigel with samples of the Product in question for testing upon request. If Rigel agrees with such notice of nonconformity and that such nonconformity was not caused by occurrences after the delivery of the Product to Kissei, Rigel shall, at its discretion and expense, either: (A) replace such Product, [*], as soon as reasonably practicable after receipt of notification of such nonconformity or (B) refund any portion of the applicable amount that has already been paid for such Product ; provided, however, that if Rigel is required to make a payment to any contract manufacturer (or is not entitled to a refund from such contract manufacturer) in connection with any such non-conforming Product caused by Kissei or while under Kissei's control, Kissei shall be required to pay Rigel under this Supply Agreement with respect to such non-conforming Product unless and until Rigel is relieved of its payment obligation (or is refunded its payment) for such non-conforming Product under its agreements with such contract manufacturers.

(iii) In the event that Rigel disagrees with Kissei that a Product does not conform to Rigel's warranties set forth in Section 8.2(a) or 8.2(b), as applicable, or considers that the defect was caused by occurrences after the delivery of the Product to Kissei, it may require a sample of the allegedly nonconforming Product to be delivered to a mutually acceptable independent testing laboratory for testing or, in the case of a dispute concerning compliance with GMP, an independent consultant for evaluation. Except in the case of manifest error, the determination of the laboratory or consultant as to whether the Product is nonconforming will be final and binding on the Parties. The fees and expenses of such laboratory testing or consultant, as the case may be, shall be borne entirely by the Party against whom such laboratory's or consultant's determination is made. If, as the case may be, such determination is against Kissei, then such Product shall be deemed accepted by Kissei. If, as the case may be, such determination is against Rigel, then Rigel shall, subject to the instruction of Kissei, either refund any portion of the applicable amount that has already been paid by Kissei for such Product or replace such Product, at no additional cost to Kissei, as soon as reasonably possible, but in no event later than [*] if replacement Drug Product stock is available, or if replacement Drug Product stock is unavailable at such time, as soon as reasonably practical after it becomes available ; provided, however, that if Rigel is required to make a payment to any contract manufacturer (or is not entitled to a refund from such contract manufacturer) in connection with any such non-conforming Product caused by Kissei or while under Kissei's control, Kissei shall be required to pay Rigel under this Supply Agreement with respect to such non-conforming Product unless and until Rigel is relieved of its payment obligation (or is refunded its payment) for such non-conforming Product under its agreements with such contract manufacturers .

(b) **Sole Remedy.** Notwithstanding anything to the contrary in this Supply Agreement, the remedy set forth in this Section 2.5 will be Kissei's sole and exclusive remedy and recourse with respect to the shortages that are not also nonconforming Product delivered to Kissei by Rigel hereunder.

(c) **Damage after Delivery.** Kissei shall bear the risk of damage to the Product after delivery to Kissei pursuant to Section 2.3(c) . If the Product is damaged after delivery to Kissei pursuant to Section 2.3(c) and Kissei intends to order replacement Product, Kissei shall promptly notify Rigel of the damage and any orders for replacement Product, and Rigel may, at its sole discretion but in good faith, accept or reject all or a portion of the order for the replacement Product.

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2.6 Quality Agreement. As soon as reasonably practicable after the Effective Date, the Parties shall agree to the terms and conditions of a quality agreement (the “**Quality Agreement**”) setting forth in detail the quality assurance arrangements and procedures for the Manufacture of the Product, which Quality Agreement shall be incorporated herein by reference. For clarity, the Parties shall agree to the terms and conditions of (a) the Quality Agreement for Drug Product for Development use as soon as reasonably practicable after the Effective Date, and (b) the Quality Agreement for Drug Product for Commercial uses, if different than the Quality Agreement specified in subsection (a), as soon as reasonably practicable after the first MAA for the Product is submitted in the Kissei Territory. To the extent that the terms of this Supply Agreement and those of the Quality Agreement are in conflict, the terms of this Supply Agreement shall control except with respect to quality issues, which shall be governed by the Quality Agreement. For clarity, if there are any financial terms in the Quality Agreement that are in conflict with this Supply Agreement, this Supply Agreement shall control with respect to such financial terms.

2.7 Backup Supplier. In the event that for a period of [*], Rigel has failed to supply [*] of the quantity of the Product [*], Kissei shall have the right to manufacture the Compound and the Product by itself or a Third Party manufacturer in the Kissei Territory (a “**Backup Manufacturer**”). In preparation for manufacturing at the Backup Manufacturer, upon Kissei’s reasonable request, Rigel shall [*] transfer to Kissei the technology concerning the manufacture of the Compound and the Product after the Effective Date hereof. The costs and expenses associated with the engagement of the Backup Manufacturer, including the costs for transferring the Manufacturing process to such Backup Manufacturer, shall be borne [*].

2.8 Allocation in the Event of Product Shortages.

(a) This Section 2.8 shall apply in the event that Rigel is unable to supply, with respect to a Calendar Quarter, [*] (i) Product ordered by Kissei pursuant to Sections 2.2 and 2.3 for delivery in such Calendar Quarter, plus (ii) Product required by Rigel or its Affiliates or other licensees for their own use with respect to such Calendar Quarter (such event, a “**Shortfall**”). The purpose of these allocation rules is to permit Kissei (with respect to the Kissei Territory) and Rigel (with respect to the Rigel Territory) to independently make their respective long-term purchase decisions for the Product, with the benefits and risks of such purchase decisions to be allocated to Kissei or Rigel, as the case may be.

(b) If Rigel is unable to supply [*] (i) Product ordered by Kissei pursuant to a Purchase Order plus (ii) Product required by Rigel or its Affiliates or other licensees for their own use, then the available Product in each Calendar Quarter in which a Shortfall occurs shall be [*].

(c) The allocation rules set forth in this Section 2.8 shall restart for each Calendar Quarter, without any carryover of a Shortfall realized by either Kissei or Rigel in the prior Calendar Quarter.

(d) If Rigel determines that it will not be able to deliver the quantities of the Product specified in the Purchase Order on the requested delivery date, or Rigel is made aware of any future anticipated shortages, then Rigel shall promptly notify Kissei of such determination, and in any event, no later than [*] following such determination. Such notification shall include the reasons for and the expected duration of Rigel’s anticipated inability to deliver such quantities of the Product. Promptly thereafter, but in no event more than [*] after such notification, the Parties shall discuss in good faith the matters set forth in such notification and begin good faith negotiations with respect to an alternative delivery schedule or alternative sourcing for such Product; provided that any such negotiations shall not relieve Rigel of its obligations hereunder.

2.9 Supply Contacts. Each Party shall designate one (1) qualified and experienced supply chain professional to serve as that Party’s primary supply contact regarding the supply of Product within this Supply Agreement (“**Supply Contacts**”) and under the direction of the JSC. Each Party may replace its Supply Contact with an alternative representative at any time with prior written notice to the other Party. Supply Contacts shall be responsible for facilitating information exchange and discussion between the Parties regarding the supply of Product

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under this Supply Agreement. Supply Contact shall have decision-making authority within the guidance and subject to the review and approval of the JSC. Each Party shall bear its own costs of its Supply Contact, [*].

ARTICLE 3

FINANCIALS

3.1 Price.

(a) **Development Use.** All Drug Product supplied by Rigel to Kissei for use for Development purposes shall be at the applicable price set forth in Section 7.1 of the Collaboration and License Agreement.

(b) **Commercial Use.** All Drug Product supplied by Rigel to Kissei for use for Commercial purposes shall be equal to the Transfer Price calculated in accordance with Section 8.5 of the Collaboration and License Agreement.

3.2 Invoice and Payment. Concurrently with delivery of Product to Kissei, Rigel shall submit to Kissei an invoice for payment, in U.S. Dollars, of the payment for such delivery, which invoice shall be prepared accordingly:

(a) for Product and its placebo supplied for Development purposes, in accordance with Section 7.1 of the Collaboration and License Agreement,

(b) for Product supplied for Commercial purposes during the Commercialization Term, in accordance with Section 8.5(c) of the Collaboration and License Agreement, and

(c) for Product supplied for Commercial purposes during the Extended Commercialization Term, Kissei shall pay to Rigel a Transfer Price equal to [*].

Kissei shall pay each invoice, in U.S. Dollars, within [*] Kissei receives such invoice by wire transfer of immediately available funds into an account designated by Rigel. Financial audits shall be conducted in accordance with Section 9.4 of the Collaboration and License Agreement, and late payments shall bear interest as set forth in Section 9.5 of the Collaboration and License Agreement.

3.3 Other Manufacture Related Costs. Kissei shall be responsible for the costs and expenses of Manufacture-related work that is performed by or on behalf of Rigel at Kissei's reasonable request, which costs and expenses are not included in the calculation of Cost of Goods, including internal costs, but excluding, for clarity, any costs and expenses specifically for capital investment that should generally be required by a pharmaceutical manufacturing facility. Within [*], Rigel shall submit to Kissei a reasonably detailed invoice, in U.S. Dollars, setting forth the costs and expenses incurred by Rigel in connection with such work. Kissei shall pay to Rigel the amount invoiced, in U.S. Dollars, within [*] Kissei receives such invoice by wire transfer of immediately available funds into an account designated by Rigel. Late payments shall bear interest as set forth in Section 9.5 of the Collaboration and License Agreement.

3.4 Tax. Kissei shall pay any and all taxes (other than taxes based on Rigel's income), duties, assessments, and other charges and expenses imposed by any Governmental Authority in connection with the supply and transfer of Product to Kissei. If a withholding or deduction obligation occurs, then the sum payable by Kissei (in respect of which such deduction or withholding is required to be made) shall be increased to the extent necessary to ensure that Rigel receives a sum equal to the sum which it would have received had no such withholding or deduction occurred.

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**ARTICLE 4
REGULATORY**

4.1 Regulatory Inspections. Rigel shall cooperate with any inspection of its facilities by any Regulatory Authority overseeing the Manufacture of the Product for use in the Kissei Territory. Each Party shall notify the other Party of any such inspection and shall permit the other Party's representative to observe such inspection to the extent such inspection is scheduled at least [*] in advance and such observation is permitted by Applicable Laws and any applicable agreement between Rigel and a Third Party (such as a contract manufacturing organization) in the event such facility is owned and/or operated by such Third Party.

4.2 GMP, Quality Assurance, and Other Audits. Kissei shall have the right to conduct GMP, quality assurance, and other audits (e.g., Environment, Health & Safety) pursuant to the terms and conditions of the Quality Agreement, but subject to any applicable agreement between Rigel and a Third Party (such as a contract manufacturing organization) in the event such facility is owned and/or operated by such Third Party.

4.3 Inquiries and Customer Complaints. Kissei shall comply with the Pharmacovigilance Agreement and Section 5.4 of the Collaboration and License Agreement with respect to all inquiries, complaints, and adverse events regarding the Products in the Kissei Territory.

4.4 Notification of Potential Recall; Recalls. Each Party will act in accordance with the notice requirements set forth in Section 5.7 of the Collaboration and License Agreement. In the event that any Recall with respect to a Product is the direct result of a breach of any warranty of Rigel set forth in Section 8.2 and is not the result of Kissei's, its Affiliates', or its sublicensees' Finish Manufacture, transportation, storage, marketing, use, sale, or distribution of the Product, then Rigel shall bear (and reimburse Kissei for) all of the costs and expenses of such recalled Product and the destruction of such recalled Product. To the extent that the reason for any Recall with respect to the Product hereunder is in part the direct result of the breach of any warranty of Rigel set forth in Section 8.2 and in part the result of Kissei's, its Affiliates', or its sublicensees' Finish Manufacture, transportation, storage, marketing, use, sale, or distribution of the Product, then the expenses of such Recall shall be allocated in an equitable manner between the Parties.

**ARTICLE 5
CONFIDENTIALITY**

5.1 Confidentiality. Any and all Information disclosed by a Party to the other Party under this Supply Agreement shall be deemed Confidential Information of such Party under the Collaboration and License Agreement and subject to the confidentiality provisions set forth in Article 13 of the Collaboration and License Agreement.

**ARTICLE 6
INTELLECTUAL PROPERTY**

6.1 Intellectual Property. Any and all inventions, whether patentable or not and including all intellectual property rights therein, generated by either Party in the course of conducting their activities under this Supply Agreement shall be deemed to be generated under the Collaboration and License Agreement and subject to the rights and obligations of the Parties as set forth therein.

**ARTICLE 7
FORCE MAJEURE**

7.1 Force Majeure. Notwithstanding anything to the contrary in this Supply Agreement, both Parties shall be excused from the performance of their obligations under this Supply Agreement to the extent that (a) force majeure prevents such performance or, with respect to Rigel's supply obligations pursuant to Article 2, prevents the

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combined supply of (i) Product specified in accepted orders placed by Kissei in accordance with Section 2.3(a) and (ii) Product required by Rigel and its Affiliates, and (b) the nonperforming Party promptly provides notice of the force majeure to the other Party. Such excuse shall continue so long as the condition constituting force majeure continues and the nonperforming Party takes reasonable efforts to remove the condition. For purposes of this Supply Agreement, force majeure shall include conditions beyond the reasonable control of the applicable Party, including an act of God, war, civil commotion, terrorist act, labor strike or lock-out, epidemic, failure or default of public utilities or common carriers, destruction of production facilities or materials by fire, earthquake, storm, or like catastrophe. Notwithstanding the foregoing, a Party will not be excused from making payments owed hereunder because of a force majeure affecting such Party. If a force majeure persists for more than [*], then the Parties will discuss in good faith the modification of the Parties' obligations under this Supply Agreement in order to mitigate the delays caused by such force majeure.

ARTICLE 8 REPRESENTATIONS AND WARRANTIES

8.1 Mutual Representations and Warranties. Each Party represents and warrants to the other that, as of the Effective Date: (i) it is duly organized and validly existing under the laws of its jurisdiction of incorporation or formation, and has full corporate or other power and authority to enter into this Supply Agreement and to carry out the provisions hereof, (ii) it is duly authorized to execute and deliver this Supply Agreement and to perform its obligations hereunder, and the person or persons executing this Supply Agreement on its behalf has been duly authorized to do so by all requisite corporate or partnership action, and (iii) this Supply Agreement is legally binding upon it, enforceable in accordance with its terms, and does not conflict with any agreement, instrument, or understanding, oral or written, to which it is a Party or by which it may be bound, nor violate any material law or regulation of any court, governmental body, or administrative or other agency having jurisdiction over it.

8.2 Product Warranties. Rigel represents and warrants to Kissei that:

- (a) all Product supplied to Kissei pursuant to this Supply Agreement shall be Manufactured in conformity with GMPs;
- (b) each Product supplied to Kissei pursuant to this Supply Agreement, at the time of shipment of such Product to Kissei pursuant to Section 2.3(c), shall conform to the applicable Specifications for such Product; and
- (c) all Product supplied to Kissei pursuant to this Supply Agreement shall, at the time of shipment of such Product to Kissei pursuant to Section 2.3(c), be free and clear of all liens, security interests, and other encumbrances; provided, however, that Rigel shall retain a security interest in such Product until Kissei pays for it in full pursuant to Section 3.2 of this Supply Agreement and Section 8.5 of the Collaboration and License Agreement.

8.3 Disclaimers. EXCEPT AS EXPRESSLY STATED IN THIS SUPPLY AGREEMENT, NO REPRESENTATIONS OR WARRANTIES WHATSOEVER, WHETHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY, AND FITNESS FOR A PARTICULAR PURPOSE, ARE MADE OR GIVEN BY OR ON BEHALF A PARTY, AND ALL REPRESENTATIONS AND WARRANTIES, WHETHER ARISING BY OPERATION OF LAW OR OTHERWISE, ARE HEREBY EXPRESSLY EXCLUDED.

ARTICLE 9 □ INDEMNIFICATION

9.1 Indemnification by Rigel. Rigel hereby agrees to defend, indemnify, and hold harmless Kissei and its Affiliates and their respective directors, officers, employees, and agents (each, a "**Kissei Indemnitee**") from and against any and all liabilities, expenses, and losses including any product liability, personal injury, property damage,

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including reasonable legal expenses and attorneys' fees (collectively, "**Losses**"), to which any Kissei Indemnitee may become subject as a result of any claim, demand, action, or other proceeding by any Third Party to the extent such Losses arise out of or result from: (a) the negligence or willful misconduct of any Rigel Indemnitee, or (b) the breach by Rigel of any warranty, representation, covenant, or agreement made by Rigel in this Supply Agreement; except, in each case (a)-(b), to the extent such Losses arise out of any activities set forth in Section 9.2(a), (b), (c), or (d) for which Kissei is obligated to indemnify any Rigel Indemnitee(s) under Section 9.2.

9.2 Indemnification by Kissei. Kissei hereby agrees to defend, indemnify, and hold harmless Rigel, its Affiliates, and licensees and their respective directors, officers, employees, and agents (each, a "**Rigel Indemnitee**") from and against any and all Losses to which any Rigel Indemnitee may become subject as a result of any claim, demand, action, or other proceeding by any Third Party to the extent such Losses arise out of: (a) the negligence or willful misconduct of any Kissei Indemnitee, (b) the breach by Kissei of any warranty, representation, covenant, or agreement made by Kissei in this Supply Agreement, (c) the Finish Manufacture, export, import, storage, packaging, or labeling, by or on behalf of Kissei or its Affiliates or sublicensees, of any Product supplied by Rigel hereunder, or (d) the commercialization of any Product supplied by Rigel hereunder; except, in each case (a)-(d), to the extent such Losses arise out of any activities set forth in Section 9.1(a) or (b) for which Rigel is obligated to indemnify any Kissei Indemnitee(s) under Section 9.1.

9.3 Indemnification Procedures. A party that intends to claim indemnification under this Article 9 (the "**Indemnitee**") shall promptly notify the indemnifying Party (the "**Indemnitor**") in writing of any Third Party claim, demand, action, or other proceeding (each, a "**Claim**") in respect of which the Indemnitee intends to claim such indemnification, and the Indemnitor shall have sole control of the defense or settlement thereof. The Indemnitee may participate at its expense in the Indemnitor's defense of and settlement negotiations for any Claim with counsel of the Indemnitee's own choice. The indemnity arrangement in this Article 9 shall not apply to amounts paid in settlement of any action with respect to a Claim if such settlement is effected without the consent of the Indemnitor, which consent shall not be unreasonably withheld or delayed. The failure to deliver written notice to the Indemnitor within a reasonable time after the commencement of any action with respect to a Third Party Claim shall only relieve the Indemnitor of its indemnification obligations under this Article 9 if and to the extent the Indemnitor is actually prejudiced thereby. The Indemnitee shall cooperate fully with the Indemnitor and its legal representatives in the investigation of any action with respect to a Claim covered by this indemnification.

9.4 Insurance. Each Party, at its own expense, shall maintain insurance as set forth in Section 12.4 of the Collaboration and License Agreement.

9.5 Limitation of Liability. NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, LOST PROFITS, PUNITIVE, OR INDIRECT DAMAGES ARISING FROM OR RELATING TO ANY BREACH OF THIS SUPPLY AGREEMENT, REGARDLESS OF ANY NOTICE OF THE POSSIBILITY OF SUCH DAMAGES. NOTWITHSTANDING THE FOREGOING, NOTHING IN THIS SECTION 9.5 IS INTENDED TO OR SHALL LIMIT OR RESTRICT THE INDEMNIFICATION RIGHTS OR OBLIGATIONS OF ANY PARTY UNDER SECTIONS 9.1 OR 9.2, OR DAMAGES AVAILABLE FOR A PARTY'S BREACH OF CONFIDENTIALITY OBLIGATIONS IN Article 5. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, RIGEL'S OBLIGATIONS AND LIABILITY IN CONNECTION WITH ITS SUPPLY OBLIGATIONS UNDER THIS SUPPLY AGREEMENT (INCLUDING IN CONNECTION WITH ANY SUPPLY SHORTAGE, DELAYS, AND QUALITY AND OTHER MATTERS AND RIGEL'S INDEMNIFICATION OBLIGATIONS TO KISSEI UNDER THIS SUPPLY AGREEMENT) SHALL BE LIMITED TO THE EXTENT OF THE REMEDIES ACTUALLY OBTAINED AND RECOVERED BY RIGEL FROM ITS CONTRACT MANUFACTURERS UNDER THE SUPPLY AGREEMENTS BETWEEN RIGEL AND THE APPLICABLE CONTRACT MANUFACTURER.

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**ARTICLE 10
TERM AND TERMINATION**

10.1 Term. This Supply Agreement shall commence on the Effective Date and shall continue until terminated as provided in this Section 10.2 (the “**Term**”).

10.2 Termination.

(a) **Material Breach.** A Party’s material breach of this Supply Agreement will constitute such Party’s material breach of the Collaboration and License Agreement, and each Party shall have the right to terminate this Supply Agreement and the Collaboration and License Agreement for the other Party’s uncured material breach of this Supply Agreement as set forth in Section 14.2(a) of the Collaboration and License Agreement.

(b) **Due to Early Termination of the Collaboration and License Agreement.** This Supply Agreement shall automatically terminate upon termination of the Collaboration and License Agreement pursuant to Section 14.2, 14.3(a), or 14.3(b) of the Collaboration and License Agreement.

(c) **After the Commercialization Term.** Either Party shall have the right to terminate this Supply Agreement, on a Product-by-Product and country-by-country basis, without cause upon [*] prior written notice to the other Party so long as such termination becomes effective on or after the end of the Commercialization Term for such Product in such country.

10.3 Effects of Termination; Survival. Termination or expiration of this Supply Agreement shall not affect the rights or obligations of the Parties under this Supply Agreement that have accrued prior to the date of termination or expiration. Upon termination of this Supply Agreement for any reason: (a) Products Manufactured pursuant to Purchase Orders will be delivered on the scheduled delivery dates and Kissei shall pay Rigel not later than [*] after the delivery date (provided, however, that Kissei makes advance payment prior to shipment in the event of termination due to payment default by Kissei); and (b) all costs of unused and unusable by Rigel raw materials, labels, and packaging incurred by Rigel shall be paid by Kissei in the event that Rigel terminates this Supply Agreement pursuant to Section 10.2(a) or that this Supply Agreement is terminated pursuant to Section 10.2(b) as a result of termination of the Collaboration and License Agreement by Kissei pursuant to Sections 14.3(a) or (b) of the Collaboration and License Agreement. Notwithstanding anything to the contrary, the following provisions shall survive any expiration or termination of this Supply Agreement: Sections 5 (Confidentiality), 6 (Intellectual Property), 9 (Indemnification), 10.3 (Effects of Termination; Survival), and 11 (General Provisions).

**ARTICLE 11
GENERAL PROVISIONS**

11.1 Governing Law; Dispute Resolution. This Supply Agreement, and all questions regarding the existence, validity, interpretation, breach, or performance of this Supply Agreement, shall be governed by, and construed and enforced in accordance with, the laws of the State of New York, United States, without reference to its conflicts of law principles. The application of the U.N. Convention on Contracts for the International Sale of Goods (1980) is excluded. Any controversy or claim arising out of, relating to, or in connection with any provision of this Supply Agreement shall be resolved in accordance with Article 15 of the Collaboration and License Agreement.

11.2 Entire Agreement; Amendment. This Supply Agreement, including the Exhibits, together with the Collaboration and License Agreement, is both a final expression of the Parties’ agreement and a complete and exclusive statement with respect to all of its terms. This Supply Agreement supersedes all prior and contemporaneous agreements and communications, whether oral, written, or otherwise, concerning any and all matters contained herein. This Supply Agreement may only be modified or supplemented in a writing expressly stated for such purpose and signed by the Parties to this Supply Agreement. No modification to this Supply Agreement will be effected by the

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acknowledgment or acceptance of any Purchase Order or shipping instruction forms or similar documents containing terms or conditions at variance with or in addition to those set forth herein.

11.3 Notices. Any notice to be given under this Supply Agreement must be in writing and delivered either in person, by (a) air mail (postage prepaid) requiring return receipt, (b) overnight courier, or (c) facsimile confirmed thereafter by any of the foregoing, to the Party to be notified at its address(es) given below, or at any address such Party may designate by prior written notice to the other in accordance with this Section 11.3. Notice shall be deemed sufficiently given for all purposes upon the earliest of: (i) the date of actual receipt, (ii) if air mailed, [*] after the date of postmark, (iii) if delivered by overnight courier, the next day the overnight courier regularly makes deliveries, or (iv) if sent by facsimile, the date of confirmation of receipt if during the recipient's normal business hours, otherwise the next business day.

If to Kissei, notices must be addressed to:

Kissei Pharmaceutical Co., Ltd
1-8-9 Nihonbashi-Muromachi,
Chuo-ku, Tokyo 103-0022 Japan
Attention: [*]
Facsimile: [*]

cc.
Kissei Pharmaceutical Co., Ltd.
19-48 Yoshino, Matsumoto-City
Nagano-prefecture, 399-8710 Japan
Attention: [*]
Facsimile: [*]

If to Rigel, notices must be addressed to:

Rigel Pharmaceuticals, Inc.
1180 Veterans Blvd.
South San Francisco, CA 94080
USA
Attention: [*]
Facsimile: [*]

11.4 Interpretation. The headings of clauses contained in this Supply Agreement preceding the text of the sections, subsections, and paragraphs hereof are inserted solely for convenience and ease of reference only and shall not constitute any part of this Supply Agreement, or have any effect on its interpretation or construction. All references in this Supply Agreement to the singular shall include the plural where applicable. Unless otherwise specified, references in this Supply Agreement to any Article shall include all Sections, subsections, and paragraphs in such Article, references to any Section shall include all subsections and paragraphs in such Section, and references in this Supply Agreement to any subsection shall include all paragraphs in such subsection. The word "including" and similar words means including without limitation. The word "or" means "and/or" unless the context dictates otherwise because the subjects of the conjunction are, or are intended to be, mutually exclusive. The words "herein", "hereof", and "hereunder" and other words of similar import refer to this Supply Agreement as a whole and not to any particular Section or other subdivision. All references to days in this Supply Agreement mean calendar days, unless

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otherwise specified. Ambiguities and uncertainties in this Supply Agreement, if any, shall not be interpreted against either Party, irrespective of which Party may be deemed to have caused the ambiguity or uncertainty to exist. This Supply Agreement has been prepared in the English language and the English language shall control its interpretation. In addition, all notices required or permitted to be given hereunder, and all written, electronic, oral, or other communications between the Parties regarding this Supply Agreement shall be in the English language.

11.5 Assignment. Except as expressly provided hereunder, neither this Supply Agreement nor any rights or obligations hereunder may be assigned or otherwise transferred by either Party without the prior written consent of the other Party (which consent shall not be unreasonably withheld); provided, however, that either Party may assign or otherwise transfer this Agreement and its rights and obligations hereunder without the other Party's consent:

(a) in connection with the assignment of the Collaboration and License Agreement to a Third Party as set forth in Section 16.5 of the Collaboration and License Agreement; or

(b) to an Affiliate, provided that the assigning Party shall remain liable and responsible to the non-assigning Party hereto for the performance and observance of all such duties and obligations by such Affiliate.

The rights and obligations of the Parties under this Supply Agreement shall be binding upon and inure to the benefit of the successors and permitted assigns of the Parties specified above, and the name of a Party appearing herein will be deemed to include the name of such Party's successors and permitted assigns to the extent necessary to carry out the intent of this Section 11.4. Any assignment not in accordance with this Section 11.4 shall be null and void.

11.6 Performance by Affiliates. Each Party may discharge any obligations and exercise any right hereunder through any of its Affiliates. Each Party hereby guarantees the performance by its Affiliates of such Party's obligations under this Supply Agreement, and shall cause its Affiliates to comply with the provisions of this Supply Agreement in connection with such performance. Any breach by a Party's Affiliate of any of such Party's obligations under this Supply Agreement shall be deemed a breach by such Party, and the other Party may proceed directly against such Party without any obligation to first proceed against such Party's Affiliate.

11.7 Further Actions. Each Party agrees to execute, acknowledge, and deliver the Quality Agreement.

11.8 Compliance with Applicable Laws. Each Party shall comply in all material respects with all Applicable Laws, including, but not limited to, those concerning drugs, drug manufacture regulatory requirements, or exportation or importation of Products, including but not limited to proper declaration of dutiable values. Except as provided in Section 2.3(c), Kissei shall be responsible for obtaining all exportation and importation licenses or other authorizations.

11.9 Severability. If, for any reason, any part of this Supply Agreement is adjudicated invalid, unenforceable, or illegal by a court of competent jurisdiction, such adjudication shall not, to the extent feasible, affect or impair, in whole or in part, the validity, enforceability, or legality of any remaining portions of this Supply Agreement. All remaining portions shall remain in full force and effect as if the original Supply Agreement had been executed without the invalidated, unenforceable, or illegal part.

11.10 No Waiver. The failure of a Party to insist upon strict performance of any provision of this Supply Agreement or to exercise any right arising out of this Supply Agreement shall neither impair that provision or right nor constitute a waiver of that provision or right, in whole or in part, in that instance or in any other instance. Any waiver by a Party of a particular provision or right shall be in writing, shall be as to a particular matter and, if applicable, for a particular period of time and shall be signed by such Party.

11.11 Relationship Between the Parties. The Parties' relationship, as established by this Supply Agreement together with the Collaboration and License Agreement, is solely that of independent contractors. This Supply Agreement does not create any partnership, joint venture, or similar business relationship between the Parties.

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Neither Party is a legal representative of the other Party and neither Party can assume or create any obligation, representation, warranty, or guarantee, express or implied, on behalf of the other Party for any purpose whatsoever.

11.12 Counterparts; Electronic or Facsimile Signatures. This Supply Agreement may be executed in any number of counterparts, each of which shall be an original, but all of which together shall constitute one instrument. This Supply Agreement may be executed and delivered electronically or by facsimile and upon such delivery such electronic or facsimile signature will be deemed to have the same effect as if the original signature had been delivered to the other Party.

{Signature Page Follows}

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In Witness Whereof, the Parties hereto have caused this **Supply Agreement** to be executed and entered into by their duly authorized representatives as of the Effective Date.

Rigel Pharmaceuticals, Inc.

Kissei Pharmaceutical Co. Ltd.

By: /s/ Raul R. Rodriguez

By: /s/ Mutsuo Kanzawa

Name: Raul R. Rodriguez

Name: Mutsuo Kanzawa

Title: President and CEO

Title: Chairman and CEO

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LIST OF EXHIBITS

Exhibit A: **Compound**

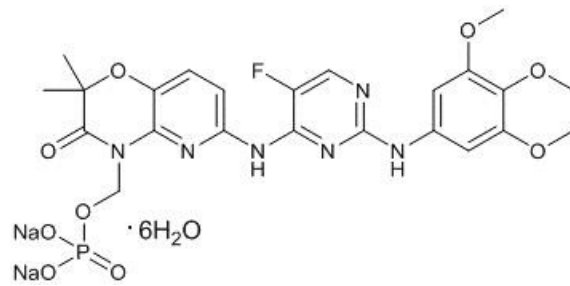
Exhibit B: **Form of Order Forecast**

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Exhibit A: Compound

fostamatinib disodium hexahydrate ("Compound")

Chemical Name: disodium (6-[[5-fluoro-2-(3,4,5-trimethoxyanilino)pyrimidin-4-yl]amino]-2,2-dimethyl-3-oxo-pyrido[3,2-b][1,4]oxazin-4-yl)methyl phosphate hexahydrate



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[*]

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CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the following Registration Statements:

- (1) Registration Statements (Form S-8 Nos. 333-51184, 333-106532, 333-125895 and 333-148132) pertaining to the 2000 Equity Incentive Plan, the 2000 Employee Stock Purchase Plan and the 2000 Non-Employee Directors' Stock Option Plan of Rigel Pharmaceuticals, Inc.,
- (2) Registration Statements (Form S-8 Nos. 333-155031 and 333-168495) pertaining to the 2000 Equity Incentive Plan and the 2000 Non-Employee Directors' Stock Option Plan of Rigel Pharmaceuticals, Inc.,
- (3) Registration Statement (Form S-8 No. 333-134622) pertaining to the 2000 Equity Incentive Plan and 2000 Employee Stock Purchase Plan of Rigel Pharmaceuticals, Inc.,
- (4) Registration Statement (Form S-8 No. 333-72492) pertaining to the 2001 Non-Officer Equity Incentive Plan of Rigel Pharmaceuticals, Inc.,
- (5) Registration Statements (Form S-8 Nos. 333-107062, 333-139516 and 333-196535) pertaining to the 2000 Employee Stock Purchase Plan of Rigel Pharmaceuticals, Inc.,
- (6) Registration Statement (Form S-8 No. 333-111782) pertaining to the 2000 Equity Incentive Plan of Rigel Pharmaceuticals, Inc.,
- (7) Registration Statements (Form S-8 Nos. 333-175977 and 333-189523) pertaining to the 2011 Equity Incentive Plan, the 2000 Equity Incentive Plan and the 2000 Non-Employee Directors' Stock Option Plan of Rigel Pharmaceuticals, Inc.,
- (8) Registration Statement (Form S-8 Nos. 333-212878 and 333-183130) pertaining to the 2011 Equity Incentive Plan of Rigel Pharmaceuticals, Inc.,
- (9) Registration Statements (Form S-3 Nos. 333-203956, 333-220821 and 333-223564) of Rigel Pharmaceuticals, Inc. and in the related Prospectuses,
- (10) Registration Statements (Form S-8 Nos. 333-214370, 333-216516 and 333-221400) pertaining to the Rigel Pharmaceuticals, Inc. Inducement Plan,
- (11) Registration Statement (Form S-8 No. 333-219610) pertaining to the 2000 Non-Employee Directors' Stock Option Plan and the 2011 Equity Incentive Plan of Rigel Pharmaceuticals, Inc., and
- (12) Registration Statement (Form S-8 No. 333-226700) pertaining to the 2018 Equity Incentive Plan and the Inducement Plan of Rigel Pharmaceuticals, Inc.;

of our reports dated February 28, 2019, with respect to the financial statements of Rigel Pharmaceuticals, Inc. and the effectiveness of internal control over financial reporting of Rigel Pharmaceuticals, Inc. included in this Annual Report (Form 10-K) of Rigel Pharmaceuticals, Inc. for the year ended December 31, 2018.

/s/ Ernst & Young LLP
Redwood City, California
February 28, 2019

CERTIFICATIONS

I, Raul R. Rodríguez, certify that:

1. I have reviewed this Annual Report on Form 10-K of Rigel Pharmaceuticals, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 28, 2019

/s/ Raul R. Rodríguez
Raul R. Rodríguez
Chief Executive Officer

CERTIFICATIONS

I, Dean L. Schorno, certify that:

1. I have reviewed this Annual Report on Form 10-K of Rigel Pharmaceuticals, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 28, 2019

/s/ Dean L. Schorno
Dean L. Schorno
Executive Vice President and Chief Financial Officer

CERTIFICATION

Pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350), Raul R. Rodriguez, Chief Executive Officer of Rigel Pharmaceuticals, Inc. (the "Company"), and Dean L. Schorno, Executive Vice President and Chief Financial Officer of the Company, each hereby certifies that, to the best of his knowledge:

1. The Company's Annual Report on Form 10-K for the period ended December 31, 2018, to which this Certification is attached as Exhibit 32.1 (the "Annual Report") fully complies with the requirements of Section 13(a) or Section 15(d) of the Exchange Act; and
2. The information contained in the Annual Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

In Witness Whereof, the undersigned have set their hands hereto as of February 28, 2019.

/s/ Raul R. Rodriguez

Raul R. Rodriguez
Chief Executive Officer

/s/ Dean L. Schorno

Dean L. Schorno
Executive Vice President and Chief Financial Officer

This certification accompanies the Form 10-K to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of Rigel Pharmaceuticals, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Form 10-K), irrespective of any general incorporation language contained in such filing.
