

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

FORM 10-K

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

For the fiscal year ended December 31, 2019

OR

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

For the transition period from _____ to _____

Commission file number: 001-38997

RAPT THERAPEUTICS, INC.

(Exact name of Registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

47-3313701

(I.R.S. Employer Identification No.)

561 Eccles Avenue

South San Francisco, California 94080

(Address of principal executive offices and zip code)

Registrant's telephone number, including area code: (650) 489-9000

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

Title of Each Class of Securities Registered

Trading Symbol

Name of Each Exchange on Which Registered

Common Stock, par value \$0.0001 per share

RAPT

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 and posted on its corporate Website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the Registrant was required to submit and post such files). YES NO

Indicate by check mark 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

Non-accelerated filer

Accelerated filer

Smaller reporting company

Emerging growth company

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

Indicate by check mark whether the Registrant is a shell company (as defined in Rule 12b-2 of the Act). YES NO

The aggregate market value of the common stock held by non-affiliates of the Registrant, based on the closing price of a share of common stock on October 31, 2019 as reported by the Nasdaq Global Market on such date was approximately \$187.4 million. The Registrant has elected to use October 31, 2019, which was the initial trading date on the Nasdaq Global Market, as the calculation date because on June 28, 2019 (the last business day of the Registrant's most recently completed second fiscal quarter), the Registrant was a privately held company. This calculation does not reflect a determination that certain persons are affiliates of the Registrant for any other purpose.

As of March 20, 2020, the number of outstanding shares of the Registrant's common stock, par value \$0.0001 per share, was 24,334,288.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Registrant's Definitive Proxy Statement for the 2020 Annual Meeting of Stockholders to be filed with the U.S. Securities and Exchange Commission pursuant to Regulation 14A within 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K are incorporated by reference in Part III, Items 10-14 of this Annual Report on Form 10-K.

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Unless the context suggests otherwise, references in this Annual Report on Form 10-K (the “Annual Report”) to “us,” “our,” “RAPT,” “RAPT Therapeutics,” “we,” the “Company” and similar designations refer to RAPT Therapeutics, Inc. and, where appropriate, its subsidiary.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report contains forward-looking statements that involve risks, uncertainties and assumptions that, if they never materialize or prove incorrect, could cause our results to differ materially from those expressed or implied by such forward-looking statements. The statements contained in this Annual Report that are not purely historical are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. Forward-looking statements are often identified by the use of words such as, but not limited to, “anticipate,” “believe,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “potential,” “predict,” “project,” “should,” “will,” “would” or the negative of those terms, and similar expressions that convey uncertainty of future events or outcomes to identify these forward-looking statements. Any statements contained herein that are not statements of historical facts may be deemed to be forward-looking statements. Forward-looking statements in this Annual Report include, but are not limited to, statements about:

- estimates of our total addressable market, future revenue, expenses, capital requirements and our needs for additional financing;
- the initiation, cost, timing, progress and results of research and development activities, preclinical or and clinical trials with respect to FLX475, RPT193 and potential future drug candidates;
- our ability to identify, develop and commercialize drug candidates;
- our ability to advance FLX475, RPT193 or other future drug candidates into, and successfully complete, preclinical studies and clinical or field trials;
- our ability to obtain and maintain regulatory approval of FLX475, RPT193 or other future drug candidates, and any related restrictions, limitations and/or warnings in the label of an approved drug candidate;
- our ability to develop and expand our drug discovery and development engine;
- our ability to identify drug candidates using our drug discovery and development engine;
- our ability to obtain funding for our operations;
- our ability to obtain and maintain intellectual property protection for our technology and any of our drug candidates;
- our ability to successfully commercialize any of our drug candidates;
- the rate and degree of market acceptance of any of our drug candidates;
- regulatory developments in the United States and international jurisdictions;
- potential liability lawsuits and penalties related to our technology, our drug candidates and our current and future relationships with third parties;
- our ability to attract and retain key scientific and management personnel;
- our ability to effectively manage the growth of our operations;
- our ability to contract with third-party suppliers and manufacturers and their ability to perform adequately under those arrangements;
- our ability to compete effectively with existing competitors and new market entrants;
- our expectations regarding uses of proceeds from our initial public offering and our follow-on offering;
- potential effects of extensive government regulation;
- our financial performance;
- our expectation regarding the time during which we will be an emerging growth company under the JOBS Act;

- the volatility of the trading price of our common stock; and
- other risks and uncertainties, including those listed under the caption “Risk Factors.”

These statements are based on the beliefs and assumptions of our management, which are in turn based on information currently available to management. Such forward-looking statements are subject to risks, uncertainties and other important factors that could cause actual results and the timing of certain events to differ materially from future results expressed or implied by such forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed in the section entitled “*Risk Factors*” included under Part I, Item 1A below. Furthermore, such forward-looking statements speak only as of the date of this Annual Report on Form 10-K. Except as required by law, we undertake no obligation to update any forward-looking statements to reflect events or circumstances after the date of such statements.

This Annual Report on Form 10-K also contains estimates, projections and other information concerning our industry, our business and the markets for certain drugs, including data regarding the estimated size of those markets, their projected growth rates and the incidence of certain medical conditions. Information that is based on estimates, forecasts, projections or similar methodologies is inherently subject to uncertainties, and actual events or circumstances may differ materially from events and circumstances reflected in this information. Unless otherwise expressly stated, we obtained this industry, business, market and other data from reports, research surveys, studies and similar data prepared by third parties, industry, medical and general publications, government data and similar sources. In some cases, we do not expressly refer to the sources from which this data is derived. In that regard, when we refer to one or more sources of this type of data in any paragraph, you should assume that other data of this type appearing in the same paragraph is derived from the same sources, unless otherwise expressly stated or the context otherwise requires.

Trademarks

This Annual Report on Form 10-K includes trademarks, service marks and trade names owned by us or other companies. All trademarks, service marks and trade names included in this Annual Report on Form 10-K are the property of their respective owners.

Item 1. Business.

Overview

We are a clinical-stage immunology-based biopharmaceutical company focused on discovering, developing and commercializing oral small molecule therapies for patients with significant unmet needs in oncology and inflammatory diseases. Utilizing our proprietary drug discovery and development engine, we are developing highly selective small molecules designed to modulate the critical immune responses underlying these diseases. We have discovered and advanced into clinical development two unique drug candidates each targeting C-C motif chemokine receptor 4 (“CCR4”): FLX475 for the treatment of a range of tumors, and RPT193 for the treatment of allergic inflammatory diseases. We are also pursuing a range of targets, including general control nonderepressible 2 (“GCN2”) and hematopoietic progenitor kinase 1 (“HPK1”), that are in the discovery stage of development.

Through our team’s deep expertise in immunology and drug discovery, supported by advanced computational biology, we are developing the ability to exploit difficult targets, including through proprietary know-how. This proprietary drug discovery and development engine is built upon four key pillars: (i) computationally-driven disease target and biomarker identification; (ii) efficient design of small molecule drug properties; (iii) data-driven patient selection; and (iv) nimble clinical execution. We have leveraged this engine to identify and target CCR4, a key driver of the immune response in both oncology and allergic inflammatory disease.

Our lead oncology drug candidate, FLX475, is designed to selectively inhibit the migration of immunosuppressive regulatory T cells (“T_{reg}”) into tumors. We are currently in the Phase 2 portion of a seamless Phase 1/2 clinical trial to evaluate FLX475 as a monotherapy and in combination with pembrolizumab (marketed as Keytruda®) in patients with several types of “charged” tumors and we anticipate results from the Phase 2 portion of the trial could provide clinical proof-of-concept (“PoC”). While we originally intended to provide an initial data readout from the Phase 1/2 trial in the second quarter of 2020, we now expect that timeline will be delayed due to circumstances and uncertainties created by the COVID-19 global pandemic.

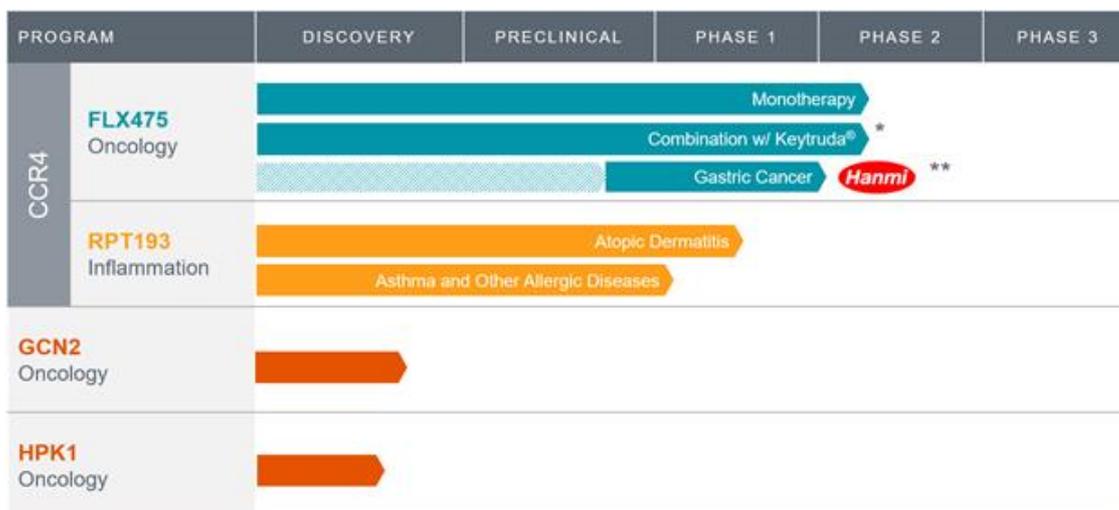
Our lead inflammation drug candidate, RPT193, is designed to selectively inhibit the migration of type 2 T helper cells (“Th2 cells”) into allergically-inflamed tissues. Th2 cells are clinically validated drivers of allergic diseases along the “atopic march” such as atopic dermatitis (“AD”), asthma, chronic urticaria (skin rash), allergic conjunctivitis, chronic rhinosinusitis and eosinophilic esophagitis (inflammation of the esophagus). We believe that RPT193, if approved by the FDA, could fill an unmet medical need for the treatment of allergic disorders with the convenience of once-daily oral dosing. Due to circumstances and uncertainties created by the COVID-19 global pandemic, we have temporarily paused enrollment in the Phase 1b portion of our seamless Phase 1 trial of RPT193 in patients with AD. We will continue to monitor the situation and intend to restart enrollment in the clinical trial once circumstances related to the pandemic clarify.

We hold worldwide rights to each of our drug candidates, with the exception of the exclusive license granted to Hanmi Pharmaceutical LTD (“Hanmi”) for FLX475 in the Republic of Korea, the Republic of China (Taiwan) and the People’s Republic of China, including the special administrative regions of Macau and Hong Kong (the “Hanmi Territory”).

In November 2019, we completed our initial public offering (“IPO”), pursuant to which we issued an aggregate of 3,427,360 shares of our common stock at an offering price of \$12.00 per share. Immediately prior to the closing of our IPO, all outstanding shares of our convertible preferred stock converted into 17,467,184 shares of our common stock. In aggregate, the shares issued in our IPO generated approximately \$33.8 million in net proceeds after deducting underwriting discounts and other offering related costs.

We incorporated in March 2015 in the State of Delaware under the name FLX Bio, Inc. and changed our name to RAPT Therapeutics, Inc. in May 2019. Our corporate headquarters are in South San Francisco, California.

Diversified Pipeline



* Clinical collaboration with Merck

** Regional collaboration and license with Hanmi in the Hanmi Territory – Phase 2 gastric cancer trial to be initiated after combination recommended Phase 2 dose (RP2D) selected

Our Strategy

- **Advance our lead oncology drug candidate, FLX475, through clinical development to commercialization in “charged” tumor types, which represent cancer types we believe are most likely to respond to FLX475.** We expect to rapidly evaluate FLX475’s efficacy in multiple tumor types both as a monotherapy and in combination with other immuno-oncology agents such as programmed cell death 1 (“PD-1”) checkpoint inhibitor. Our goal is to expeditiously progress into registration trials to ultimately enable treatment of cancer patients for whom current treatments are inadequate.
- **Enhance the impact of our lead inflammation drug candidate, RPT193, by expanding development across multiple allergic diseases.** We are initially developing RPT193 for AD because the characteristics of the disease present an opportunity to rapidly demonstrate RPT193’s anti-inflammatory effect. We believe RPT193’s anti-inflammatory effect, along with convenient oral administration and a good safety profile, would potentially translate clinically in a variety of allergic diseases beyond AD, including allergic asthma, chronic urticaria, chronic rhinosinusitis, allergic conjunctivitis and eosinophilic esophagitis.
- **Develop and advance a preclinical GCN2 inhibitor into clinical trials.** We view our preclinical programs as important drivers of long-term growth and stability of our company. Our goal is to rapidly advance our programs to generate validating preclinical data that warrant clinical development.
- **Expand our pipeline by leveraging our proprietary drug discovery and development engine and small molecule expertise.** We believe there are additional identifiable targets that will be important to fundamentally modulating the immune response in the treatment of cancer and inflammatory diseases. We will continue to invest in our proprietary discovery and development engine and investigate several of our identified targets as well as generate additional target and drug candidates, including a future HPK1 drug candidate.
- **Utilize collaborations in support of our long-term goals.** We plan to selectively use collaborations and partnerships as strategic tools to maximize the value of our drug candidates.

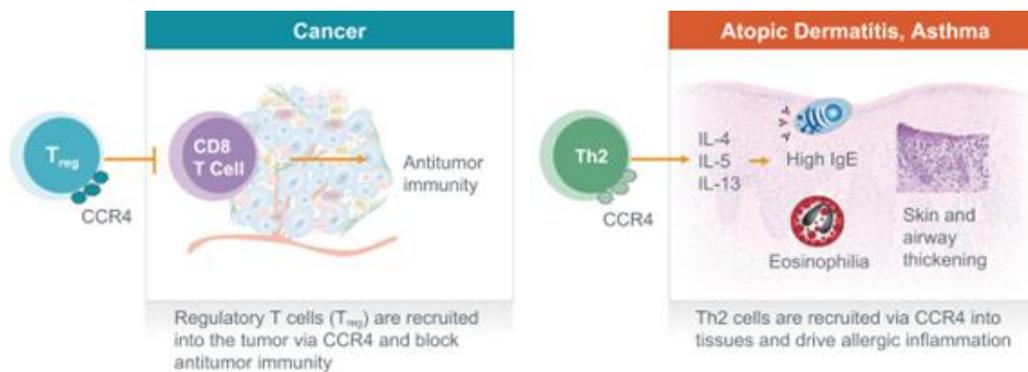
Our CCR4 Franchise

Our proprietary drug discovery and development engine has identified the cell-surface receptor CCR4 as a drug target that potentially has broad applicability in oncology and inflammatory diseases. T cells, a type of white blood cell, play crucial roles in immunological memory, regulation and responses. Two T cells of clinical interest are T_{reg} and Th2 cells, both of which express CCR4, a cell-surface receptor that binds to chemokines that orchestrate cell migration and homing throughout the body. The two chemokines that bind to this CCR4 receptor, C-C motif chemokine ligand 17 (“CCL17”) and C-C motif chemokine ligand 22 (“CCL22”), are over expressed and secreted by tumors and allergically inflamed tissues. This over expression allows for the theoretical manipulation of CCR4 and its two T cell subtypes to address diseases across the immunological continuum spanning underactive to overactive immune responses in oncology and allergic inflammatory disease.

In cancer, CCR4 chemokines recruit immunosuppressive T_{reg} to tumor sites. T_{reg} represent a dominant pathway for downregulating the immune response, and thus may limit the effectiveness of currently available therapies such as checkpoint inhibitors. CCR4 is highly expressed on T_{reg} and not highly expressed or used by effector or cytotoxic T cells, suggesting that targeting CCR4 may selectively block T_{reg} migration into tumors. We believe that a therapeutic drug that specifically inhibits T_{reg} migration into tumors has the potential to bring therapeutic benefit to patients across a wide spectrum of tumors in a manner similar to other immuno-oncology therapies that have been shown to be effective against multiple tumor types, while also potentially deepening or broadening clinical responses to these therapies, all without the serious risks associated with current CCR4 approaches that systemically deplete T cells and broadly suppress the immune system.

In allergic inflammatory diseases such as AD and asthma, CCR4 chemokines recruit Th2 cells to inflamed tissues. Once these Th2 cells enter certain tissues, such as the skin or the airways in the lung, they secrete products known to drive the inflammatory response. In allergic asthma, Th2 cells have been shown to play a pivotal role in airway inflammatory response and airway remodeling, and CCR4 is essential in recruiting Th2 cells to asthmatic airways. Similarly, murine models and ex vivo studies strongly suggest that CCR4 plays a critical role in allergic inflammation in AD as blocking the migration of Th2 cells has been shown to reduce allergic inflammation in the skin and the lung. We believe that CCR4 antagonists have the potential to suppress allergic inflammation in patients in a clinically meaningful manner.

CCR4 Drives Tumor Progression and Allergic Inflammation

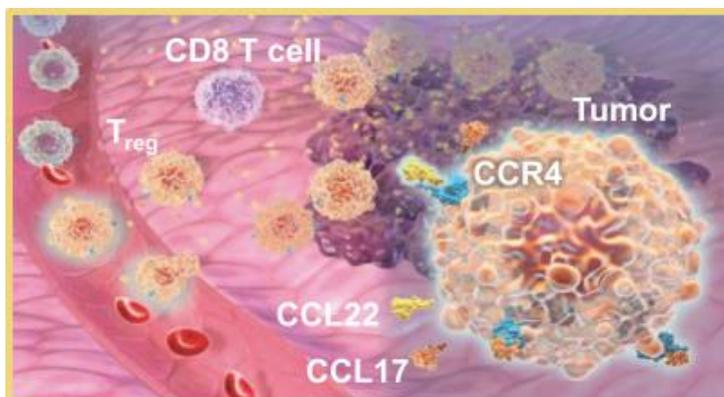


Our Lead Oncology Drug Candidate—FLX475

Our lead oncology drug candidate, FLX475, is an oral small molecule CCR4 antagonist that is designed to selectively inhibit the migration of immunosuppressive T_{reg} into tumors while sparing T_{reg} in healthy tissues and without negatively impacting effector immune cells, which we believe may decrease the likelihood of side effects.

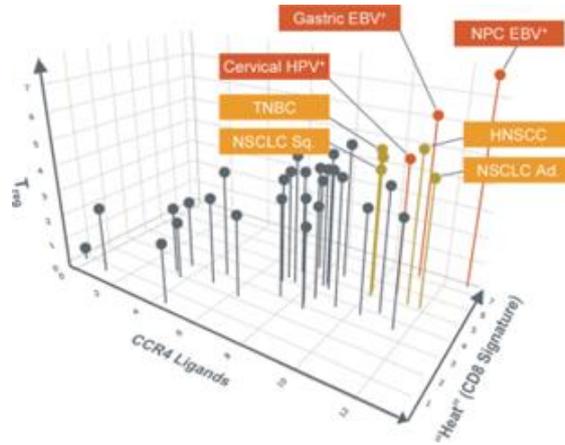
We own an issued U.S. composition of matter patent directed to FLX475 that is scheduled to expire in 2037 (not including any applicable extensions, if approved). We have entered into a collaboration and license agreement with Hanmi, whereby we granted Hanmi the exclusive rights to develop, manufacture and commercialize FLX475 in the Hanmi Territory.

FLX475: Highly Selective Approach for Targeting Tumor T_{reg}



We are developing FLX475 for the treatment of a broad range of “charged” tumors, which represent cancer types we believe are most likely to respond to FLX475. Our proprietary drug discovery and development engine has identified certain tumors in which the abundance of T_{reg} is likely to be a cause of immune suppression. We refer to these tumors as “charged,” as defined by their expression of high levels of (i) CCR4 ligands, (ii) T_{reg} and (iii) CD8+ effector cells. Tumors with high levels of these three parameters imply they have the necessary components to generate a potent immune response; however, the presence of T_{reg} dampens this response. We have identified numerous tumors as being charged, including non-small cell lung cancer (“NSCLC”), triple negative breast cancer (“TNBC”), head and neck squamous cell carcinoma (“HNSCC”), nasopharyngeal cancer (“NPC”), gastric cancer, certain Hodgkin (“HL”) and non-Hodgkin lymphomas (“NHL”), and cervical cancer. The data presented in the diagram below was derived from an in-house analysis of The Cancer Genome Atlas Database and additional published sources and confirmed by us through in situ hybridization of over 400 tumor microarray samples.

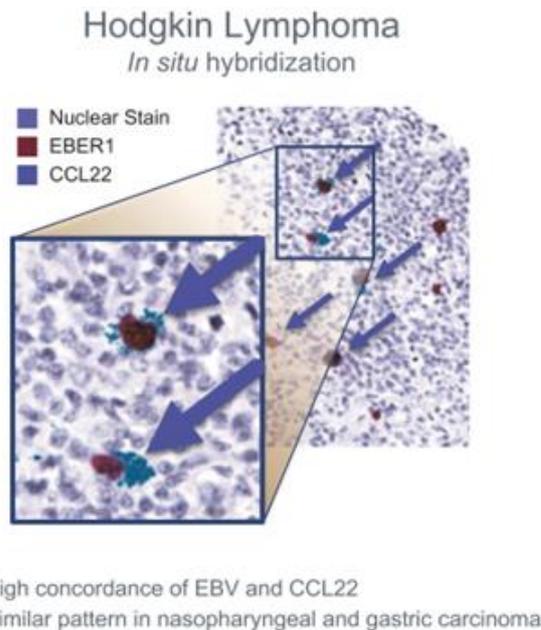
Identification and Characterization of “Charged” Tumors



The graph above reflects a logarithmic scale on each axis.

Additionally, we have discovered that the presence of oncogenic viruses, such as Epstein-Barr virus (“EBV”) (as shown in the diagram below) and human papillomavirus (“HPV”), is associated with tumors that are highly “charged” and can be prospectively selected. In preclinical studies, we have demonstrated an association between EBV and CCR4 ligand expression, which is believed to be causal to T_{reg} migration. These studies are further validated by scientific publications linking EBV to T_{reg} tumor infiltration in HL, gastric cancer and NPC.

“Charged” Tumors Include EBV-Associated Tumors



EBER1 = EBV-encoded RNA1

Oncology Market Overview

Significant progress in cancer treatment has been made recently with the development of highly targeted and immuno-oncology-based therapies. Remarkable clinical response rates have been observed with targeted therapies in selective patient populations, while in a subset of a broad range of tumors, immuno-oncology products have demonstrated durable responses and possible cures. Although true breakthroughs have been achieved, often only a very narrow segment of the patient population can be treated or are responsive to these novel therapies. Hence, there remains a significant unmet medical need for a majority of tumor types including “charged” tumors in which we intend to develop FLX475 either as a monotherapy or in combination with immune checkpoint inhibitors such as pembrolizumab or other agents.

A Large Proportion of Multiple Tumor Types are “Charged”

Tumor Type	Prevalence* (U.S.)	Virally Associated	Percent Viral	Estimated Percent “Charged”**
Non-Small Cell Lung Cancer	268,600	N/A		60-80%
Triple Negative Breast Cancer	145,500	N/A		
Head and Neck Squamous Cell Carcinoma	143,000	✓	25%-60%	>90% of virally associated tumors
Nasopharyngeal Cancer	105,000***	✓	>95%	
Hodgkin Lymphoma	28,500	✓	30%-50%	
Cervical Cancer	46,800	✓	>95%	
Non-Hodgkin Lymphoma	225,000****	✓	Widely variable among subtypes	

* Based on 2012 Globocan registries 5-year prevalence (2008-2012 estimates)

** Data from in-house analysis

*** Worldwide prevalence

**** Based on 2018 Globocan registries 5-year prevalence (2013-2018 estimates)

Non-Small Cell Lung Cancer

NSCLC is the most common type of lung cancer, representing 84% of all lung cancer cases in the United States. Squamous cell carcinoma (“NSCLC Sq.”), adenocarcinoma (“NSCLC Ad.”) and large cell carcinoma are all subtypes of NSCLC. Lung cancer is the leading cause of cancer death for both men and women. In 2019, an estimated 142,670 people in the United States will die from lung cancer. There are approximately 228,000 diagnoses of lung cancer annually in the United States. Despite the availability of numerous therapies, the prognosis remains poor, with an overall five-year survival rate for all patients diagnosed with NSCLC as low as 19.4%.

Standard therapies include surgery, chemotherapy and radiation therapy. Up to a third of NSCLC patients have tumors with mutations in genes (such as epidermal growth factor receptor and anaplastic lymphoma kinase) for which molecularly-targeted therapies have been approved (such as erlotinib, gefitinib or crizotinib). However, these treatments usually do not result in long-term remissions, and the tumors generally return and become resistant to therapy.

Immunotherapies that target PD-1 or the PD-1 ligand (“PD-L1”) (e.g. pembrolizumab, nivolumab and atezolizumab) have recently been approved for the treatment of patients with advanced or metastatic NSCLC either alone (for previously untreated or treated patients), or in combination with chemotherapy (for previously untreated patients). While treatment with these immunotherapy agents in NSCLC has resulted in promising activity ranging from approximately 15-30% overall response rates in previously treated patients to approximately 40-60% response rates in combination with chemotherapy in previously untreated patients. However, approximately 50-80% of patients do not respond to these therapies, indicating significant unmet medical need remains.

Triple-Negative Breast Cancer

Breast cancer is the most common type of invasive cancer among women and the second leading cause of cancer death. The Centers for Disease Control and Prevention (“CDC”) estimates that there are approximately one million women in the United States living with breast cancer that has been diagnosed within the past five years. In 2019 there will be an estimated 271,270 new diagnoses and 42,260 breast cancer deaths in the United States each year and 12.4% of women will develop breast cancer in their lifetime. Effective therapies have been developed that target tumors containing at least one of three protein receptors: estrogen receptor, progesterone receptor and human epidermal growth factor receptor 2 (“HER2”).

Approximately 15% to 20% of breast cancers, however, do not express any of these three receptors and are referred to as triple-negative breast cancer (“TNBC”). These tumors have a more aggressive phenotype and a poorer prognosis due to the high propensity for metastatic progression and absence of specific targeted treatments. Prior to the recent anti-PD-L1 approval, the only approved targeted therapy for TNBC was olaparib (marketed as Lynparza) for the small minority of patients with mutations in the BRCA1 or BRCA2 genes. The five-year survival rate for TNBC has been reported to be 62.1%.

However, there is also potential for immuno-oncology agents in TNBC based on its high tumor mutation burden and the finding of elevated levels of PD-L1 in up to 26% of primary TNBCs. Treatment of previously untreated metastatic TNBC patients can result in approximately 20-25% response to PD-(L)1 checkpoint inhibitors. The anti-PD-L1 antibody atezolizumab (marketed as Tecentriq) was recently granted accelerated approval in combination with chemotherapy for the initial treatment of women with advanced TNBC expressing PD-L1. However, in previously treated TNBC, response rates to anti-PD-L1 agents alone have generally been less than 10%, representing substantial need for novel and improved therapies for advanced or metastatic TNBC.

Head and Neck Squamous Cell Carcinoma

HNSCC represent a broad category of cancers that arise from different tissues that have been grouped anatomically in the head and neck region. HNSCC accounts for about 4% of all cancers in the United States with an estimated 53,000 new cases and 10,860 deaths in 2019. The five-year survival rate for people with head and neck cancer varies and depends on several factors making an overall five-year survival rate difficult to track accurately. Most cases of HNSCC are considered to be related to use of tobacco or alcohol or exposure to HPV.

Treatment for HNSCC can include surgery, radiation therapy, chemotherapy, targeted therapy or a combination of treatments. These tumors are believed to express a fair number of tumor-specific antigens, making them attractive targets for immunotherapies. Nivolumab and pembrolizumab have been approved for recurrent and metastatic HNSCC based on their ability to shrink tumors and increase median survival. However, treatment with either agent led to partial or complete tumor shrinkage in approximately 15% of treated HNSCC patients, indicating that over 80% of patients do not respond to therapy and that a significant unmet clinical need remains.

Nasopharyngeal Cancer

NPC is a cancer that forms in the tissues of the nasopharynx which is the upper part of the throat behind the nose. It is estimated that approximately 129,000 NPC patients worldwide were diagnosed and 72,900 NPC patients died in 2018. Approximately 39% of patients are diagnosed with late stage NPC, in which the five-year survival rate is 38%. While there is no known cause of NPC, EBV is associated with a vast majority of cases.

Standard treatment for NPC involves radiation therapy, chemotherapy and surgery. There is some evidence that NPC can be treated with immunology agents. A Phase 1b trial in patients with recurrent or metastatic NPC found an objective response rate of 26% with a PD-1 inhibitor pembrolizumab. While promising, novel therapies for NPC are still needed to improve overall responses and prolong survival.

Hodgkin Lymphoma

Hodgkin lymphoma, formerly called Hodgkin's disease, is a cancer of the lymphatic system that arises in immune cells called B cells. HL accounts for approximately 10% of all lymphomas and approximately 0.6% of all cancers diagnosed in the developed world annually. Approximately 8,100 people in the United States are estimated to be diagnosed with HL in 2019, with an estimated 1,000 deaths. EBV has been associated with approximately 30% to 50% of HL.

While approximately 75% of patients can be cured with standard therapies including combination chemotherapy, radiation therapy, high-dose chemotherapy and stem cell transplantation, novel therapies are being developed to further improve clinical outcomes. The CD30-directed antibody-drug conjugate brentuximab vedotin (marketed as Adcetris) has been approved for certain adult patients with classical HL ("cHL"). Nivolumab and pembrolizumab are immunotherapies that have been granted accelerated approval for the treatment of patients with cHL that has recurred or progressed after multiple previous treatments, including autologous transplantation and post-transplant treatment with brentuximab vedotin. For both pembrolizumab and nivolumab, the overall response rate in these relapsed and refractory cHL was approximately 69%. However, the average duration of response to these anti-PD-1 therapies is less than a year, signifying the need for continued advances.

Non-Hodgkin Lymphoma

NHL, another cancer of the lymphatic system, is not a single disease but rather a group of cancers affecting cells of the immune system. Although the various types of NHL have common elements, they differ in other areas, including their appearance under the microscope, their molecular features, their growth patterns, their impact on the body, and treatment. According to the National Cancer Institute, in the United States approximately 74,200 patients were diagnosed with NHL in 2018 and 19,910 patients died as a result of NHL in 2018. The five-year survival rate is 71.4%. While there is no direct cause of NHL, it is generally linked to a weakened immune system and begins when the body produces too many abnormal lymphocytes.

There is a wide range of therapies available for the treatment of NHL depending on the subtype of the disease, its aggressiveness and the patient's overall health. These include chemotherapy; radiation therapy; immunotherapy such as monoclonal antibodies; checkpoint inhibitors and chimeric antigen receptor T cells ("CAR-T cells"); targeted therapies; and stem cell transplantation. Depending upon the analysis and subtype, EBV has been associated with approximately 12% of NHL.

Cervical Cancer

Cervical cancer begins with abnormal changes in the cervical tissue. In the United States, 13,170 patients are estimated to be diagnosed with cervical cancer in 2019 with cervical cancer leading to 4,250 deaths. The five-year survival rate is 65.8%. It is almost always associated with the presence of HPV.

Advanced cervical cancer is treated by chemotherapy or radiation therapy. Pembrolizumab has been approved in those patients that express PD-L1 based on a Phase 2 trial in which the response rate was 14.3%. While the approval of pembrolizumab has been an advance in the treatment of cervical cancer, over 80% of patients do not respond to this therapy, indicating significant room for improvement.

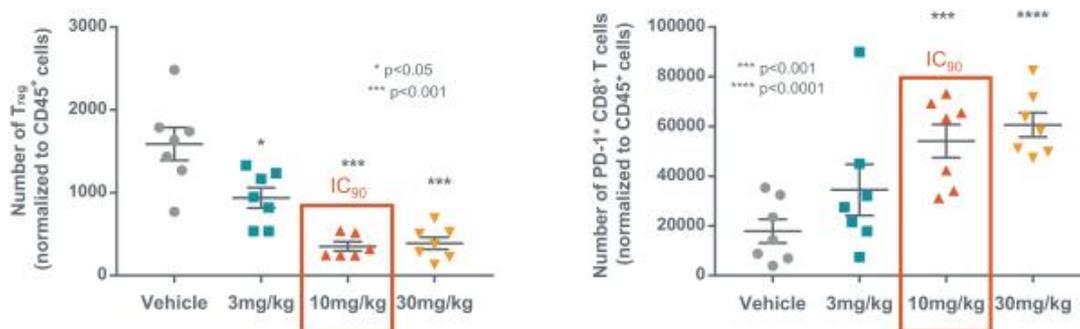
FLX475 Preclinical Data

We evaluated the mechanism of action as well as the antitumor activity of FLX475 (or a preclinical tool CCR4 antagonist) in two kinds of preclinical mouse tumor models representing the human equivalent of (i) a “charged” tumor and (ii) tumors that accumulated T_{reg} in the TME following checkpoint inhibitor treatment.

FLX475 Inhibition of T_{reg} in a Mouse Model of a “Charged” Tumor

Immunosuppressive CCR4⁺ T_{reg} migrate towards CCL17 and CCL22 which are often found to be elevated in the TME. FLX475 inhibited in a dose-dependent manner CCL22- and CCL17-induced migration of T_{reg} in cellular in vitro migration assays. Dosing of FLX475 prevented migration of T_{reg} into established tumors expressing high levels of CCR4 ligand at baseline (“charged” tumor), as represented by a Pan02 mouse tumor model. In this model, mice with established tumors were dosed with FLX475, then injected with labeled T_{reg}. The migration of these modified T_{reg} into tumors could then be easily followed and quantified. In two independent experiments with seven mice per experimental arm, FLX475 inhibited this migration in a statistically significant and dose-dependent manner ($p < 0.01$). A dose of 10 mg/kg reduced T_{reg} migration by averages of 56% and 78% in the two studies, with individual animals ranging from 42% to 85% reduction. Blocking the migration of T_{reg} into tumors also enhanced the activation and increased the number of CD8⁺ effector cells in a dose-dependent manner, with a 3-fold increase at the 10 mg/kg dose level (range from 1.7 to 4.1 fold in individual animals in one experiment). The highest level of inhibition of T_{reg} migration and increase in CD8⁺ effector cells was observed in our preclinical studies at 10 mg/kg given once daily, which achieves concentrations that inhibit 90% of in vitro T_{reg} migration (“IC₉₀”) throughout the dosing period.

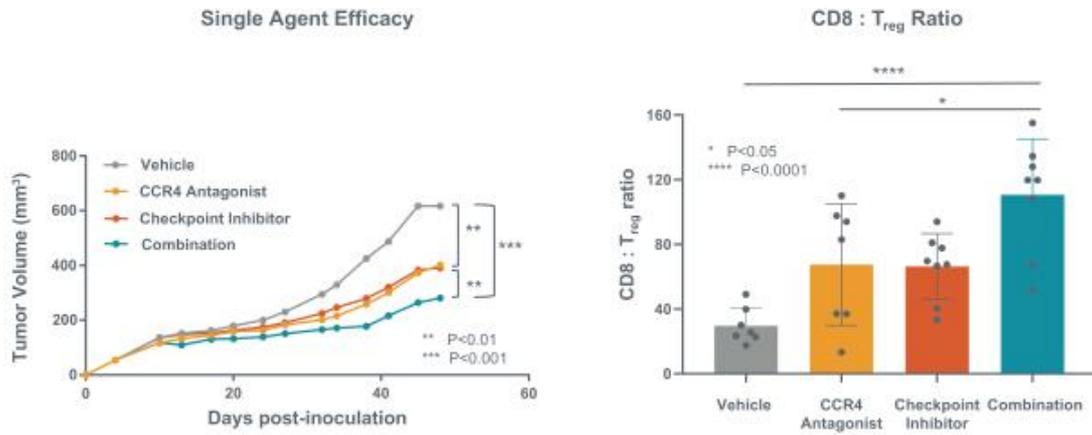
Blocking CCR4 with FLX475 Inhibits T_{reg} Migration into the Tumor



CCR4 Antagonist Single Agent Antitumor Activity in a Mouse Model of a “Charged” Tumor

The antitumor activity of a CCR4 antagonist closely related to FLX475 was assessed in the Pan02 mouse tumor model, which represents a “charged” tumor. In three independent experiments with ten mice per experimental arm, oral administration of the CCR4 antagonist demonstrated single agent reduction in tumor growth that was statistically significantly different from mice who received vehicle control ($p < 0.05$). The observed antitumor activity was similar to an immune checkpoint inhibitor in three of four experiments. Importantly, the combination of our CCR4 antagonist with the checkpoint inhibitor resulted in enhanced antitumor activity. Analysis of the TME of seven to eight mice per experimental arm treated with our CCR4 antagonist showed a statistically significant increase in the CD8 : T_{reg} ratio compared to vehicle control and similar activity compared to the checkpoint inhibitor. Consistent with the antitumor activity, combination of our CCR4 antagonist with the immune checkpoint inhibitor further increased this ratio. The increase of this ratio demonstrates a shift from an immune-suppressive to an immune-stimulatory environment. The CD8 : T_{reg} ratio is a well-established biomarker in human clinical trials and has been demonstrated to correlate with clinical outcome.

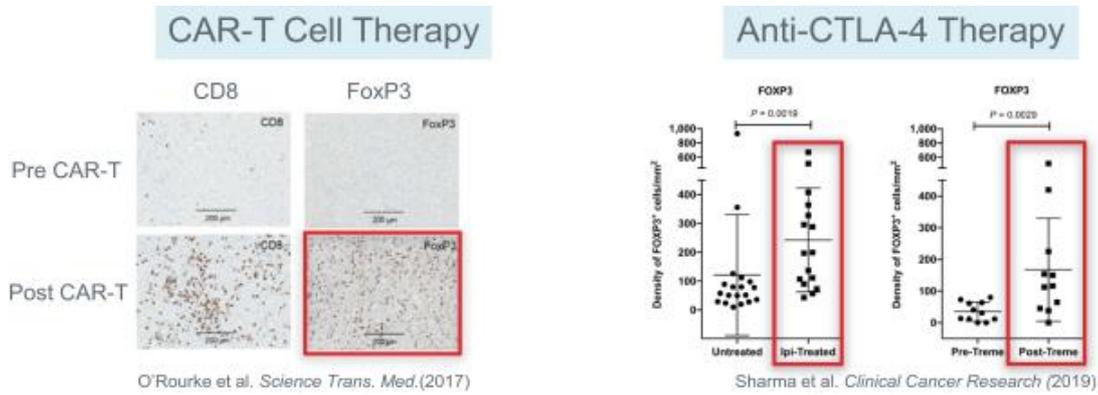
CCR4 Antagonist: Single Agent Activity in a Mouse Model of a “Charged” Tumor



CCR4 Antagonism of T_{reg} Migration Following Checkpoint Inhibitor Treatment in Mouse Model of a Non-“Charged” Tumor

Clinical studies have demonstrated the accumulation of T_{reg} in the TME following treatment with conventional therapies such as chemotherapy and radiation, as well as immune-based therapies such as CAR-T cell and checkpoint inhibitor therapies. The figure below shows several examples of T_{reg} accumulation in the TME of patients who underwent treatment with CAR-T cell or anti-CTLA-4 immune checkpoint inhibitor therapies. FoxP3 is a marker used to identify T_{reg}. Ipilimumab (Ipi) and Tremelimumab (Treme) are both anti-CTLA-4 antibodies.

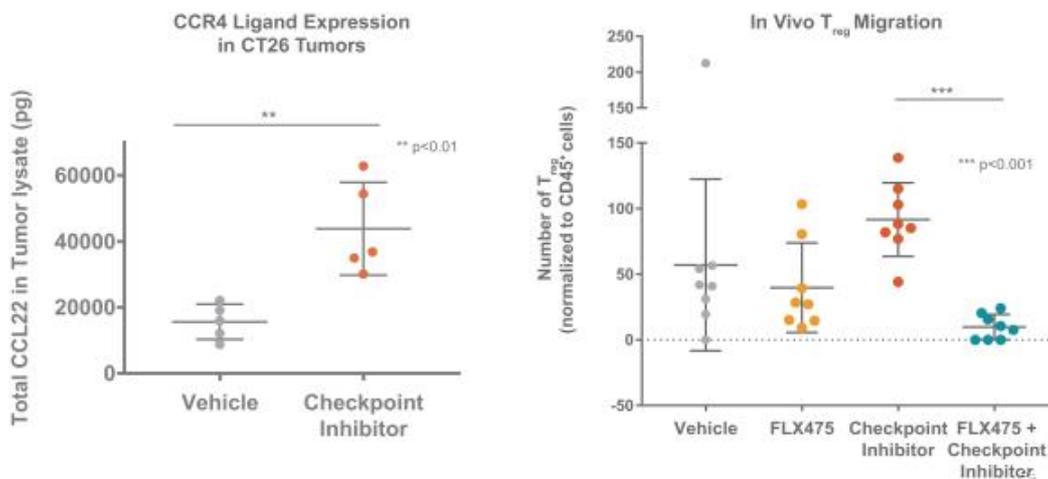
Accumulation of Treg in the TME is a General Adaptive Immune Resistance Mechanism to Treatment



Accumulation of T_{reg} has also been observed in both post anti-PD-1 and after conventional therapies such as radiation or chemotherapy

To mimic this in a preclinical tumor model, we evaluated FLX475 in a mouse tumor model that does not express high levels of CCR4 ligands, exemplified by the CT26 mouse tumor model. We observed in four independent experiments with five mice per experimental arm that the treatment with checkpoint inhibitors led to a statistically significant ($p < 0.05$) increase in the expression of CCR4 ligands with an average increase of 2.9 fold over vehicle control and a range from 1.6 to 4.3 fold. In two independent experiments with eight mice per treatment cohort we observed a 1.6-fold (range 0.8 to 2.4) increase in the number of T_{reg} that infiltrate the tumor, recapitulating the clinical observations mentioned above. We believe that the increase in the infiltration of T_{reg} upon treatment with the checkpoint inhibitor is representative of one mechanism of resistance seen in patients treated with these inhibitors. Importantly, in these two independent experiments with eight mice per experimental arm we observed that the addition of FLX475 to the checkpoint inhibitor reduced the number of T_{reg} migrating into the TME in a statistically significant manner.

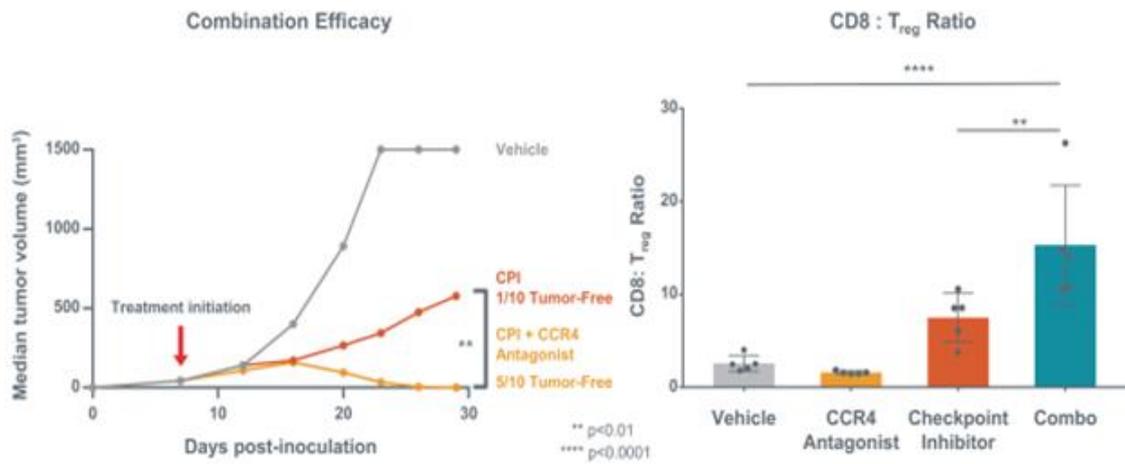
FLX475 Inhibition of T_{reg} Migration Following Checkpoint Inhibitor Treatment in a Mouse Model of a Non-“Charged” Tumor



Antitumor Activity of the Combination of a CCR4 Antagonist and Checkpoint Inhibitor in a Mouse Tumor Model

The antitumor activity of a CCR4 antagonist closely related to FLX475 in combination with an immune checkpoint inhibitor was evaluated in the CT26 mouse tumor model in five independent experiments with ten mice per experimental cohort. Single agent activity of an immune checkpoint inhibitor results in modest antitumor activity and almost no cures. However, the combination of a CCR4 antagonist and an immune checkpoint inhibitor resulted in statistically significant ($p < 0.05$) synergistic antitumor activity with 50% of all mice showing complete tumor regression. In multiple experiments, an average of 39% experienced tumor regression (0%-70% across studies). Mice treated with the combination approach were completely resistant to rechallenge with the same tumor, confirming that the antitumor effect observed during the treatment phase was immune-mediated and associated with long-term immune memory. The combination of inhibition of T_{reg} by a CCR4 antagonist with an immune checkpoint inhibitor in three independent experiments with eight mice per experimental cohort demonstrated an increase in the ratio of CD8⁺ effector T cells to T_{reg} . Previous studies have shown that this ratio is an indicator of prognosis in many cancers. Patients with low effector T cell to T_{reg} ratios have worse prognoses in cancers that include ovarian cancer, pancreatic cancer, lung cancer, glioblastoma, NHL and melanoma. We believe that the ability of a CCR4 antagonist to increase this ratio and provide therapeutic benefit will not be limited to a few select cancers, but may have broad implications across many tumor types. The ability of a CCR4 antagonist to prevent T_{reg} migration suggests that combining FLX475 with a checkpoint inhibitor may provide highly effective antitumor activity by potentially deepening or broadening responses compared to checkpoint inhibitor alone.

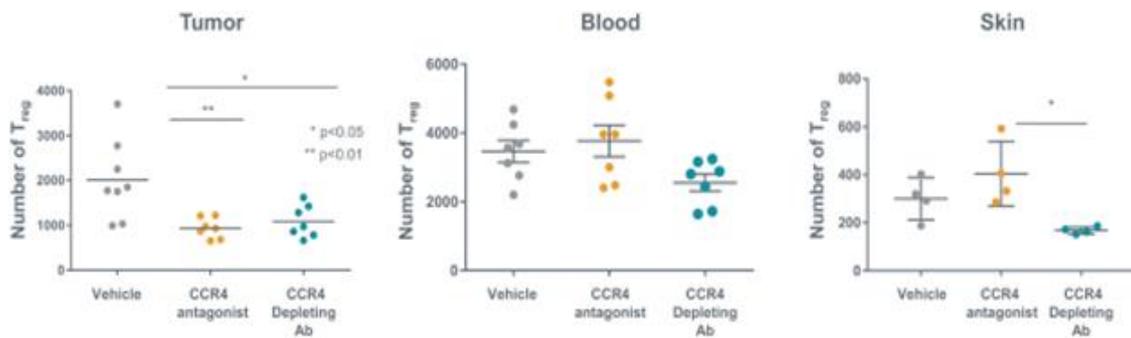
Antitumor Activity of Our CCR4 Antagonist and Checkpoint Inhibitor in Combination in a Mouse Tumor Model



Our CCR4 Antagonist Selectively Inhibits T_{reg} Migration into Tumors but not Healthy Tissues

The impact of CCR4 inhibition by a CCR4 antagonist was compared to the impact of a depleting CCR4 antibody on T_{reg} migration into the tumor and healthy tissue in a mouse tumor model, which included two independent experiments with seven mice per experimental arm. Mice with established tumors were dosed with either our CCR4 antagonist or a depleting CCR4 antibody, then injected with fluorescently labeled T_{reg} to assess the level of T_{reg} migration into the tumor and healthy tissues. Both our CCR4 antagonist and the antibody led to statistically significant ($p < 0.05$) reductions in T_{reg} that were able to infiltrate the tumor compared to untreated controls. However, in contrast to the antibody, our CCR4 antagonist did not result in depletion or inhibition of migration of T_{reg} in the blood or skin (demonstrated in two separate experiments). We believe that the tumor-selective activity of our FLX475 will enable reductions in tumor T_{reg} with a decreased likelihood of deleterious adverse events that may result from systemic depletion of all T_{reg}.

Our CCR4 Antagonist Selectively Inhibits T_{reg} Migration into Tumors but Not Healthy Tissues



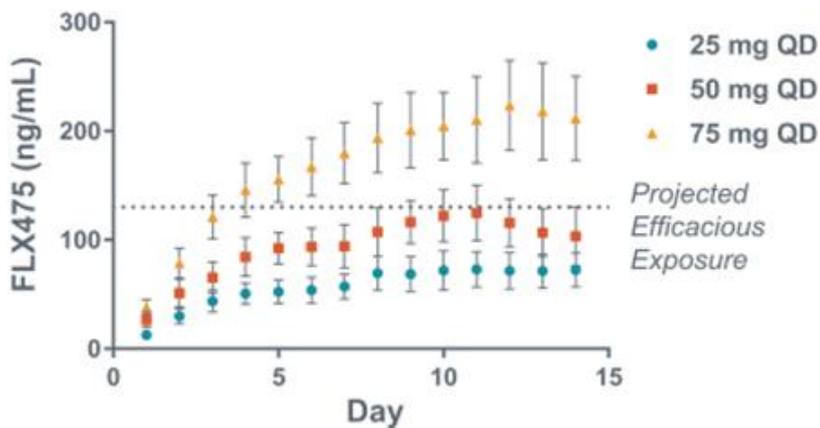
FLX475: Clinical Trials

FLX475-01: A Phase 1 Clinical Trial of FLX475 in Healthy Volunteers

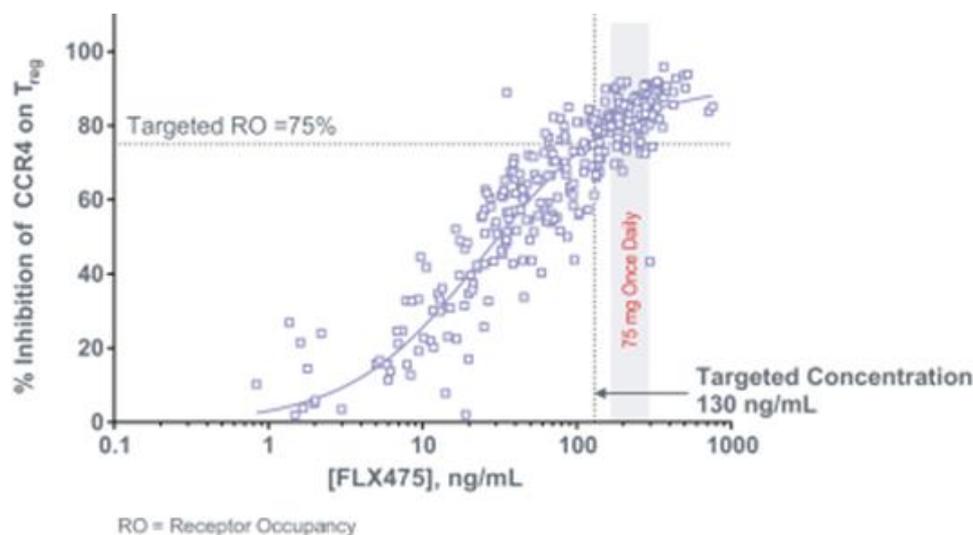
We completed a placebo-controlled, double-blind dose-escalation Phase 1 clinical trial of FLX475 in 104 healthy volunteers. Daily dosing within the single dose arm ranged between 5 mg and 1,000 mg and in the multiple dose arm between 25 mg and 150 mg a day for 14 days. We designed and conducted the healthy volunteer study in order to (i) rapidly generate PK and receptor occupancy data that allow us to identify a therapeutic dose, (ii) corroborate in humans our observed favorable preclinical safety profile and (iii) potentially allow us to accelerate the dose-escalation portion of our Phase 1/2 oncology study and drive efficiencies in our clinical development going forward. In the healthy volunteer study, FLX475 was well tolerated and demonstrated dose-dependent inhibition of CCR4 with no observed immune-related adverse events or significant clinical adverse events.

Oral dosing of FLX475 led to linear PK and a clear dose-related inhibition of CCR4 with low subject-to-subject variability. Based on analysis of the multiple dose data, at the 75 mg once-daily dose, 75% receptor occupancy was achieved in six out of six healthy volunteers, which, in our preclinical studies, corresponded with 90% inhibition of in vitro T_{reg} migration and the highest level of inhibition of in vivo T_{reg} migration and antitumor activity.

FLX475: Favorable Exposure in Healthy Volunteer Study



CCR4 Target Coverage Exceeded at 75 mg Once Daily Dosing with FLX475



FLX475 was well tolerated, with no significant lab abnormalities, serious adverse events or dose-limiting clinical adverse events. There was no evidence of autoimmunity or changes in peripheral blood immune cell populations. Sporadic Grade 1 corrected Q-T interval (“QTc”) prolongation was observed in nearly every cohort (including placebo). QTc prolongation is a heart rhythm disorder that can cause arrhythmias. No QTc prolongation greater than Grade 1 was observed in 14-day multiple ascending dose cohort doses through 300/100 mg (300 mg Day 1 loading dose followed by 100 mg once daily), including the projected efficacious dose of 75 mg once daily. At the highest dose (300/150 mg) correlating with exposures three to five times that needed to achieve efficacious exposure, two subjects (out of six dosed with FLX475) met QTc stopping criteria (greater than 60 msec prolongation from baseline, one of whom also exhibited a transient Grade 2 QTc prolongation), which were asymptomatic and not associated with arrhythmia or any other adverse event.

FLX475-02: A Phase 1/2 Dose Escalation and Expansion Study of FLX475 Alone and in Combination with Pembrolizumab in Advanced Cancer

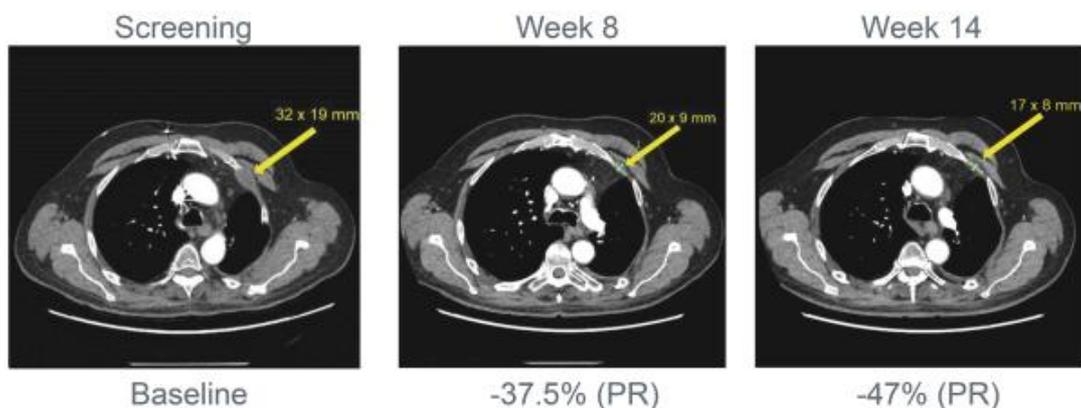
We are currently conducting a seamless Phase 1/2 trial of FLX475 as a monotherapy and in combination with pembrolizumab (marketed as Keytruda). We have completed the Phase 1 portion of the trial, which was a standard “3+3” dose-escalation study intended primarily to evaluate safety, pharmacokinetics and pharmacodynamics of FLX475 as a monotherapy and in combination with pembrolizumab in patients with multiple tumor types, including some that may be “charged.”

While one dose-limiting clinical adverse event of asymptomatic QTc prolongation (> 500 ms and > 60 ms prolongation from baseline) was observed in each of the Phase 1 75 mg and 100 mg monotherapy cohorts, both in subjects with confounding factors (including an elevated and increasing QTc at baseline in one, and hypokalemia in the other), no monotherapy maximum tolerated dose (“MTD”) was defined as no dose was determined to have exceeded the MTD.

We reported in October 2019 that in the Phase 1 portion of the Phase 1/2 study, a patient with NSCLC in the 50 mg FLX475 and pembrolizumab cohort who had failed prior treatment with anti-PD-L1 therapy (atezolizumab) had a confirmed partial response (“PR”) under RECIST 1.1 criteria, based on radiological analysis performed at the clinical investigator site, with a 37.5% reduction in target lesion measurement at 8 weeks and a 47% reduction at 14 weeks. The patient remains on study and in response, and has been able to escalate his dose to 75 mg.

Confirmed Partial Response in a Checkpoint Inhibitor-Refractory NSCLC Patient Treated with 50 mg FLX475+ Pembrolizumab *

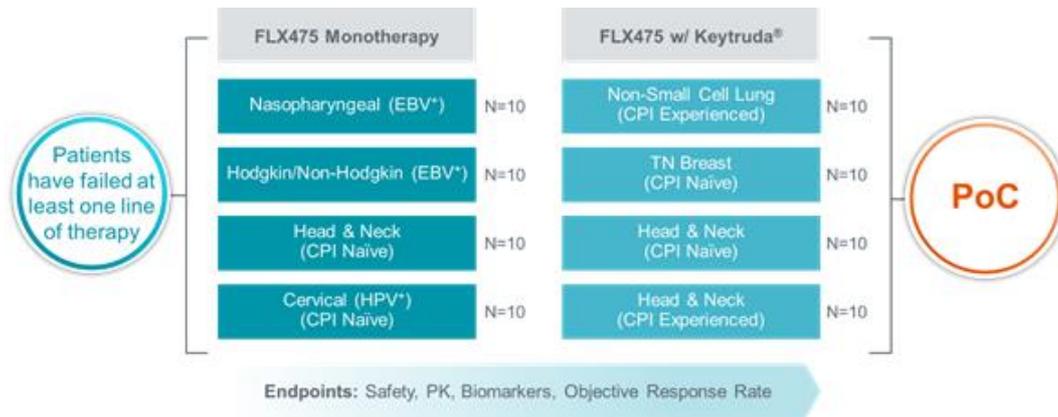
- 4L NSCLC patient that progressed despite prior atezolizumab therapy
- Confirmed partial response (PR) by RECIST 1.1 criteria. Patient remains on study



* Based on radiological analysis conducted at the clinical investigator site.

We are currently enrolling the Phase 2 expansion portion of the Phase 1/2 trial to evaluate FLX475 as a monotherapy and in combination with pembrolizumab specifically in patients with several types of “charged” tumors, which represent cancer types we believe are most likely to respond to FLX475. Both the Phase 2 monotherapy expansion cohorts and the combination expansion cohorts are enrolling at a daily dose of 100 mg. The Phase 2 portion of the trial is a two-stage design. In Stage 1 of the Phase 2 portion, eight cohorts of ten patients each, grouped by indication, will be dosed with FLX475 as monotherapy or in combination with pembrolizumab. In the four Phase 2 monotherapy expansion cohorts, patients will either have NPC or lymphoma confirmed to be EBV+, cervical cancer that is HPV+ or HNSCC that is naïve to checkpoint therapy. In the four Phase 2 combination expansion cohorts, patients will be NSCLC or HNSCC patients who are relapsed or refractory to checkpoint inhibitors or TNBC or HNSCC patients naïve to checkpoint inhibitors. Cohorts in which promising activity is observed will then proceed into Stage 2, enrolling an additional 19 patients. We anticipate obtaining data on overall response rates in the Phase 2 portion of the trial throughout 2020, and we anticipate results from the Phase 2 portion of the trial could provide clinical proof-of-concept (“PoC”). While we originally intended to provide an initial data readout from the Phase 1/2 trial in the second quarter of 2020, we now expect that timeline will be delayed due to circumstances and uncertainties created by the COVID-19 global pandemic. For more information regarding the risks associated with our Phase 1/2 clinical trial for FLX475, please see “Risk Factors—Risks Related to Our Business—FLX475 and PRT193 are in clinical development, which may fail or suffer delays that materially and adversely affect their commercial viability.”

FLX475 Phase 2 Portion of Phase 1/2 Trial



Gated 2-stage design:

- First stage enrollment (10 patients/cohort)
- Second stage: if positive ORR in a cohort, enroll additional 19 patients

Accumulating results from the FLX475-02 Phase 1/2 study will inform available clinical development options that can be leveraged in near real time. For example, if we observe promising clinical data with FLX475 monotherapy in a specific Phase 2 expansion cohort (such as a high overall response rate), we could then initiate planning for a potential pivotal trial. Examples of such a trial include a single-arm study in a patient population with high unmet need (e.g., either a single disease, or “basket” of virally-associated tumors, with no available standard therapy options), and in a randomized trial against standard therapy(ies). Similarly, data from a particular Phase 2 combination expansion cohort could be considered promising enough to plan for a randomized Phase 2 or 3 study comparing FLX475/pembrolizumab combination therapy against pembrolizumab alone. Based on historical examples, it may be possible to modify the current Phase 1/2 trial to seamlessly proceed into one or more pivotal trials, thus saving significant clinical development time to potential regulatory submission and approval.

In addition, biomarker data obtained from the patients in the Phase 1/2 trial may inform the generation of a companion diagnostic that could potentially be used to prospectively select for patients who may be more likely to respond to FLX475 therapy in a future study, thus increasing the chances of a positive trial result and regulatory approval. Our comprehensive biomarker plan includes analysis of the TME in paired biopsies collected before and on treatment. Key biomarkers include (i) CD8 : T_{reg} ratio as detected by immunohistochemistry, (ii) expression of CCL17 and CCL22 as detected by in situ hybridization, (iii) receptor occupancy, (iv) peripheral blood analysis for CCL17 and CCL22 and (v) exploratory analysis, including immune phenotyping, transcriptomics and T cell clonality. For more information regarding the risks associated with our Phase 1/2 clinical trial for FLX475, please see “Risk Factors—Risks Related to Our Business.”

Our Lead Inflammation Drug Candidate—RPT193

Our lead inflammation drug candidate, RPT193, is a small molecule CCR4 antagonist that selectively inhibits the migration of Th2 cells into allergically-inflamed tissues. Th2 cells are clinically validated drivers of allergic diseases such as AD, asthma, chronic urticaria, allergic conjunctivitis, chronic rhinosinusitis and eosinophilic esophagitis, and we believe that, by inhibiting CCR4, RPT193 has the potential to bring therapeutic benefit to patients across a broad spectrum of these diseases. We are developing RPT193 first for the treatment of atopic dermatitis (“AD”), a chronic, inflammatory skin disease characterized by skin barrier disruption and immune dysregulation. The current standard of care for AD includes topical creams and steroids as well as the injectable biologic, dupilumab. Dupilumab was approved for moderate to severe AD in 2017 as well as in moderate to severe asthma in late 2018, achieving \$922 million of worldwide net sales in 2018. Despite recent progress in the treatment of inflammatory diseases, including AD, we believe there remains a significant unmet need for a safe, oral treatment with an attractive efficacy profile. We believe RPT193, if approved by the FDA, could fill this unmet medical need for the treatment of allergic disorders with the convenience of once-daily oral dosing.

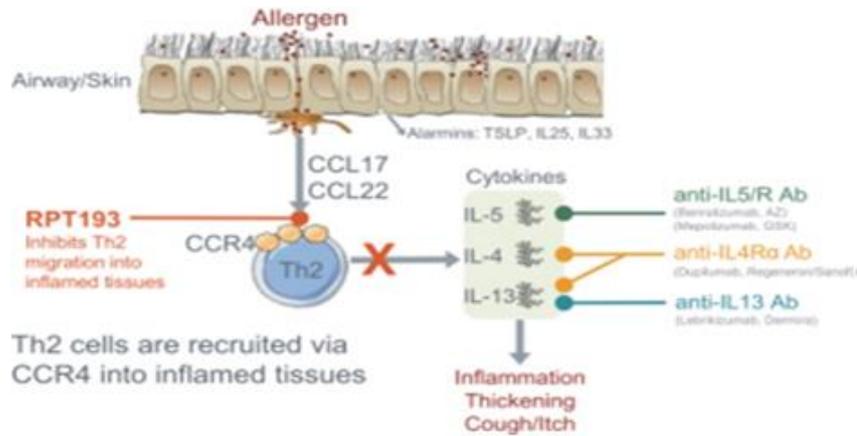
RPT193 is chemically distinct from FLX475, our CCR4 antagonist for oncology, and has demonstrated a unique pharmaceutical profile in preclinical experiments that we believe will be favorable for use in non-oncology indications. Our data have shown that RPT193 has a lower PK parameter known as the volume of distribution relative to that of FLX475. Compounds with a lower volume of distribution, such as RPT193, are more likely to spare key organ systems from extensive drug exposure. Limited tissue exposure has the potential to contribute to a safety advantage for RPT193. Consistent with this, RPT193 has demonstrated a safety profile both in preclinical studies and in healthy volunteers that suggests it would be well tolerated for chronic dosing in non-oncology indications.

We hold worldwide rights to RPT193 and have submitted patent applications with respect to RPT193 that, if issued, would be scheduled to expire in 2039 (not including any applicable extensions, if approved).

Background—Th2 Cells and Allergic Disease

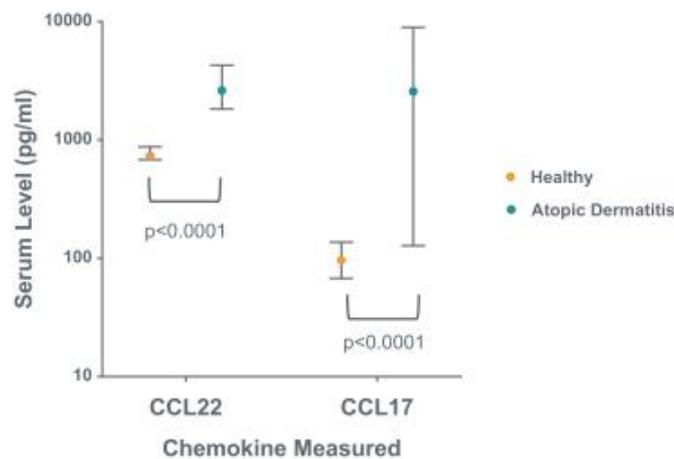
Th2 cells express high levels of CCR4 and are clinically validated drivers of allergic diseases along the atopic march, which includes AD, asthma, chronic urticaria, allergic conjunctivitis, rhinosinusitis and eosinophilic esophagitis. When a pathogen comes into contact with the skin or mucosal lining of the nose or lungs, an immune response is triggered. It is believed that innate immune cells and antibodies that recognize the pathogen initiate a release of inflammatory cytokines, leading to the recruitment of other immune system components, including Th2 cells. Th2 cells secrete inflammatory cytokines, such as interleukin 4 (“IL-4”), interleukin 5 (“IL-5”) and interleukin 13 (“IL-13”). While this Th2 response may be highly effective against foreign pathogens, particularly parasites, sometimes the body overreacts to benign substances in this way, resulting in a significant and presumably unnecessary influx of Th2 cells, leading to conditions along the atopic march.

RPT193 Acts on a Well-Validated Pathway in AD and Asthma



At a cellular and molecular level, the Th2 response is initiated and sustained when Th2 cells are recruited to the site of inflammation by the binding of CCL17 and CCL22 to CCR4. Patients suffering from AD and other allergic diseases have significantly elevated levels of both CCL17 and CCL22, suggesting that inhibiting the ability of these chemokines to bind to CCR4 may prevent migration of Th2 cells into these inflamed sites, thus reducing inflammation.

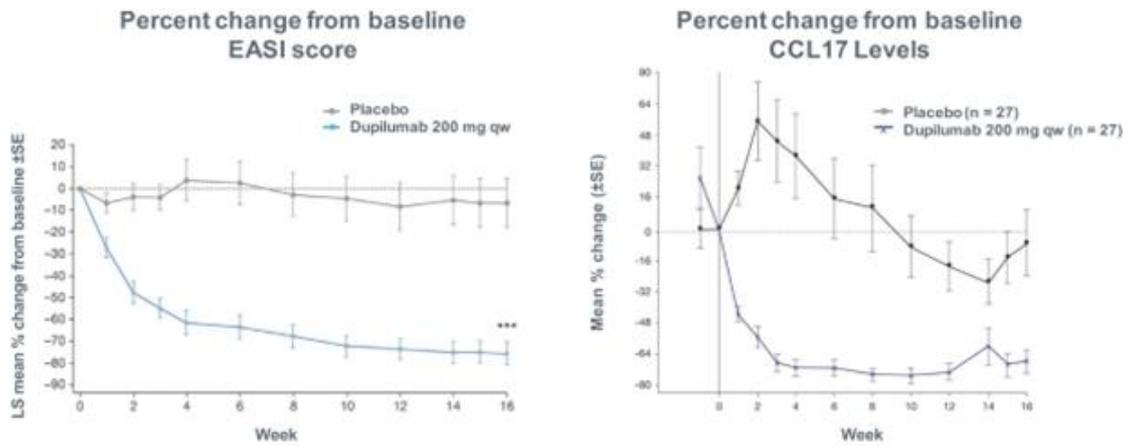
CCR4 Ligands (CCL17 and CCL22) are Significantly Elevated in AD



Thijs et al. *Journal of Allergy and Clinical Immunology*, 2018, supplemental data

CCL17 and CCL22 levels have been found to strongly correlate with the severity of many allergic diseases, including AD. Dupilumab works by blocking the receptor for IL-4 and IL-13, two of the cytokines produced by Th2 cells, leading to a reduction in the level of inflammation. Dupilumab also indirectly leads to reductions in the level of CCL17, thus breaking the Th2-driven inflammatory cycle. We believe that inhibition of the CCR4 receptor will block the migration of Th2 cells into these inflammatory sites, leading to reductions in inflammation thereby blocking the secretion of IL-4, IL-5 and IL-13 before they can induce tissue damage.

CCL17 Is a Good Marker for Response to AD Therapy (Dupilumab)



Guttman-Yassky et al. Journal of Allergy and Clinical Immunology, 2019, supplementary figures

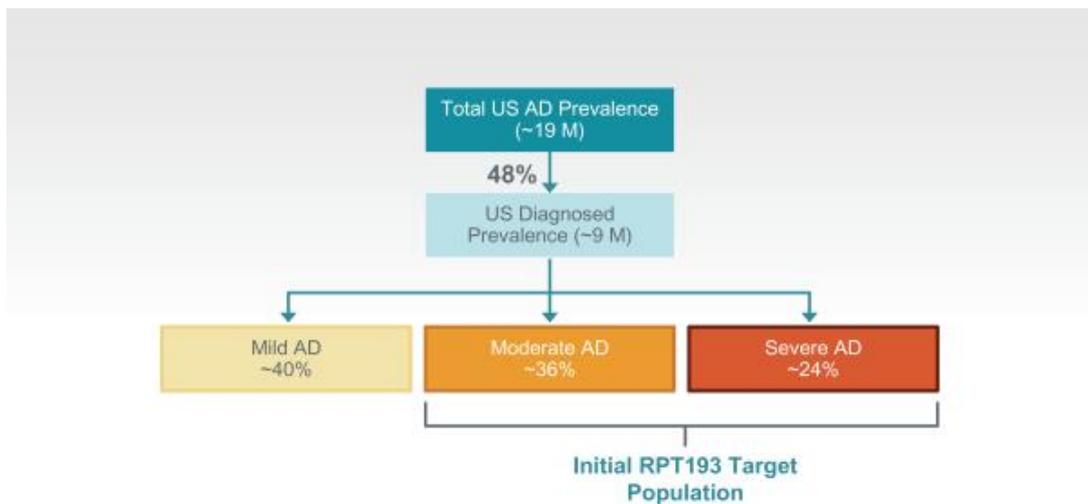
EASI = Eczema Area and Severity Index

qw = Weekly dosing

Atopic Dermatitis Overview

AD is a chronic, inflammatory skin disease characterized by skin barrier disruption and immune dysregulation. Patients with AD have chronically inflamed skin lesions that cause, among other disabilities, debilitating pruritus (itch), which can severely impair quality of life. Onset of AD often occurs during childhood and can persist into adulthood. The estimated U.S. adult prevalence of AD is approximately 19 million individuals, of which approximately 50% are diagnosed. An estimated 60% of these adults have disease characterized as moderate to severe. Furthermore, an estimated ten million children have AD, of which approximately 30% experience moderate to severe disease.

Atopic Dermatitis (AD) U.S. Prevalence*



* 2018 Data, Decision Resources

AD Historical Standard of Care

Creams, ointments and topical steroids, or other topical or systemic anti-inflammatory agents, are routinely used to manage skin health and reduce skin inflammation in patients with mild to moderate AD. Patients who do not achieve sustained alleviation of symptoms with topical treatments have historically been prescribed systemic steroids or other systemic immunosuppressive agents such as cyclosporine. While these are effective as temporary treatments of flare-ups, extended use has been associated with many potential side effects or adverse events. Systemic steroids, such as prednisone, can lead to temporary symptom relief but their use is not recommended to induce stable remission due to numerous side effects and the propensity of severe disease flares upon treatment cessation. Cyclosporine is also not suitable for long-term use as it has been associated with renal toxicity, hirsutism, nausea and lymphoma, and patients must discontinue use after one to two years.

We believe that topical immunosuppressive agents inadequately address the systemic nature of AD. Furthermore, safety issues associated with systemic immunosuppressants such as steroids and cyclosporine make them inappropriate for chronic administration. The treatment paradigm in AD is evolving given these inadequacies of the historical standard of care agents.

AD Emerging Standard of Care

There are two key recent developments within the AD treatment landscape that will shape the standard of care in the future: (i) the approval of the biologic agent dupilumab for moderate to severe AD in 2017 and (ii) the clinical progress of the class of oral Janus kinase (“JAK”) inhibitors, which are in late stage clinical development and are anticipated to reach the market by 2021.

Dupilumab is a recently approved biologic for AD targeting the Th2 pathway. Dupilumab prevents T cell activation and amplification of proinflammatory signaling pathways by blocking the IL-4 receptor alpha (“IL-4R α ”), preventing IL-4 and IL-13 binding. Approximately 36% of patients receiving weekly or biweekly injections of dupilumab achieved significant improvement in disease symptoms. Dupilumab was approved for moderate to severe AD in the United States and Europe in 2017. Net sales of dupilumab were \$257 million in 2017 and \$922 million in 2018, highlighting the growing demand for safe and effective systemic treatments of AD.

Among the orally administered JAK inhibitors in development for AD, there are three in Phase 3 development: upadacitinib, baricitinib and abrocitinib. JAK inhibitors block the signaling pathway to multiple proinflammatory cytokines, including IL-4 and IL-13, thereby preventing the downstream signaling of Th2 cells at the sites of inflammation. While JAK inhibitors have demonstrated comparable clinical efficacy to that of dupilumab and offer the advantage of oral dosing, these inhibitors are broadly immunosuppressive and therefore may not be suitable for long-term dosing. Additionally, the FDA has placed black box warnings for JAK inhibitors approved in other indications due to the potential for serious infections, malignancies and thromboembolic events.

Despite these recent developments, we believe that there is significant unmet medical need and market potential for a safe and efficacious agent for the treatment of AD. We believe that preventing the migration of Th2 cells into inflamed tissues with an oral CCR4 antagonist represents a highly differentiated approach. We further believe that an oral agent with a favorable safety and efficacy profile would offer an attractive alternative for patients compared to the biweekly injections associated with dupilumab. While the JAK inhibitor agents are orally administered, they are broadly immunosuppressive and therefore may not be suitable for long-term dosing.

	RPT193	Dupilumab*	JAK inhibitors
Safety	<ul style="list-style-type: none"> ● Preclinical and healthy volunteer data suggest a favorable safety profile 	<ul style="list-style-type: none"> ● Generally safe and well tolerated ● Conjunctivitis 	<ul style="list-style-type: none"> ● Immunosuppressive ● Potential black box warning for infections, malignancies and thromboembolic events
Route of Administration	<ul style="list-style-type: none"> ● Oral, daily dosing 	<ul style="list-style-type: none"> ● Injectable 	<ul style="list-style-type: none"> ● Oral
Efficacy	<ul style="list-style-type: none"> ● Preclinical data suggest efficacy similar to dupilumab* 	<ul style="list-style-type: none"> ● Durable clinical efficacy ● Activity in AD and asthma 	<ul style="list-style-type: none"> ● Similar to dupilumab*

* DUPIXENT®

● Favorable Characteristic
● Unfavorable Characteristic

Overview of Other Diseases Along the Atopic March

In addition to AD, a number of allergic diseases are characterized by an inflammatory response to cytokines produced by Th2 cells. These diseases include allergic asthma, chronic urticaria, chronic rhinosinusitis, allergic conjunctivitis and eosinophilic esophagitis.

Asthma

Asthma is a chronic inflammatory disease of the airways characterized by intermittent airway obstruction, swelling and mucus hyperproduction, which can result in coughing, wheezing and difficulty breathing. Allergic asthma is triggered by the inhalation of allergens including dust, pollen and dander. An estimated 25.2 million individuals in the United States have asthma, with allergic asthma the most common subtype, constituting approximately 80% of asthmatic children and approximately 60% of asthmatic adults. Asthma is driven by both Th2 allergic and Th17 autoimmune mechanisms. An estimated 40% to 50% of patients with asthma fall within the Th2-high subtype characterized by elevated levels of IL-13 and IL-5.

Standard treatment of asthma includes inhaled rapid-acting beta2-agonists for the treatment of acute symptoms and daily low-dose inhaled corticosteroid (“ICS”) monotherapy as a first-line maintenance treatment. Anti-immunoglobulin E (“Anti-IgE”) monoclonal antibody omalizumab and IL-4Rα antagonist dupilumab can be prescribed for individuals with asthma who are uncontrolled on ICS therapy. While these therapies are generally effective, they are administered via injection and their targets are downstream of CCR4, presenting a market opportunity for an oral, upstream alternative.

Chronic Urticaria

Chronic urticarias (“CUs”) are a group of skin conditions including chronic spontaneous urticaria (“CSU”), cholinergic urticaria (“CLU”) and symptomatic dermographism that are characterized by hives, redness, itching and swelling, lasting for greater than six weeks. The trigger for CSU is unknown; however, CLU is triggered by increases in body temperature and symptomatic dermographism by physical contact with the skin by exogenous mechanical stimuli. Symptoms result from the degranulation of dermal mast cells, and IgE signaling likely contributes to inappropriate mast cell activation. Urticaria affects 15-20% of the population at some point during their lifetime, with approximately 30% of urticaria patients experiencing recurring episodes.

Current treatment guidelines for CU recommend the use of oral H1-antihistamines as a first-line therapy, with dose escalation of up to four times the standard dose in lower responders. Up to 50% of patients with CSU do not respond to H1-antihistamines and can be prescribed omalizumab, an injected monoclonal antibody, which maintains an approximately 65% response rate as a second-line treatment. Given these response rates from approved biologic drugs, there remains an unmet need for a safe, efficacious therapy with a favorable oral dosing profile. CCL17 and CCL22 are elevated in chronic urticaria, supporting the potential use of RPT193 in this indication.

Chronic Rhinosinusitis

Chronic rhinosinusitis (“CRS”) is a disease characterized by sinonasal mucosal inflammation, which results in facial pain/pressure, nasal drainage, nasal obstruction and reduction or loss of smell, for at least 8-12 consecutive weeks. Confirmation of the disease is required using an objective measure such as a nasal endoscopy or CT scan, given lack of symptom specificity. It is believed that approximately 5-15% of the general population experiences CRS, however, the prevalence of doctor-diagnosed CRS was found to be 2-4%. There is wide belief that CRS is a heterogeneous condition and that the causes of inflammation are diverse and multifactorial, involving overlap between both host and environmental triggers.

Standard treatment of CRS utilizes topical and oral steroids, antibiotics and ultimately surgical intervention if symptoms are not adequately controlled by available therapies. IgE antibodies may play a role in CRS, with total IgE levels correlating with disease severity, as assessed by CT scan. As a result, anti-IgE antibody omalizumab and anti-IL-5 antibodies reslizumab and mepolizumab have been evaluated as treatment alternatives for CRS, with reslizumab and mepolizumab now considered a recommended treatment for CRS patients with nasal polyps. Dupilumab has also demonstrated activity in CRS in Phase 3 trials. Compared to these widely used injectable biologics, we believe that an orally dosed therapy with comparable safety and efficacy results would have a competitive profile. Given the activity of the Th2-targeted biologics, we believe that RPT193 represents a potential oral treatment for this indication.

Allergic Conjunctivitis

Allergic conjunctivitis is an ocular disease in which the conjunctiva—the transparent tissue lining the eyelid and covering the white part of the eye—is inflamed as a result of exposure to allergens. Simple allergic conjunctivitis, vernal keratoconjunctivitis, atopic keratoconjunctivitis and giant papillary conjunctivitis are the four main types of allergic conjunctivitis. These different manifestations of conjunctivitis differ in their affected population and etiology. The majority of conjunctivitis patients have simple allergic conjunctivitis and this predominantly affects patients who are younger than 20 years old. Diagnosis is difficult to estimate given that patients often fail to report symptoms and do not seek medical attention, but it is estimated that between 10-30% of the general population suffers from this inflammation of the eye. In fact, more than 60% of individuals suffering from allergies are believed to have allergic conjunctivitis.

The current treatment paradigm for severe forms of simple allergic conjunctivitis has a combination of antihistamine and mast cell-stabilizing drops as the first-line of treatment. The second-line treatment is providing patients with topical nonsteroidal anti-inflammatory drops. Refractory patients are given corticosteroid drops for no more than two weeks, and clinicians may also opt to give patients systemic antihistamines. We believe there is an unmet need in the tolerability and safety profiles of patients with severe refractory cases of simple allergic conjunctivitis given the adverse events resulting from the long-term use of corticosteroids and antihistamines. CCL17 and CCL22 are elevated in allergic conjunctivitis, supporting the potential use of RPT193 in this indication.

Eosinophilic Esophagitis

Eosinophilic esophagitis is a chronic, allergic inflammatory disease of the esophagus. It is estimated that eosinophilic esophagitis affects at least 150,000 people in the United States. Studies from Western Europe, Australia and North America estimate prevalence to be 50-100 cases per 100,000 persons. Eosinophilic esophagitis is caused by the presence of a large number of eosinophils in the esophagus, which stems from many factors such as immune hypersensitivity, environmental proteins and genetics.

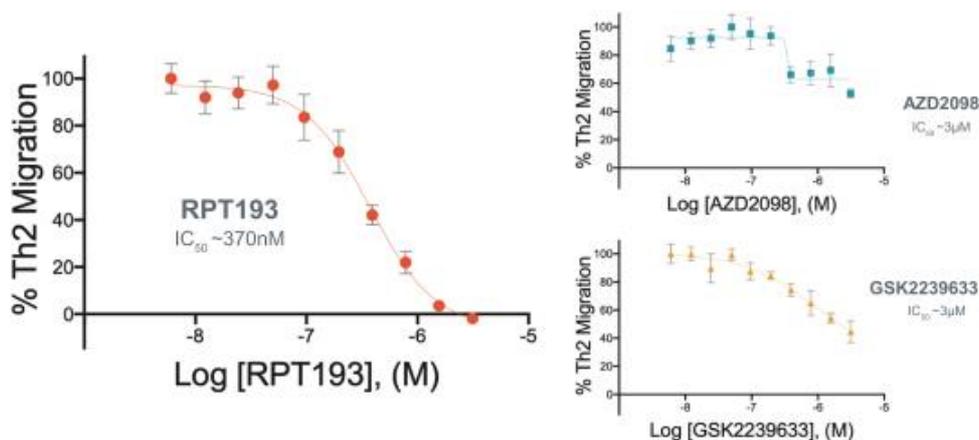
Standard treatment for eosinophilic esophagitis includes diet modification, esophageal dilation and drugs with topical corticosteroids as a first-line medication. It is estimated that there is at least a partial symptomatic response seen in 60% to 75% of adults with eosinophilic esophagitis who take topical steroids. While steroids offer symptomatic relief once treated, patients are required to continue maintenance regimens as disease recurrence is common after discontinuation of treatment. Dupilumab has demonstrated activity in eosinophilic esophagitis in clinical trials, supporting the potential use of RPT193 in this indication.

RPT193 Preclinical Data

CCL22-Induced Th2 Chemotaxis

In an in vitro chemotaxis assay, RPT193 was shown to block CCL22-induced chemotaxis of human Th2 cells with an IC_{50} of ~ 370 nM. For comparison, two CCR4 antagonists from the published literature, AZD2098 and GSK2239633, both exhibited chemotaxis IC_{50} of $>3\mu M$ when assayed head to head in the same in vitro experiment.

CCL22-Induced Th2 Chemotaxis

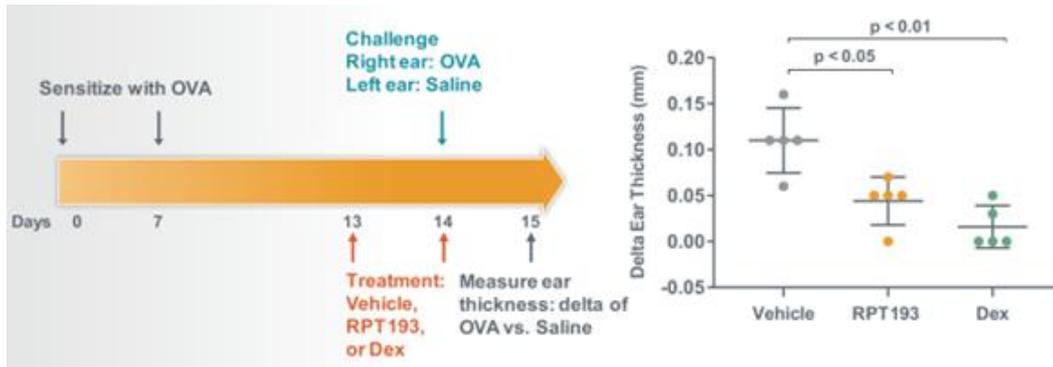


RPT193 Activity in Preclinical Models of AD

In a mouse model of AD, repeated systemic sensitization to ovalbumin (“OVA”) induces a Th2 response leading to increased expression of Th2 cytokines IL-4, IL-5 and IL-13 in the allergen-exposed skin. This leads to broad inflammation, deposition of collagen and skin thickening. Oral treatment of RPT193 in mice that have been sensitized to OVA results in a significant decrease in inflammation, as measured by skin thickness of the allergen-challenged ear (two independent experiments with five mice per experimental arm). The treatment effect with RPT193 was comparable to the systemic treatment with the corticosteroid dexamethasone (“Dex”), which is used as a positive control in these models.

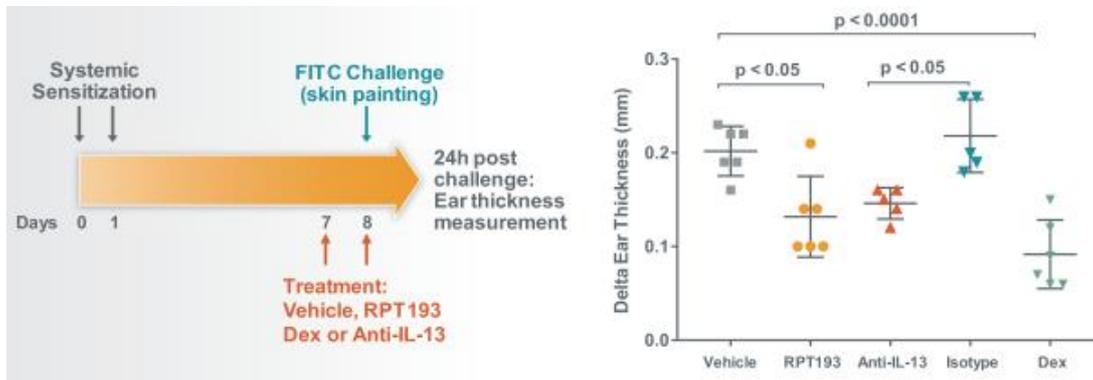
The figure below shows the experimental outline and results as measured by the change (“delta”) in ear thickness, determined by the difference in ear thickness between the challenged ear and the unchallenged control ear.

RPT193 Reduces Skin Inflammation in an OVA-Induced AD Model



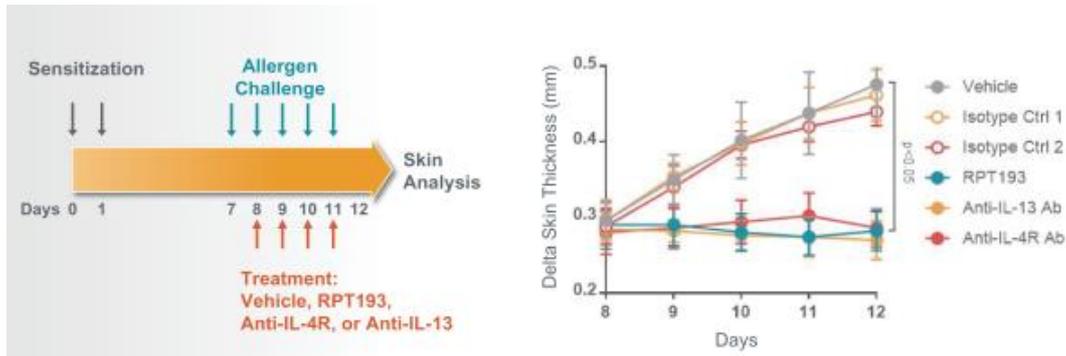
The activity observed with RPT193 was not only seen in the OVA-AD model, but was also seen in an alternative allergen-induced model of AD. In this model, five mice per experimental arm are sensitized using fluorescein isothiocyanate (“FITC”), which induces a strong Th2 cell-mediated response. Sensitized mice are then challenged on the ear with FITC, which leads to inflammation resulting in swelling and is easily measured as ear thickness. In six of six independent experiments, we observed that mice treated with RPT193 one day prior to FITC challenge had a significant reduction in thickness ($p < 0.05$ with average reduction ranging from 20% to 42% compared to vehicle group). In a head-to-head experiment in this preclinical mouse model, oral RPT193 showed similar activity to a neutralizing anti-IL-13 antibody (“anti-IL13”).

RPT193 Reduces Skin Inflammation in a FITC-Induced AD Model



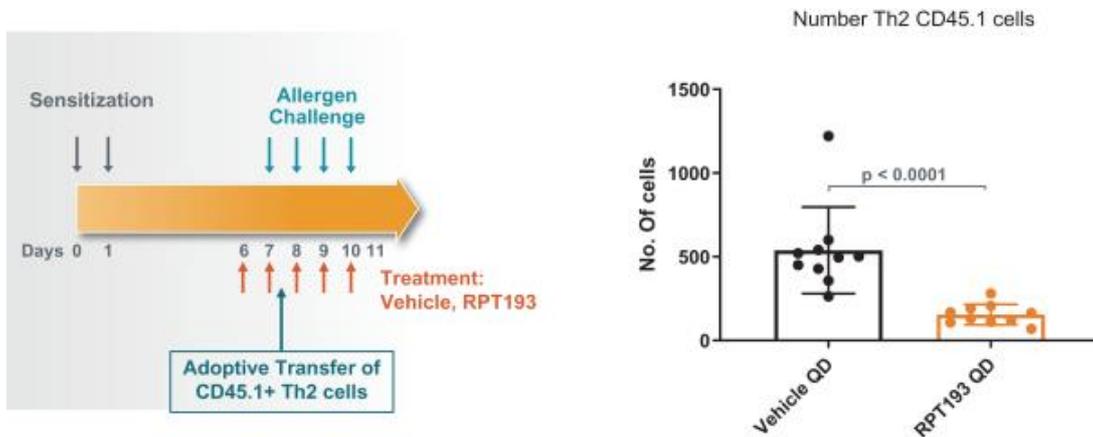
The treatment effect with RPT193 was also observed in a therapeutic Th2-driven FITC AD model. In contrast to the FITC-induced AD model described above, five to ten mice per experimental arm received treatment 24 hours following the allergen challenge when significant ear inflammation was already observed. Oral administration of RPT193 in three of three independent experiments resulted in a statistically significant reduction in ear thickness compared to treatment control ($p < 0.05$ with average reduction ranging from 42% to 54%). When comparing to the respective vehicle or isotype control, RPT193, anti-IL-13 antibody and an anti-IL-4R antibody had similar effects (RPT193 vs. anti-IL-13: 45% vs. 46%, 54% vs. 40% and 42% vs. 28% reduction in ear thickness at Day 12 in the three separate experiments; RPT193 vs. anti-IL-4R: 37% vs 49%, 30% vs. 30% and 41% vs. 41% reduction in ear thickness at Day 12 in the three separate experiments). Therefore, the treatment effect of once daily dosing of RPT193 was comparable to that observed with the systemic administration anti-IL-13 and anti-IL-4R antibodies.

RPT193 Reduces Skin Inflammation in a Therapeutic Th2-Driven AD Model



Once-daily oral administration of RPT193 also resulted in a statistically significant reduction of Th2 cell migration in the inflamed skin tissue *in vivo* ($p < 0.0001$). Ten mice per group received either vehicle control or once daily oral administration of RPT193. *In vitro* differentiated mouse Th2 cells were adoptively transferred on day 7 following the first allergen challenge at which time significant ear inflammation was observed. Mice received four additional allergen challenges before immune cells were isolated from the skin. The Th2 cells that migrated into the inflamed tissue were enumerated by using a marker that is only present on the adoptively transferred Th2 cells.

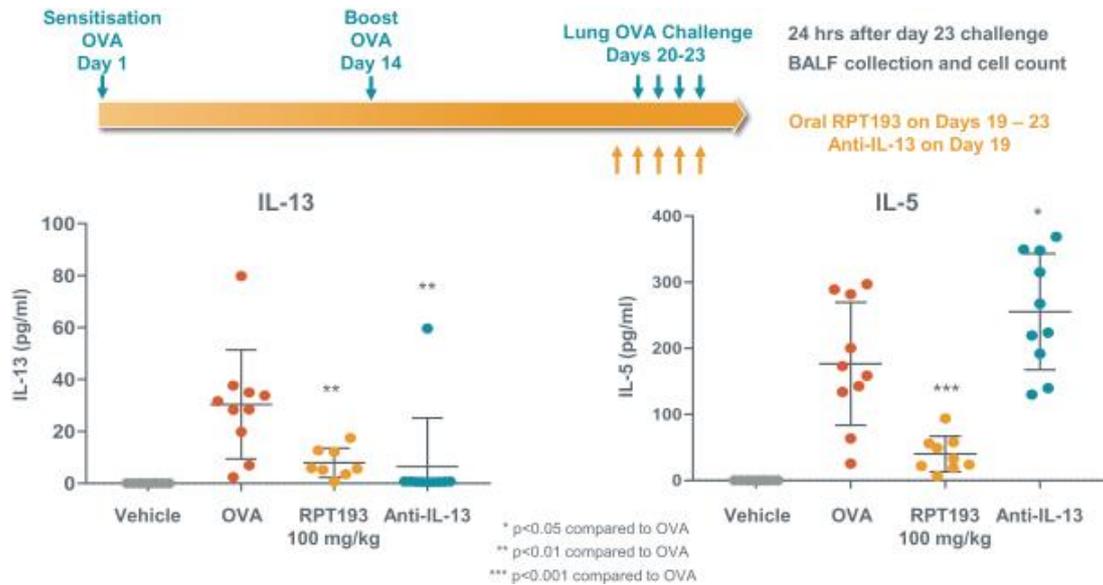
RPT193 Reduces Migration of Th2 cells in Atopic Dermatitis Model



RPT193 Efficacy in a Preclinical Model of Allergic Asthma

In a mouse model of allergic asthma induced by the allergen OVA, treatment with RPT193 in two independent experiments with ten mice per experimental arm significantly reduced immune cell migration into the lungs, including Th2-derived cytokines such as IL-5 and IL-13, which are drivers of the disease. Bronchoalveolar lavage fluid ("BALF") collected by washing a small portion of the lung was found to contain dose-dependent decreases in both IL-5 and IL-13. Not unexpectedly, anti-IL-13 had no effect on levels of IL-5 in the BALF. The reduction of the cellular infiltrate and the level of Th2-derived cytokines in the BALF supports the hypothesis that RPT193 was effective in reducing migration of Th2 cells into the lungs as evidenced by lowered overall allergic inflammation.

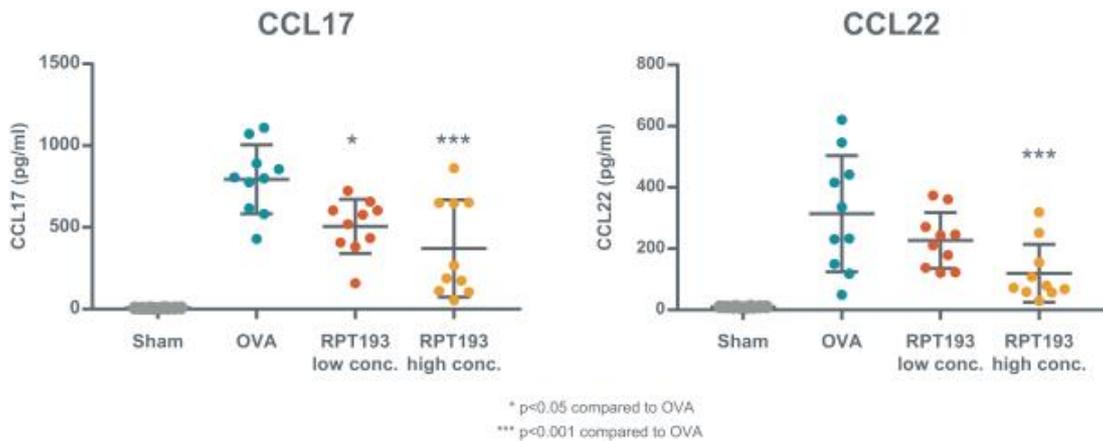
RPT193 Shows Evidence of Broader Activity than Anti-IL-13



RPT193 Reduces Levels of CCL17 and CCL22 in the BALF in a Preclinical Model of Allergic Asthma

In this OVA model of allergic asthma, treatment with RPT193 in two of two independent experiments with ten mice per experimental arm also led to statistically significant decreases in the levels of CCL17 and CCL22 ($p < 0.05$ at high dose of RPT193, 24 hours after challenge), chemokines that are secreted by inflamed cells that serve to recruit Th2 cells. This observation suggests that RPT193 is not only able to directly block Th2 cell recruitment, but that, by doing so, the level of overall inflammation is decreased, reducing the secretion of these cytokines and the further recruitment of Th2 cells. Reduction of the CCR4 ligands, CCL17 and CCL22, has also been observed in patients treated with other Th2-targeting approaches, such as dupilumab, demonstrating the clinical relevance of our preclinical findings with RPT193.

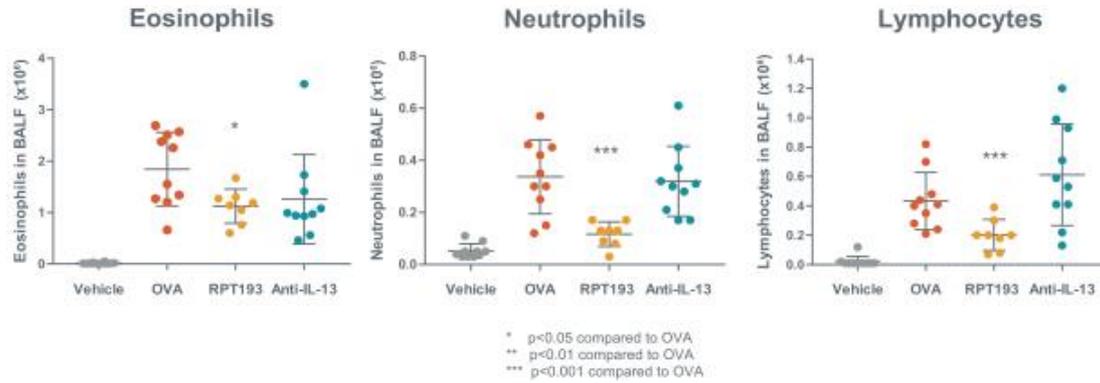
RPT193 Reduces CCR4 Ligands in the BALF



RPT193 Reduces the Immune Cell Infiltrate in the BALF in a Preclinical Model of Allergic Asthma

Treatment of mice in an allergic asthma model with RPT193 in two independent experiments with ten mice per experimental cohort led to reduction in multiple classes of immune cells in the BALF, including eosinophils, neutrophils and lymphocytes. These reductions are all consistent with the broad anti-inflammatory action that RPT193 can induce by blocking Th2 cell migration. This prevents one of the earliest steps in the inflammatory cascade, resulting in profound effects on multiple downstream components of the immune system and inflammatory response. The reduction of eosinophils in the BALF was comparable to the anti-IL-13 antibody. However, deeper reduction in neutrophil and lymphocyte counts were observed with RPT193, suggesting a potentially greater impact on the disease compared to other Th2-targeting approaches.

RPT193 Shows Evidence of Broader Activity than Anti-IL-13: Neutrophil and Lymphocytic Infiltration

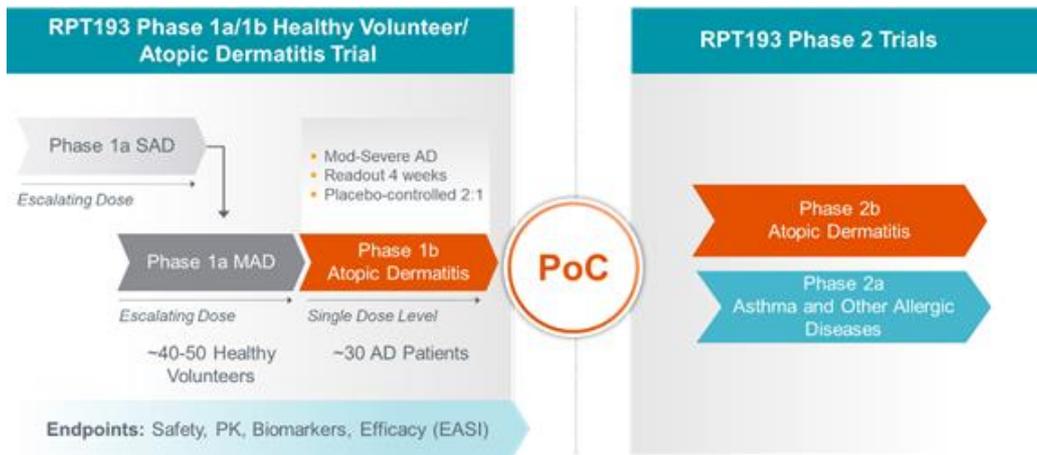


In addition, we believe the overall activity of RPT193 in this OVA-induced asthma model, if confirmed in clinical trials and approved by the FDA could fill an unmet medical need for the treatment of allergic disorders. We believe that the ability to achieve this level of activity with an orally available therapy, if confirmed in clinical trials, would represent a significant advantage over biologics, which require regular injections.

RPT193: Clinical Trials

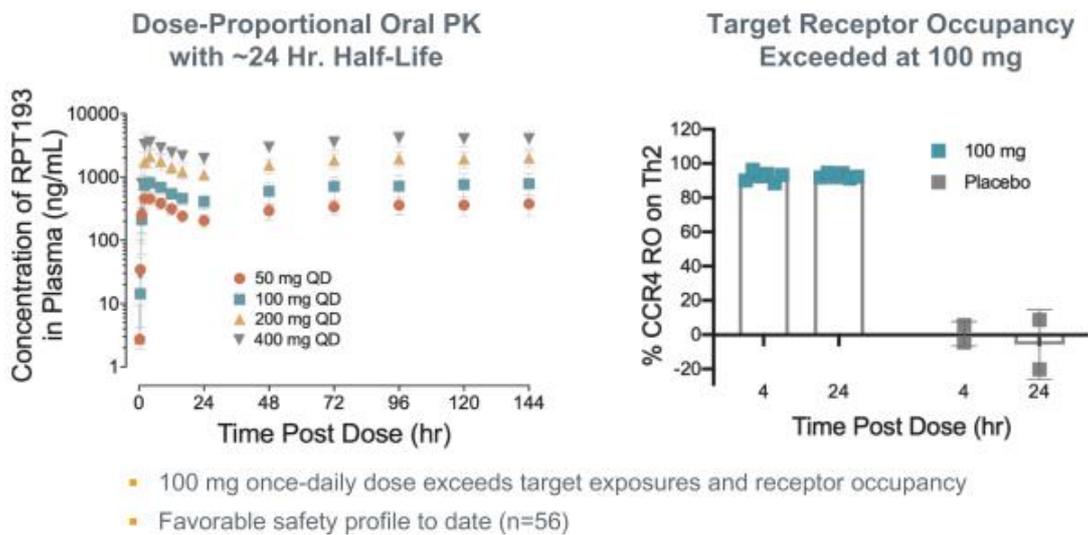
We initiated a first-in-human Phase 1 trial of RPT193 in August 2019, which we refer to as “seamless” given that it starts with healthy volunteers and then transitions directly into a cohort of patients with AD. The initial Phase 1a portion of the trial is comprised of single and multiple dose escalation (“SAD/MAD”) cohorts of healthy volunteers and the Phase 1b portion is a placebo-controlled study in AD patients. Thereafter, we intend to expand clinical development into additional Th2-driven allergic indications.

RPT193: Seamless Clinical Trial Design to PoC



We have completed the Phase 1a SAD and MAD cohorts of healthy volunteers and the blinded safety, pharmacokinetic, and pharmacodynamic data from this Phase 1a portion have demonstrated the ability to achieve target drug levels and receptor occupancy with an acceptable safety profile using once-daily dosing of RPT193 in healthy volunteers. The following graphic illustrates preliminary MAD pharmacokinetic and SAD pharmacodynamic data from the Phase 1a portion of the study in healthy volunteers.

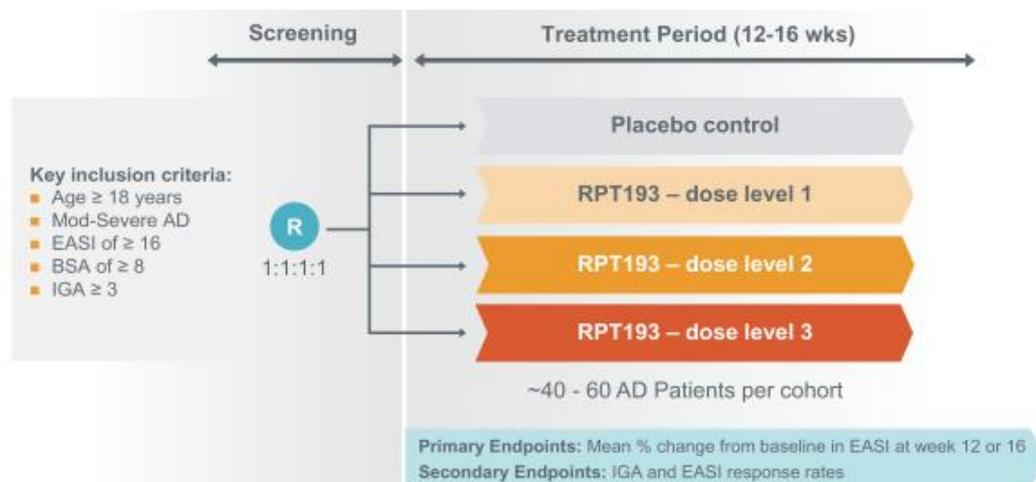
Phase 1a HV Data* Supports Once-Daily Dose



* Data from 56 dosed healthy volunteers.

Due to circumstances and uncertainties created by the COVID-19 global pandemic, we have temporarily paused enrollment in the Phase 1b portion of our seamless Phase 1 trial in patients with AD. We will continue to monitor the situation and intend to restart enrollment in the clinical trial once circumstances related to the global pandemic clarify. The following graphic outlines the design of our proposed Phase 2b trial in AD to be conducted subsequent to the successful completion of the Phase 1a/1b trial.

RPT193: Future Phase 2b Double-Blind, Placebo-Controlled Trial for AD



BSA = Body Surface Area

IGA = Investigator Global Assessment

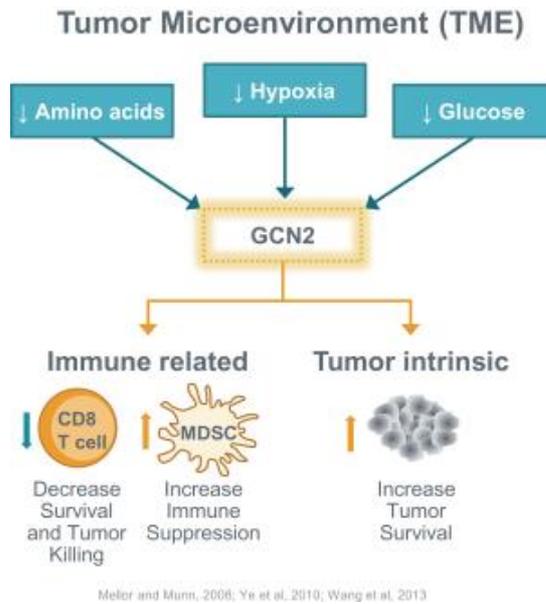
Our GCN2 Program

We are developing a small molecule inhibitor of GCN2 (an “RPT-GCN2i”) to target the dysregulated metabolism in the tumor microenvironment that results in immune suppression and consequently in tumor progression. We believe this target has been validated by our proprietary drug discovery and development engine and that inhibition of GCN2 can lead to direct antitumor effects by addressing altered metabolic pathways in tumors as well as relieving the immunosuppressive effects exerted by the TME through nutrient starvation and other stresses such as hypoxia. The GCN2 pathway is generally not active in healthy tissue suggesting the potential for a favorable therapeutic index for drugs targeting GCN2. We are developing an RPT-GCN2i with the intent of selecting a preclinical candidate in 2020. We believe that the computational analysis of proprietary and public databases will allow us to identify tumor types or a subset of patients with a greater potential to benefit from GCN2 inhibition.

Role of GCN2 in Tumor Cell Proliferation and Immunosuppression

GCN2, or general control nonderepressible 2, is a stress response kinase that regulates the immune system and survival of tumor cells under the conditions of metabolic stress typically seen in the TME. Due to the aberrant vasculature of the tumor, the limited blood supply results in a lack of oxygen and deprivation of nutrients, including amino acids. Activation of the GCN2 pathway has been demonstrated in human tumors and, importantly, deficiency in GCN2 limits tumor growth in preclinical tumor models. Activation of T cells is highly dependent on the availability of amino acids and other nutrients. GCN2 is a key cellular sensor in T cells for amino acid and glucose starvation. Low levels of amino acids such as tryptophan, arginine and other amino acids lead to activation of GCN2. This triggers a cascade of cell signaling events in T cells leading to the inhibition of effector cell function and growth. GCN2, through this regulatory pathway, prevents effector cells from mounting an immune response when amino acid levels are in limited supply. Inactivation of GCN2 removes this regulatory block and allows effector cell proliferation and activation even under conditions of amino acid starvation similar to what may exist in tumors.

GCN2: Key Driver of Immunosuppression in the TME

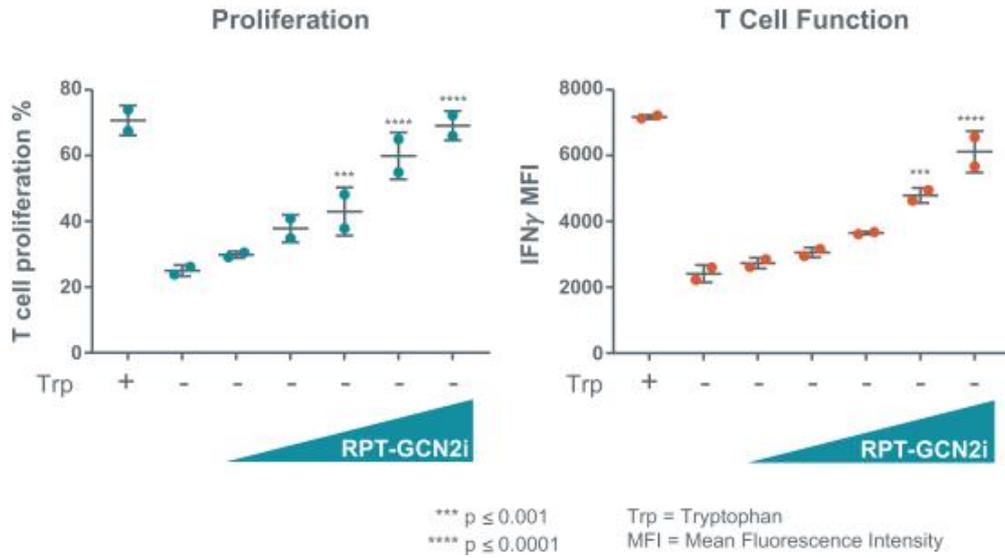


RPT-GCN2i Preclinical Data

An RPT-GCN2i Restores T Cell Proliferation and Function in Amino-Acid-Limited Conditions

Low levels of tryptophan in the TME can be immunosuppressive by blocking the activation and proliferation of effector cells. In six independent cell culture experiments with various human donors, an RPT-GCN2i statistically significantly ($p < 0.05$) increased effector T cell proliferation and function under nutrient starvation conditions in a dose-dependent manner to levels comparable to T cell proliferation and function in non-nutrient-deprived conditions. The ability of an RPT-GCN2i to recover effector cell proliferation was not limited to a single amino acid or nutrient. We have shown that GCN2 inhibition can relieve the immunosuppressive effects of tryptophan (shown below), arginine and glucose deprivation.

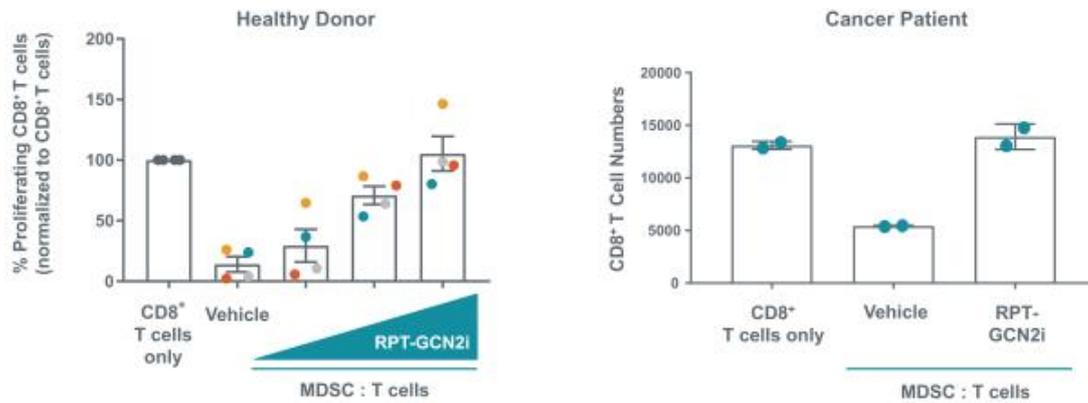
An RPT-GCN2i Restores Human CD8⁺ T Cell Proliferation and Function Under Conditions of Nutrient Starvation



An RPT-GCN2i Inhibits MDSC Immunosuppressive Function In Vitro

Myeloid-derived suppressor cells (“MDSCs”) are heterogeneous cells found in multiple cancer types that can cause immunosuppression through multiple pathways, including the expression of enzymes, such as indoleamine 2,3-dioxygenase, that metabolize tryptophan. Incubation of activated CD8⁺ T cells with MDSCs isolated from four healthy volunteers as well as from one cancer patient leads to a statistically significant ($p < 0.05$) inhibition of T cell proliferation, an effect that is reversed by an RPT-GCN2i in a dose-dependent manner with T cell proliferation comparable to T cells cultured without MDSC (range 80 to 148% of control).

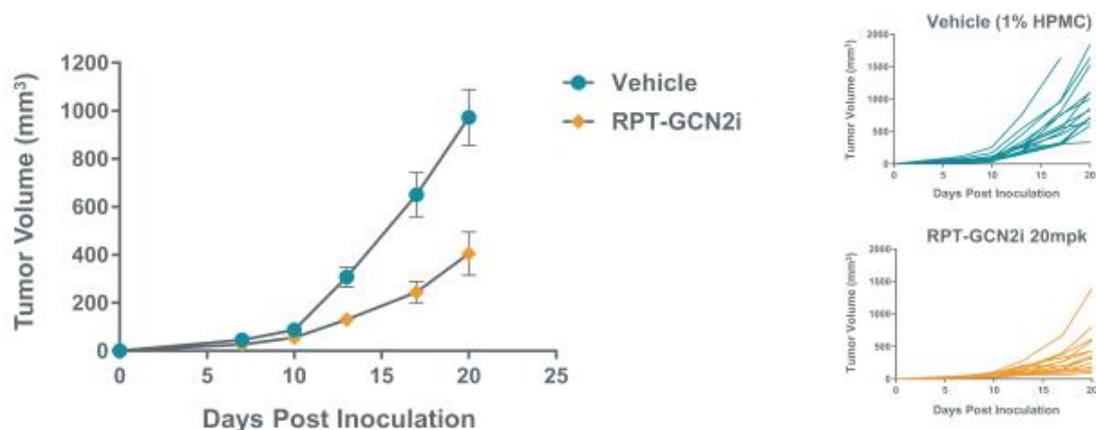
An RPT-GCN2i Reverses Suppressive Function of Healthy Donor and Cancer Patient-Derived MDSCs



An RPT-GCN2i Demonstrates Single Agent Activity in the CT26 Mouse Tumor Model

In a CT26 mouse tumor model, oral administration of an RPT-GCN2i in four independent experiments with ten mice per experimental arm led to statistically significant ($p < 0.05$) reductions in tumor volume (at the last day of measurement) when dosed as a single agent. Single agent and combination antitumor activity has been demonstrated in additional mouse tumor models. We believe an RPT-GCN2i has the potential to have broad activity in stimulating the immune system in multiple tumor types either as a single agent or in combination with conventional or immune-based therapies.

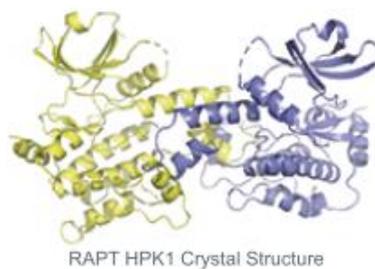
An RPT-GCN2i Demonstrates Single Agent Activity in a CT26 Mouse Tumor Model



Our HPK1 Program

HPK1 is a negative regulator of T cell activation, and the inhibition of HPK1 has the potential to enhance T cell function and antitumor activity. HPK1 was identified in a RAPT computational screen, which also identified clinically validated targets including PD-1, as well as CCR4. We are refining the chemical structure of our lead HPK1 compounds utilizing high resolution crystal structures and demonstrated that inhibition of HPK1 enhanced activation of primary mouse and human T cells in vitro, as well as antigen-specific CD8⁺ T cell effector function in vivo. Oral administration of an HPK1 inhibitor resulted in single agent antitumor activity and complete tumor regression in multiple mice when dosed in combination with a checkpoint inhibitor.

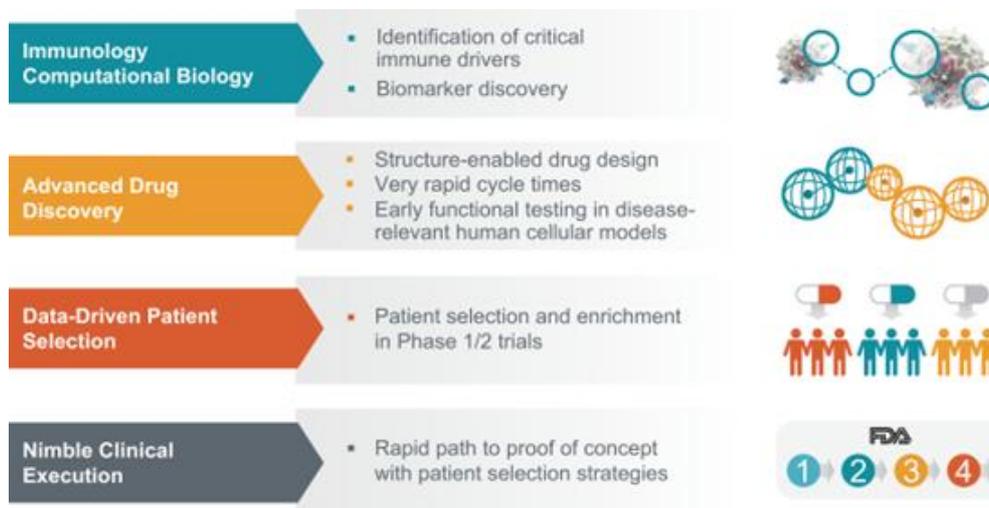
HPK1: Negative Regulator of T Cell Activation



Our Drug Discovery and Development Engine

We credit our rapid identification of therapeutic targets and drug candidate selection to our proprietary drug discovery and development engine, which relies on our team's deep expertise in immunology and chemistry, supported by strong computational biology and the ability to exploit difficult targets through our advanced discovery engine. The key pillars of our proprietary drug discovery and development engine are as follows.

Our Drug Discovery and Development Engine is Designed to Improve Probability of and Speed to Clinical Success



- 1) Computationally-Driven Disease Target and Biomarker Identification.** We use proprietary methods to identify targets that we believe have a high propensity to drive the immune response in disease states such as in oncology and inflammatory diseases by computationally screening a combination of proprietary and public databases. Through this process we also identify biomarkers that can guide our clinical development strategy and increase the probability of clinical success. A computational screen we designed to seek tumor-infiltrating lymphocyte modulating genes identified CCR4 and HPK1 as potential targets. In addition to well-known and clinically validated targets, such as PD-1 and cytotoxic T-lymphocyte associated protein 4 (“CTLA-4”), our target identification approach has also uncovered what we believe are key immune drivers of pathology that have not been fully explored but which may offer significant therapeutic potential. We have designed additional screens that have identified potential targets controlling (i) tumor and immune metabolism, (ii) resistance to checkpoint therapy and (iii) suppressive myeloid cells.
- 2) Efficient Design of Small Molecule Drug Properties.** Key to our rapid discovery of small molecules is our use of structure and pharmacophore-based drug design strategies, and machine-learning assisted structure-activity-relationships to improve potency, selectivity and pharmacokinetic (“PK”) properties, along with early testing in physiologically-relevant immune assays to rapidly identify highly selective, orally-administered small molecules. This seamless integration of biology, chemistry and pharmacokinetic disciplines allows for rapid cycle times and quick iterations between hypothesis and compound selection. An example is our lead CCR4 program that moved from concept to first-in-human testing in two and a half years. Using pharmacophore modeling we identified novel templates that selectively inhibit the CCR4 receptor. These were then rapidly refined for biological activity and robust oral bioavailability. Once lead candidates are identified, strong in-house synthetic chemistry expertise quickly develops improved synthetic methodologies that facilitates large scale synthesis needed for broader testing. Employing these techniques allowed us to assess a variety of novel chemical structures to derive our clinical candidates FLX475 and RPT193, which have favorable potency and PK properties. We are now utilizing similar strategies and leveraging novel structure-based drug design techniques to improve potency, selectivity and pharmacokinetic properties to identify leads in our GCN2 and HPK1 programs.

- 3) **Data-Driven Patient Selection.** A key strategy for every program is to identify a patient selection and enrichment approach. Our proprietary drug discovery and development engine enables enrichment and prospective selection of patients in our early clinical trials that we believe increase the probability of clinical success. Using proprietary and public databases, we can mine contextually-rich molecular and clinical data from disease tissues to identify tumor types and inflammatory disease indications that we believe will be most likely to respond to our therapeutic agents.
- 4) **Nimble Clinical Execution.** We believe our precision medicine approach enables a rapid path to proof-of-concept and the potential for accelerated regulatory approval.

Intellectual Property

We strive to protect the proprietary technology, inventions and improvements that are commercially important to our business, including obtaining, maintaining, enforcing and defending our intellectual property rights, including patent rights, whether developed internally or licensed from third parties. We rely, in part, on trade secrets and know-how relating to our proprietary technology and drug candidates and continuing innovation to develop, strengthen and maintain our proprietary position. We also plan to rely, in part, on data exclusivity, market exclusivity and patent term extensions if and when available. Our commercial success will depend in part on our ability to obtain and maintain patent and other intellectual property protection for our technology, inventions and improvements; to preserve the confidentiality of our trade secrets; to defend and enforce our proprietary rights, including any patents that we own or may obtain in the future; and to operate without infringing, misappropriating or otherwise violating the valid and enforceable patents and other intellectual property rights of third parties. Intellectual property rights may not address all potential threats to our competitive advantage.

C-C Chemokine Receptor 4 (CCR4) Antagonist Franchise

As of December 31, 2019, our patent portfolio includes five patent families directed to CCR4 inhibiting compounds and their therapeutic uses, three of which are directed to FLX475 and another of which is directed to RPT193, as discussed in more depth below.

FLX475

As of December 31, 2019, we own one issued U.S. patent directed to FLX475 and other related compounds, pharmaceutical compositions comprising the same and therapeutic methods of using the same for the treatment of diseases including cancers, one corresponding pending and allowed patent application in the U.S. and 16 corresponding pending patent applications in Australia, Brazil, Canada, China, Hong Kong, the European Patent Convention, India, Israel, Japan, South Korea, Mexico, New Zealand, Russia, Singapore, South Africa and Taiwan. Our issued U.S. patent, and any patents that may issue from our pending applications worldwide, are scheduled to expire in 2037, excluding any additional term for patent term adjustment(s) or extension(s), and assuming payment of all applicable maintenance or annuity fees. We also own one pending US provisional patent application directed to polymorphic forms of FLX475 and formulations thereof. In addition to the composition of matter patent and patent applications described above, as of December 31, 2019, we own one pending U.S. patent application, one pending Patent Cooperation Treaty (“PCT”) patent application and one pending Taiwan patent application directed to the use of CCR4 antagonists generally, including FLX475 specifically, in therapeutic methods of treating EBV positive cancers. Any patents that may issue from these pending applications, in the United States and worldwide, are scheduled to expire in 2038, excluding any additional term for patent term adjustment(s) or extension(s), and assuming national phase entries are timely made based upon the pending PCT application and payment of all applicable maintenance or annuity fees. Our pending PCT patent application is not eligible to become an issued patent until, among other things, we file a national stage patent application(s) within 30 months in the countries in which we seek patent protection. If we do not timely file any national stage patent applications, we may lose our priority date with respect to our PCT patent application and any patent protection on the inventions disclosed in such PCT patent application.

RPT193

As of December 31, 2019, we own one pending U.S. patent application, one pending PCT patent application and one pending Taiwan patent application directed to RPT193 and other related compounds, pharmaceutical compositions comprising the same and therapeutic methods of using the same for the treatment of diseases such as immune, inflammatory, metabolic diseases or cancers. Any patents that may issue from these pending applications, in the United States and worldwide, are scheduled to expire in 2039, excluding any additional term for patent term adjustment(s) or extension(s), and assuming national phase entries are timely made based upon the pending PCT application and payment of all applicable maintenance or annuity fees. Our pending PCT patent application is not eligible to become an issued patent until, among other things, we file a national stage patent application(s) within 30 months in the countries in which we seek patent protection. If we do not timely file any national stage patent applications, we may lose our priority date with respect to our PCT patent application and any patent protection on the inventions disclosed in such PCT patent application.

Our RPT-GCN2i Program

As of December 31, 2019, with respect to RPT-GCN2i product development, we own one pending U.S. provisional patent application, one pending U.S. non-provisional patent application, one pending PCT patent application and one pending Taiwan patent application, all directed to certain compounds in development, pharmaceutical compositions of the same and therapeutic methods of using the same. Any patents that may issue from these pending patent applications are scheduled to expire in 2039, excluding any additional term for patent term adjustment or extension, and assuming national phase entries are timely made based upon the pending PCT application and payment of all applicable maintenance or annuity fees. Our pending PCT patent application is not eligible to become an issued patent until, among other things, we file a national stage patent application(s) within 30 months in the countries in which we seek patent protection. If we do not timely file any national stage patent applications, we may lose our priority date with respect to our PCT patent application and any patent protection on the inventions disclosed in such PCT patent application.

Any of our provisional patent applications are not eligible to become issued patents until, among other things, we file a non-provisional patent application within 12 months of filing the related provisional patent application. If we do not timely file any non-provisional patent application, we may lose our priority date with respect to any such provisional patent application and any patent protection on the inventions disclosed in any such provisional patent application. With respect to our drug candidates, we intend to develop and commercialize in the normal course of business, we intend to pursue patent protection covering, when possible, compositions, methods of use, dosing and formulations. We may also pursue patent protection with respect to manufacturing and drug development processes and technologies. We do not currently own any patents or patent applications relating to our proprietary discovery and development engine. Obtaining and maintaining patent protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by governmental patent agencies. We may not be able to obtain patent protections for our compositions, methods of use, dosing and formulations, manufacturing and drug development processes and technologies throughout the world. Issued patents can provide protection for varying periods of time, depending upon the date of filing of the patent application, the date of patent issuance and the legal term of patents in the countries in which they are obtained. In general, patents issued for applications filed in the United States expire 20 years after the earliest effective filing date. In addition, in certain instances, the term of an issued U.S. patent that covers or claims an FDA approved product can be extended to recapture a portion of the term effectively lost as a result of the FDA regulatory review period, which is called patent term extension. The restoration period cannot be longer than five years and the total patent term, including the restoration period, must not exceed 14 years following FDA approval. For more information regarding patent term extensions, please see “Business—U.S. Patent Term Restoration and Marketing Exclusivity” below. The term of patents outside of the United States varies in accordance with the laws of the foreign jurisdiction, but typically is also 20 years from the earliest effective filing date. However, the actual protection afforded by a patent varies on a product-by-product basis, from country-to-country, and depends upon many factors, including the type of patent, the scope of its coverage, the availability of regulatory-related extensions, the availability of legal remedies in a particular country and the validity and enforceability of the patent. The patent term may be inadequate to protect our competitive position on our products for an adequate amount of time. For more information regarding the risks related to our intellectual property, please see “Risk Factors—Risks Related to Our Intellectual Property.”

The patent positions of companies like ours are generally uncertain and involve complex legal and factual questions. No consistent policy regarding the scope of claims allowable in patents in the field of biopharmaceuticals has emerged in the United States. The relevant patent laws and their interpretation outside of the United States is also uncertain. Changes in either the patent laws or their interpretation in the United States and other countries may diminish our ability to protect our technology or drug candidates and could affect the value of such intellectual property. In particular, our ability to stop third parties from making, using, selling, offering to sell or importing products that infringe our intellectual property will depend in part on our success in obtaining, maintaining, enforcing and defending patent claims that cover our technology, inventions and improvements. We cannot guarantee that patents will be granted with respect to any of our pending patent applications or with respect to any patent applications we may file in the future, nor can we ensure that any patents that may be granted to us in the future will be commercially useful in protecting our products, the methods of use or manufacture of those products. Moreover, any issued patents we obtain do not guarantee us the right to practice our technology in relation to the commercialization of our products. Patent and other intellectual property rights in the pharmaceutical and biotechnology space are evolving and involve many risks and uncertainties. For example, third parties may have blocking patents that could be used to prevent us from commercializing our drug candidates and practicing our proprietary technology, and our patent rights may be challenged, invalidated or circumvented, which could limit our ability to stop competitors from marketing related products or could limit the term of patent protection that otherwise may exist for our drug candidates. In addition, the scope of the rights granted under any issued patent that we own or license, now or in the future, may not provide us with protection or competitive advantages against competitors with similar technology. Furthermore, our competitors may independently develop similar technologies that are outside the scope of the rights granted under any issued patents we obtain. For these reasons, we may face competition with respect to our drug candidates. Moreover, because of the extensive time required for development, testing and regulatory review of a potential product, it is possible that, before any particular drug candidate can be commercialized, any patent protection for such product may expire or remain in force for only a short period following commercialization, thereby reducing the commercial advantage the patent provides.

In addition to patent protection, we rely upon unpatented trade secrets and confidential know-how and continuing technological innovation to develop and maintain our competitive position. However, trade secrets and confidential information are difficult to protect. We seek to protect our proprietary information, in part, using confidentiality agreements with any future collaborators, scientific advisors, employees and consultants, and invention assignment agreement with our employees. We also have agreements requiring assignment of inventions with selected consultants, scientific advisors and collaborators. These agreements may not provide meaningful protection. These agreements may also be breached, and we may not have an adequate remedy for any such breach. In addition, our trade secrets and/or confidential know-how may become known or be independently developed by a third party, or misused by any collaborator to whom we disclose such information. Despite any measures taken to protect our intellectual property, unauthorized parties may attempt to copy aspects of our products or drug candidates or obtain or use information that we regard as proprietary. Although we take steps to protect our proprietary information, third parties may independently develop the same or similar proprietary information or may otherwise gain access to our proprietary information. As a result, we may be unable to meaningfully protect our trade secrets and proprietary information. For more information regarding the risks related to our intellectual property, please see “Risk Factors—Risks Related to Our Intellectual Property.”

Collaboration and License Agreement

In December 2019, we entered into a Collaboration and License Agreement with Hanmi, a corporation organized under the laws of the Republic of Korea, pursuant to which we granted Hanmi an exclusive license to develop, manufacture and commercialize FLX475 and related compounds and products with respect to human cancers in the Hanmi Territory and certain sublicense rights. In consideration of such rights, under the agreement we are entitled to \$10.0 million in an upfront payment of \$4.0 million and an expected near-term milestone payment of \$6.0 million, and will be eligible to receive (i) additional contingent payments of up to \$108.0 million upon the achievement of specified milestones, consisting of up to \$48.0 million based on the dosing of the first patient in a Phase 3 clinical trial in the Hanmi Territory and the filing and approval of a new drug application in the Hanmi Territory and up to \$60.0 million based on annual net sales, and (ii) low double-digit royalties on future net sales of FLX475 in the Hanmi Territory. Royalties will be payable on a product-by-product and country-by-country basis for a period commencing with the first commercial sale until the latest of (a) the expiration of the relevant patent right, (b) the expiration of regulatory or data exclusivity granted by the applicable governmental authority and (c) five years from such first commercial sale (such period being the "Royalty Term" for such product and country); provided that the royalties will be reduced (x) by 50% if the product in question is not covered by a valid claim during the Royalty Term in the applicable country, (y) in connection with a license obtained from such third party in order to develop, manufacture or commercialize FLX475 in the Hanmi Territory and (z) by a percentage dependent on any generic products' market share in the Hanmi Territory. If we sponsor Phase 3 clinical trials for FLX475 for human cancers, Hanmi will have the right to participate in such trials in the Hanmi Territory. We will supply FLX475 for use in Hanmi's Phase 2 clinical trials and Hanmi will reimburse us for our manufacturing costs. If requested, we will facilitate technology transfer to Hanmi for their manufacture of FLX475 product for Phase 3 trials and commercialization. The term of the agreement will continue until Hanmi's royalty payment obligations have expired, unless sooner terminated by Hanmi for convenience, safety reasons, if we abandon our development of FLX475 and related products, if we do not consent to Hanmi's use of FLX475 in any study required by applicable governmental authorities or breach by us of our representations and warranties under the agreement. The agreement may also be terminated by either party in connection with a material breach by, or insolvency of, the other party. If Hanmi terminates the agreement with cause or for our abandonment of development of FLX475 and related products, material breach or insolvency, Hanmi will retain a perpetual license to certain our intellectual property related to FLX475.

Clinical Trial Collaboration and Supply Agreement

In November 2018, we entered into a clinical trial collaboration and supply agreement with MSD International GmbH, an affiliate of Merck (known as MSD outside the United States and Canada), under which we will conduct a clinical trial evaluating FLX475 as a monotherapy and in combination with Keytruda (pembrolizumab), Merck's anti-PD-1 therapy, in patients with advanced cancers. We are the sponsor of the clinical trial and are responsible for the costs of conducting it, and Merck will supply Keytruda for use in the clinical trial at no charge to us except that we may be required to reimburse Merck's manufacturing costs upon certain early termination events. Neither party will have any other obligations to reimburse any costs or expenses incurred by the other party. We retain ownership of the quantities of FLX475 used in the clinical trial and we will own the quantities of Keytruda supplied to us by Merck for use in the clinical trial. The agreement provides for joint ownership of any inventions, clinical data and results generated in the clinical trial that relate to the combined use of the two drugs. Merck will solely own any inventions generated in the clinical trial that relate solely to Keytruda and all data resulting from testing performed by or on behalf of Merck upon samples collected during the clinical trial. We will solely own any inventions generated in the clinical trial that relate solely to FLX475, clinical data resulting from the use of FLX475 as a monotherapy, and from all data resulting from testing performed by or on behalf of us upon samples collected during the clinical trial. The term of the agreement will continue until delivery of the final report for the clinical trial, provided that either party may terminate the agreement due to the other party's uncured material breach, a violation of anti-corruption obligations, patient safety concerns, regulatory action that prevents supply of such party's compound, or such party's termination of its compound's development or withdrawal of its compound's regulatory approval. Merck may also terminate the agreement if we fail to make any changes to the clinical trial protocol regarding the use of Keytruda that are reasonably requested by Merck to address any concern raised by Merck that Keytruda is being used in the clinical trial in an unsafe manner.

Competition

The biotechnology and pharmaceutical industries, including the oncology and inflammatory disease fields, are characterized by rapidly advancing technologies, strong competition and an emphasis on intellectual property protection. We face substantial competition from many different sources, including large and specialty pharmaceutical and biotechnology companies, academic research institutions, governmental agencies and public and private research institutions. We believe that the key competitive factors affecting the success of any of our drug candidates will include patient selection strategies, efficacy (single and combination strategies), safety profile, method of administration, cost, level of promotional activity and intellectual property protection.

If approved, FLX475 will compete with current therapies approved for the treatment of cancer, particularly immuno-oncology. Potential immuno-oncology therapeutics are being developed or marketed by many large and specialty pharmaceutical and biotechnology companies such as Merck, Bristol-Myers Squibb, Novartis, AstraZeneca, Pfizer and Roche/Genentech. Additionally, there is one approved CCR4-targeting T_{reg}-depleting antibody, mogamulizumab, developed by Kyowa Hakko Kirin, as well as other T_{reg}-targeting agents currently in early development by companies such as ChemoCentryx, Tusk/Roche and Agenus/Gilead.

RPT193 is a CCR4 antagonist intended to treat allergic disease, including AD and other diseases along the atopic march. If approved for AD, we will face branded competition from dupilumab (marketed by Regeneron and Sanofi as Dupixent®), a biologic recently approved. In addition, there are several companies developing treatments that may be approved for AD, including large pharmaceutical and biotechnology companies such as Pfizer, Lilly/Incyte, AbbVie, AnaptysBio, Dermira and Amgen/AstraZeneca.

There are several large and specialty pharmaceutical companies, as well as biotechnology companies with marketed or late stage assets targeting the Th2 pathway along the atopic march, which includes Amgen, AstraZeneca, Chiesi Farmaceutici, GSK, Novartis, Roche, Sanofi and Teva.

Many of the companies against which we may compete have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals and marketing approved products than we do. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical trials sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

Government Regulation

The FDA and other regulatory authorities at federal, state, and local levels, as well as in foreign countries, extensively regulate, among other things, the research, development, testing, manufacture, quality control, import, export, safety, effectiveness, labeling, packaging, storage, distribution, record keeping, approval, advertising, promotion, marketing, post-approval monitoring and post-approval reporting of drug products such as those we are developing. We, along with third-party contractors, will be required to navigate the various preclinical, clinical and commercial approval requirements of the governing regulatory agencies of the countries in which we wish to conduct studies or seek approval or licensure of our drug candidates.

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

- completion of preclinical laboratory tests and animal studies performed in accordance with the FDA's current Good Laboratory Practices ("GLP"), regulation;
- submission to the FDA of an IND, which must become effective before clinical trials may begin and must be updated annually or when significant changes are made;
- approval by an independent Institutional Review Board ("IRB"), or ethics committee at each clinical site before the trial is commenced;

- performance of adequate and well-controlled human clinical trials to establish the safety and efficacy of the proposed drug candidate for its intended purpose;
- preparation of and submission to the FDA of an NDA after completion of all pivotal clinical trials;
- satisfactory completion of an FDA Advisory Committee review, if applicable;
- a determination by the FDA within 60 days of its receipt of an NDA to file the application for review;
- satisfactory completion of an FDA pre-approval inspection of the manufacturing facility or facilities at which the proposed product is produced to assess compliance with cGMP, and of selected clinical investigation sites to assess compliance with Good Clinical Practices (“GCP”); and
- FDA review and approval of the NDA to permit commercial marketing of the product for particular indications for use in the United States.

Preclinical and Clinical Development

Prior to beginning the first clinical trial with a drug candidate, we must submit an IND to the FDA. An IND is a request for authorization from the FDA to administer an investigational new drug product to humans. The central focus of an IND submission is on the general investigational plan and the protocol(s) for clinical trials. The IND also includes results of animal and in vitro studies assessing the toxicology, pharmacokinetics, pharmacology and pharmacodynamic characteristics of the product; chemistry, manufacturing and controls information; and any available human data or literature to support the use of the investigational product. An IND must become effective before human clinical trials may begin. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA, within the 30-day time period, raises safety concerns or questions about the proposed clinical trial. In such a case, the IND may be placed on clinical hold and the IND sponsor and the FDA must resolve any outstanding concerns or questions before the clinical trial can begin. Submission of an IND therefore may or may not result in FDA authorization to begin a clinical trial.

Clinical trials involve the administration of the investigational product to human subjects under the supervision of qualified investigators in accordance with GCPs, which include the requirement that all research subjects provide their informed consent for their participation in any clinical trial. Clinical trials are conducted under protocols detailing, among other things, the objectives of the study, the parameters to be used in monitoring safety and the effectiveness criteria to be evaluated. A separate submission to the existing IND must be made for each successive clinical trial conducted during product development and for any subsequent protocol amendments. Furthermore, an independent IRB for each site proposing to conduct the clinical trial must review and approve the plan for any clinical trial and its informed consent form before the clinical trial begins at that site, and must monitor the study until completed. Regulatory authorities, the IRB or the sponsor may suspend a clinical trial at any time on various grounds, including a finding that the subjects are being exposed to an unacceptable health risk or that the trial is unlikely to meet its stated objectives. Some studies also include oversight by an independent group of qualified experts organized by the clinical trial sponsor, known as a data safety monitoring board, which provides authorization for whether or not a study may move forward at designated check points based on access to certain data from the study and may halt the clinical trial if it determines that there is an unacceptable safety risk for subjects or other grounds, such as no demonstration of efficacy. There are also requirements governing the reporting of ongoing clinical trials and clinical trial results to public registries.

For purposes of NDA approval, human clinical trials are typically conducted in three sequential phases that may overlap.

- *Phase 1*—The investigational product is initially introduced into healthy human subjects or patients with the target disease or condition. These studies are designed to test the safety, dosage tolerance, absorption, metabolism and distribution of the investigational product in humans, the side effects associated with increasing doses and, if possible, to gain early evidence on effectiveness.

- *Phase 2*—The investigational product is administered to a limited patient population with a specified disease or condition to evaluate the preliminary efficacy, optimal dosages and dosing schedule and to identify possible adverse side effects and safety risks. Multiple Phase 2 clinical trials may be conducted to obtain information prior to beginning larger and more expensive Phase 3 clinical trials. Some trials may combine aspects of Phase 1 and Phase 2 into a single clinical trial, which we refer to as a “seamless” study that can examine both safety in healthy volunteers and safety and preliminary efficacy in patients with a specific disease.
- *Phase 3*—The investigational product is administered to an expanded patient population to further evaluate dosage, to provide statistically significant evidence of clinical efficacy and to further test for safety, generally at multiple geographically dispersed clinical trial sites. These clinical trials are intended to establish the overall risk/benefit ratio of the investigational product and to provide an adequate basis for product approval.

A registrational trial is a clinical trial that adequately meets regulatory agency requirements for the evaluation of a drug candidate’s efficacy and safety such that it can be used to justify the approval of the drug. Generally, registrational trials are Phase 3 trials but may be Phase 2 trials if the trial design provides a reliable assessment of clinical benefit, particularly in situations where there is an unmet medical need.

In some cases, the FDA may require, or companies may voluntarily pursue, additional clinical trials after a product is approved to gain more information about the product. These so-called Phase 4 studies may be made a condition to approval of the NDA. Concurrent with clinical trials, companies may complete additional animal studies and develop additional information about the characteristics of the drug candidate, and must finalize a process for manufacturing the product in commercial quantities in accordance with cGMP requirements. The manufacturing process must be capable of consistently producing quality batches of the drug candidate and, among other things, must develop methods for testing the final product. Additionally, appropriate packaging must be selected and tested and stability studies must be conducted to demonstrate that the drug candidate does not undergo unacceptable deterioration over its shelf life.

NDA Submission and Review

Assuming successful completion of all required testing in accordance with all applicable regulatory requirements, the results of product development, nonclinical studies and clinical trials are submitted to the FDA as part of an NDA requesting approval to market the product for one or more indications. The NDA must include all relevant data available from pertinent preclinical and clinical trials, including negative or ambiguous results as well as positive findings, together with detailed information relating to the product’s chemistry, manufacturing, controls, and proposed labeling, among other things. A determination by the FDA within 60 days of the receipt of an NDA to file the application for review for its completeness is initiated at the time of submission. If the FDA determines there is significance to the missing or incomplete information in the context of the proposed drug product, the proposed indication(s) and the amount of time needed to address any given deficiency, it can issue a refusal-to-file letter. The submission of an NDA requires payment of a substantial application user fee to FDA, unless a waiver or exemption applies.

Once an NDA has been submitted, the FDA's goal is to review standard applications within ten months after it accepts the application for filing, or, if the application qualifies for priority review, six months after the FDA accepts the application for filing. In both standard and priority reviews, the review process is often significantly extended by FDA requests for additional information or clarification. The FDA reviews an NDA to determine, among other things, whether a product is safe and effective. The FDA may convene an advisory committee to provide clinical insight on application review questions. Before approving an NDA, the FDA will typically inspect the facility or facilities where the product is 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. If the FDA determines that the application, manufacturing process or manufacturing facilities are not acceptable, it will outline the deficiencies in the submission and often will request additional testing or information. Notwithstanding the submission of any requested additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval.

After the FDA evaluates an NDA and conducts inspections of manufacturing facilities where the product will be produced, 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 will describe all of the deficiencies that the FDA has identified in the NDA. In issuing the Complete Response letter, the FDA may recommend actions that the applicant might take to place the NDA in condition for approval, including requests for additional information or clarification. The FDA may delay or refuse approval of an NDA if applicable regulatory criteria are not satisfied, require additional testing or information and/or require post-marketing testing and surveillance to monitor safety or efficacy of a product.

If regulatory approval of a product is granted, such approval will be granted for particular indications and may entail limitations on the indicated uses for which such product may be marketed. For example, the FDA may approve the NDA with a Risk Evaluation and Mitigation Strategy ("REMS"), to ensure the benefits of the product outweigh its risks. A REMS is a safety strategy to manage a known or potential serious risk associated with a product and to enable patients to have continued access to such medicines by managing their safe use, and could include medication guides, physician communication plans or elements to assure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. The FDA also may condition approval on, among other things, changes to proposed labeling or the development of adequate controls and specifications. Once approved, the FDA may withdraw the product approval if compliance with pre- and post-marketing requirements is not maintained or if problems occur after the product reaches the marketplace. The FDA may require one or more Phase 4 post-market studies and surveillance to further assess and monitor the product's safety and effectiveness after commercialization, and may limit further marketing of the product based on the results of these post-marketing studies.

Expedited Development and Review Programs

The FDA offers a number of expedited development and review programs for qualifying drug candidates. The fast track program is intended to expedite or facilitate the process for reviewing new products that meet certain criteria. Specifically, new products are eligible for fast track designation if they are intended to treat a serious or life-threatening disease or condition and demonstrate the potential to address unmet medical needs for the disease or condition. Fast track designation applies to the combination of the product and the specific indication for which it is being studied. The sponsor of a fast track product has opportunities for frequent interactions with the review team during product development and, once an NDA is submitted, the product may be eligible for priority review. A fast track product may also be eligible for rolling review, where the FDA may consider for review sections of the NDA on a rolling basis before the complete application is submitted, if the sponsor provides a schedule for the submission of the sections of the NDA, the FDA agrees to accept sections of the NDA and determines that the schedule is acceptable, and the sponsor pays any required user fees upon submission of the first section of the NDA.

A product intended to treat a serious or life-threatening disease or condition may also be eligible for breakthrough therapy designation to expedite its development and review. A product can receive breakthrough therapy designation if preliminary clinical evidence indicates that the product may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. The designation includes all of the fast track program features, as well as more intensive FDA interaction and guidance beginning as early as Phase 1 and an organizational commitment to expedite the development and review of the product, including involvement of senior managers.

Any product is eligible for priority review if it has the potential to provide a significant improvement in the treatment, diagnosis or prevention of a serious disease or condition compared to marketed products. For products containing new molecular entities, priority review designation means the FDA's goal is to take action on the marketing application within six months of the 60-day filing date (compared with ten months under standard review).

Additionally, products studied for their safety and effectiveness in treating serious or life-threatening diseases or conditions may receive accelerated approval upon a determination that the product has an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit, or on a clinical endpoint that can be measured earlier than irreversible morbidity or mortality, that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments. As a condition of accelerated approval, the FDA will generally require the sponsor to perform adequate and well-controlled post-marketing clinical trials to verify and describe the anticipated effect on irreversible morbidity or mortality or other clinical benefit. In addition, the FDA currently requires, as a condition for accelerated approval, pre-approval of promotional materials, which could adversely impact the timing of the commercial launch of the product.

Orphan Drug Designation

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

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 exclusive approval (or 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. Orphan drug exclusivity does not prevent the FDA from approving a different drug or biologic for the same disease or condition, or the same drug or biologic for a different disease or condition. Among the other benefits of orphan drug designation are tax credits for certain research and a waiver of the application user fee.

A designated orphan drug may not receive orphan drug exclusivity if it is approved for a use that is broader than the indication for which it received orphan designation. In addition, exclusive marketing rights in the United States 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.

Post-Approval Requirements

Any products manufactured or distributed by us pursuant to FDA approvals are subject to pervasive and continuing regulation by the FDA, including, among other things, requirements relating to record-keeping, reporting of adverse experiences, periodic reporting, product sampling and distribution, and advertising and promotion of 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. There also are continuing user fee requirements, under which FDA assesses an annual program fee for each product identified in an approved NDA. Drug manufacturers and their subcontractors are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with cGMP, which impose certain procedural and documentation requirements upon us and our third-party manufacturers. Changes to the manufacturing process are strictly regulated, and, depending on the significance of the change, may require prior FDA approval before being implemented. FDA regulations also require investigation and correction of any deviations from cGMP and impose reporting requirements upon us and any third-party manufacturers that we may decide to use. Accordingly, manufacturers must continue to expend time, money and effort in the area of production and quality control to maintain compliance with cGMP and other aspects of regulatory compliance.

The FDA may withdraw 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 restrictions or other restrictions under an REMS program. Other potential consequences include, among other things:

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

The FDA closely regulates the marketing, labeling, advertising and promotion of biologics and drugs. A company can make only those claims relating to safety and efficacy, purity and potency that are approved by the FDA and in accordance with the provisions of the approved label. However, companies may share truthful and not misleading information that is otherwise consistent with a product's FDA approved labeling. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses. Failure to comply with these requirements can result in, among other things, adverse publicity, warning letters, corrective advertising and potential civil and criminal penalties. Physicians may prescribe legally available products for uses that are not described in the product's labeling and that differ from those tested by us and approved by the FDA. Such off-label uses are common across medical specialties. Physicians may believe that such off-label uses are the best treatment for patients in varied circumstances. The FDA does not regulate the behavior of physicians in their choice of treatments. The FDA does, however, restrict manufacturer's communications on the subject of off-label use of their products.

FDA Regulation of Companion Diagnostics

A therapeutic product may rely upon an in vitro companion diagnostic for use in selecting the patients that will be more likely to respond to that therapy. If an in vitro diagnostic is essential to the safe and effective use of the therapeutic product, then the FDA generally will require approval or clearance of the diagnostic at the same time that the FDA approves the therapeutic product. According to FDA guidance, a companion diagnostic device used to make treatment decisions in clinical trials of a drug generally will be considered an investigational device unless it is employed for an intended use for which the device is already approved or cleared. If used to make critical treatment decisions, such as patient selection, the diagnostic device generally will be considered a significant risk device under the FDA's Investigational Device Exemption ("IDE"), regulations. Thus, the sponsor of the diagnostic device will be required to comply with the IDE regulations. According to the guidance, if a diagnostic device and a drug are to be studied together to support their respective approvals, both products can be studied in the same investigational trial, if the trial meets both the requirements of the IDE regulations and the IND regulations. The guidance provides that depending on the details of the trial plan and subjects, a sponsor may seek to submit an IND alone, or both an IND and an IDE.

Pursuing FDA approval of an in vitro companion diagnostic would require either a pre-market notification, also called 510(k) clearance, or a pre-market approval ("PMA"), for that diagnostic. The review of companion diagnostics involves coordination of review with the FDA's Center for Devices and Radiological Health.

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

U.S. Patent Term Restoration and Marketing Exclusivity

The term of a patent depends upon the laws of the country in which it is issued. In most jurisdictions, a patent term is 20 years from the earliest filing date of a non-provisional patent application. Depending upon the timing, duration and specifics of the FDA approval of our drug candidates, one or more issued U.S. patents we obtain may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984, commonly referred to as the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent restoration term of up to five years beyond the normal expiration of the patent, limited to the approved indication (or any additional indications approved during the period of extension), as compensation for patent term lost during the FDA regulatory review process. The patent term restoration period granted on a patent covering a product is generally one-half the time between the effective date of an IND and the submission date of an NDA, plus the time between the submission date of an NDA and the ultimate approval date of that application. However, patent term restoration cannot extend the remaining term of a patent beyond a total of 14 years from the product's approval date. Only one patent applicable to an approved product is eligible for extension and only those claims covering the approved product, a method for using it, or a method for manufacturing it may be extended. Additionally, the application for the extension must be submitted prior to the expiration of the patent in question. A patent that covers multiple products for which approval is sought can only be extended in connection with one of the approvals. The USPTO, in consultation with the FDA, reviews and approves the application for any patent term extension or restoration. In the future, we intend to apply for restoration of patent term for an issued patent we own, and if eligible for such restoration, to add patent term beyond its current expiration date, depending on the expected length of the clinical trials and other factors involved in the filing of the relevant NDA. There can be no assurance that any of our pending patent applications will be issued or that we will benefit from any patent term extension.

Marketing exclusivity provisions under the United States Federal Food, Drug, and Cosmetic Act ("FDCA") can also delay the submission or the approval of certain marketing applications for competing products. The FDCA provides a five-year period of non-patent marketing exclusivity within the United States to the first applicant to obtain approval of an NDA for a new chemical entity. A drug is a new chemical entity if the FDA has not previously approved any other new drug containing the same active moiety, which is the molecule or ion responsible for the action of the drug substance. During the exclusivity period, the FDA may not accept for review an abbreviated new drug application ("ANDA"), or a 505(b)(2) NDA submitted by another company for another drug based on the same active moiety, regardless of whether the drug is intended for the same indication as the original innovator drug or for another indication. However, an application may be submitted after four years if it contains a certification of patent invalidity or non-infringement to one of the patents listed with the FDA by the innovator NDA holder. The FDCA also provides three years of marketing exclusivity for an NDA, or supplement to an existing NDA, if new clinical investigations, other than bioavailability studies, that were conducted or sponsored by the applicant are deemed by the FDA to be essential to the approval of the application, for example new indications, dosages or strengths of an existing drug. This three-year exclusivity covers only the modification for which the drug received approval on the basis of the new clinical investigations and does not prohibit the FDA from approving ANDAs or 505(b)(2) applications for drugs containing the active agent for the original indication or condition of use. Five-year and three-year exclusivity will not delay the submission or approval of a full NDA. However, an applicant submitting a full NDA would be required to conduct or obtain a right of reference to all of the preclinical studies and adequate and well-controlled clinical trials necessary to demonstrate safety and effectiveness. Orphan drug exclusivity, as described below, may offer a seven-year period of marketing exclusivity, except in certain circumstances. Pediatric exclusivity is another type of regulatory market exclusivity in the United States. Pediatric exclusivity, if granted, adds six months to existing exclusivity periods and patent terms. This six-month exclusivity, which runs from the end of other exclusivity protection or patent term, may be granted based on the voluntary completion of a pediatric trial in accordance with an FDA-issued "Written Request" for such a trial.

European Drug Development

In Europe, our future drugs may also be subject to extensive regulatory requirements. As in the United States, medicinal products can only be marketed if a marketing authorization from the competent regulatory agencies has been obtained.

Similar to the United States, the various phases of preclinical and clinical research in Europe are subject to significant regulatory controls. Although the EU Clinical Trials Directive 2001/20/EC has sought to harmonize the European Union clinical trials regulatory framework, setting out common rules for the control and authorization of clinical trials in the European Union, the European Union Member States have transposed and applied the provisions of the Directive differently. This has led to significant variations in the member state regimes. Under the current regime, before a clinical trial can be initiated it must be approved in each of the European Union countries where the trial is to be conducted by two distinct bodies: the National Competent Authority (“NCA”), and one or more Ethics Committees (“ECs”). Under the current regime, all suspected unexpected serious adverse reactions to the investigated drug that occur during the clinical trial have to be reported to the NCA and ECs of the Member State where they occurred.

In 2014, a new Clinical Trials Regulation 536/2014, replacing the current Directive, was adopted. The new Regulation will become directly applicable in all EU Member States (without national implementation) once the EU Portal and Database are fully functional. It is expected that the Regulation will apply in 2019. The new Regulation seeks to simplify and streamline the approval of clinical trials in the European Union. For example, the sponsor shall submit a single application for approval of a clinical trial via the EU Portal. As part of the application process, the sponsor shall propose a reporting Member State, who will coordinate the validation and evaluation of the application. The reporting Member State shall consult and coordinate with the other concerned Member States. If an application is rejected, it can be amended and resubmitted through the EU Portal. If an approval is issued, the sponsor can start the clinical trial in all concerned Member States. However, a concerned Member State can in limited circumstances declare an “opt-out” from an approval. In such a case, the clinical trial cannot be conducted in that Member State. The Regulation also aims to streamline and simplify the rules on safety reporting and introduces enhanced transparency requirements such as mandatory submission of a summary of the clinical trial results to the EU Database.

European Drug Review and Approval

In the European Economic Area (“EEA”), which is comprised of the 28 Member States of the European Union plus Norway, Iceland and Liechtenstein, medicinal products can only be commercialized after obtaining a Marketing Authorization (“MA”). There are two types of marketing authorizations.

The Community MA, which is issued by the European Commission through the Centralized Procedure, based on the opinion of the Committee for Medicinal Products for Human Use (“CHMP”), of the EMA and which is valid throughout the entire territory of the EEA. The Centralized Procedure is mandatory for certain types of drugs, such as biotechnology medicinal drugs, orphan medicinal drugs, and medicinal drugs containing a new active substance indicated for the treatment of AIDS, cancer, neurodegenerative disorders, diabetes, autoimmune and viral diseases. The Centralized Procedure is optional for drugs containing a new active substance not yet authorized in the EEA, or for drugs that constitute a significant therapeutic, scientific or technical innovation or which are in the interest of public health in the European Union.

National MAs, which are issued by the competent authorities of the Member States of the EEA and only cover their respective territory, are available for drugs not falling within the mandatory scope of the Centralized Procedure. Where a drug has already been authorized for marketing in a Member State of the EEA, this National MA can be recognized in other Member States through the Mutual Recognition Procedure. If the drug has not received a National MA in any Member State at the time of application, it can be approved simultaneously in various Member States through the Decentralized Procedure. Under the Decentralized Procedure, an identical dossier is submitted to the competent authorities of each of the Member States in which the MA is sought, one of which is selected by the applicant as the Reference Member State (“RMS”). The competent authority of the RMS prepares a draft assessment report, a draft summary of the drug characteristics (“SPC”), and a draft of the labeling and package leaflet, which are sent to the other Member States (“Member States Concerned”) for their approval. If the Member States Concerned raise no objections, based on a potential serious risk to public health, to the assessment, SPC, labeling, or packaging proposed by the RMS, the drug is subsequently granted a national MA in all the Member States (i.e. in the RMS and the Member States Concerned).

Under the above-described procedures, before granting the MA, the EMA or the competent authorities of the Member States of the EEA make an assessment of the risk-benefit balance of the drug on the basis of scientific criteria concerning its quality, safety and efficacy.

European Chemical Entity Exclusivity

In Europe, new chemical entities, sometimes referred to as new active substances, qualify for eight years of data exclusivity upon marketing authorization and an additional two years of market exclusivity. This data exclusivity, if granted, prevents regulatory authorities in the European Union from referencing the innovator's data to assess a generic application for eight years, after which generic marketing authorization can be submitted, and the innovator's data may be referenced, but not approved for two years. The overall ten-year period will be extended to a maximum of 11 years if, during the first eight years of those ten years, the marketing authorization holder obtains an authorization for one or more new therapeutic indications which, during the scientific evaluation prior to their authorization, are held to bring a significant clinical benefit in comparison with existing therapies.

European Union General Data Protection Regulation

In addition to EU regulations related to the approval and commercialization of our products, we may be subject to the EU's General Data Protection Regulation ("GDPR"). The GDPR went into effect on May 25, 2018. The GDPR introduced new data protection requirements in the European Union, as well as potential fines for noncompliant companies of up to the greater of €20 million or 4% of annual global revenue. The regulation imposes numerous new requirements for the collection, use, storage and disclosure of personal information, including more stringent requirements relating to consent and the information that must be shared with data subjects about how their personal information is used, the obligation to notify regulators and affected individuals of personal data breaches, extensive new internal privacy governance obligations and obligations to honor expanded rights of individuals in relation to their personal information (e.g., the right to access, correct and delete their data). In addition, the GDPR includes restrictions on cross-border data transfers. The GDPR increased our responsibility and liability in relation to personal data that we process, and we may be required to put in place additional mechanisms to ensure compliance with the new EU data protection rules. Further, the United Kingdom's vote in favor of exiting the EU, often referred to as Brexit, has created uncertainty with regard to data protection regulation in the United Kingdom. In particular, it is unclear whether the United Kingdom will enact data protection legislation equivalent to the GDPR and how data transfers to and from the United Kingdom will be regulated.

Rest of the World Regulation

For other countries outside of the European Union and the United States, such as countries in Eastern Europe, Latin America or Asia, the requirements governing the conduct of clinical trials, drug licensing, pricing and reimbursement vary from country to country. In all cases the clinical trials must be conducted in accordance with GCP requirements and the applicable regulatory requirements and the ethical principles that have their origin in the Declaration of Helsinki.

If we fail to comply with applicable foreign regulatory requirements, we may be subject to, among other things, fines, suspension or withdrawal of regulatory approvals, product recalls, seizure of products, operating restrictions and criminal prosecution.

Coverage and Reimbursement

Sales of our drugs will depend, in part, on the extent to which our drugs will be covered by third-party payors, such as government health programs, commercial insurance and managed healthcare organizations. These third-party payors are increasingly reducing reimbursements for medical drugs and services. Additionally, the containment of healthcare costs has become a priority of federal and state governments, and the prices of drugs have been a focus in this effort. The U.S. government, state legislatures and foreign governments have shown significant interest in implementing cost-containment programs, including price controls, restrictions on reimbursement and requirements for substitution of generic drugs.

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

We plan to develop, either by ourselves or with collaborators, in vitro companion diagnostic tests for our drug candidates for certain indications. We, or our collaborators, will be required to obtain coverage and reimbursement for these tests separate and apart from the coverage and reimbursement we seek for our drug candidates, once approved.

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

Healthcare Reform

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 marketing approval of drug candidates, restrict or regulate post-approval activities and affect a biopharmaceutical company's ability to profitably sell any approved drugs.

The Medicare Prescription Drug, Improvement, and Modernization Act of 2003 ("MMA") established the Medicare Part D program to provide a voluntary prescription drug benefit to Medicare beneficiaries. Under Part D, Medicare beneficiaries may enroll in prescription drug plans offered by private entities that provide coverage of outpatient prescription drugs. Unlike Medicare Parts A and B, Part D coverage is not standardized. Part D prescription drug plan sponsors are not required to pay for all covered Part D drugs, and each drug plan can develop its own drug formulary that identifies which drugs it will cover and at what tier or level. However, Part D prescription drug formularies must include drugs within each therapeutic category and class of covered Part D drugs, though not necessarily all the drugs in each category or class. Any formulary used by a Part D prescription drug plan must be developed and reviewed by a pharmacy and therapeutic committee. Government payment for some of the costs of prescription drugs may increase demand for drugs for which we obtain marketing approval. However, any negotiated prices for our drugs covered by a Part D prescription drug plan will likely be lower than the prices we might otherwise obtain. Moreover, while the MMA applies only to drug benefits for Medicare beneficiaries, private third-party payors often follow Medicare coverage policy and payment limitations in setting their own payment rates. Any reduction in payment that results from the MMA may result in a similar reduction in payments from non-governmental third-party payors.

The American Recovery and Reinvestment Act of 2009 provides funding for the federal government to compare the effectiveness of different treatments for the same illness. The plan for the research was published in 2012 by the U.S. Department of Health and Human Services (“HHS”), the Agency for Healthcare Research and Quality and the National Institutes for Health, and periodic reports on the status of the research and related expenditures are made to Congress. Although the results of the comparative effectiveness studies are not intended to mandate coverage policies for public or private third-party payors, it is not clear what effect, if any, the research will have on the sales of our drug candidates, if any such drug or the condition that they are intended to treat are the subject of a trial. It is also possible that comparative effectiveness research demonstrating benefits in a competitor’s drug could adversely affect the sales of our drug candidate. If third-party payors do not consider our drugs to be cost-effective compared to other available therapies, they may not cover our drugs after approval as a benefit under their plans or, if they do, the level of payment may not be sufficient to allow us to sell our drugs on a profitable basis.

The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010 (“ACA”) enacted in March 2010, has had a significant impact on the healthcare industry. The ACA expanded coverage for the uninsured while at the same time containing overall healthcare costs. With regard to pharmaceutical products, the ACA, among other things, addressed a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted or injected, increased the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program and extended the rebate program to individuals enrolled in Medicaid managed care organizations, established annual fees and taxes on manufacturers of certain branded prescription drugs, and a new Medicare Part D coverage gap discount program, in which manufacturers must now 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.

Some of the provisions of the ACA have yet to be fully implemented, while certain provisions have been subject to judicial and Congressional challenges as well as recent efforts by the current U.S. President’s administration to repeal or replace certain aspects of the ACA. Since January 2017, the current U.S. President has signed two Executive Orders and other directives designed to delay the implementation of certain provisions of the ACA or otherwise circumvent some of the requirements for health insurance mandated by the ACA. Concurrently, Congress has considered legislation that would repeal or repeal and replace all or part of the ACA. While Congress has not passed comprehensive repeal legislation, it has enacted laws that modify certain provisions of the ACA and it is unclear how these laws and other efforts to repeal and replace the ACA will impact the ACA and our business.

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

Further, there has been heightened governmental scrutiny recently over the manner in which drug manufacturers set prices for their marketed products, which has resulted in several congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drug products. For example, the current U.S. President's administration released a "Blueprint" to lower drug prices and reduce out-of-pocket costs of drugs that contains additional proposals to increase 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. For example, 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 the federal Anti-Kickback Statute discount safe harbor for the purpose of reducing the cost of drug products to consumers which, among other things, if finalized, will affect discounts paid by manufacturers to Medicare Part D plans, Medicaid managed care organizations and pharmacy benefit managers working with these organizations. Although some of these and other proposed measures may require additional authorization to become effective, Congress and the current U.S. President's administration has each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs.

Additionally, on May 30, 2018, the Trickett Wendler, Frank Mongiello, Jordan McLinn, and Matthew Bellina Right to Try Act of 2017 ("Right to Try Act") was signed into law. The law, among other things, provides a federal framework for certain patients to access certain investigational new drug products that have completed a Phase 1 clinical trial and that are undergoing investigation for FDA approval. Under certain circumstances, eligible patients can seek treatment without enrolling in clinical trials and without obtaining FDA permission under the FDA expanded access program. There is no obligation for a pharmaceutical manufacturer to make its drug products available to eligible patients as a result of the Right to Try Act.

Other Healthcare Laws

We may also be subject to healthcare regulation and enforcement by the federal government and the states and foreign governments where we may market our drug candidates, if approved. These laws include, without limitation, state and federal anti-kickback, fraud and abuse, false claims, privacy and security and physician sunshine laws and regulations.

The federal Anti-Kickback Statute prohibits, among other things, any person from knowingly and willfully offering, soliciting, receiving or paying remuneration, directly or indirectly, to induce either the referral of an individual, for an item or service or the purchasing or ordering of a good or service, for which payment may be made under federal healthcare programs such as the Medicare and Medicaid programs. The federal Anti-Kickback Statute is subject to evolving interpretations. In the past, the government has enforced the federal Anti-Kickback Statute to reach large settlements with healthcare companies based on sham consulting and other financial arrangements with physicians. 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. In addition, the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act. The majority of states also have anti-kickback laws, which establish similar prohibitions and in some cases may apply to items or services reimbursed by any third-party payor, including commercial insurers.

Additionally, the federal civil and criminal false claims laws, including the False Claims Act, and civil monetary penalties law, prohibits knowingly presenting or causing the presentation of a false, fictitious or fraudulent claim for payment to the U.S. government. Actions under the False Claims Act may be brought by the Attorney General or as a qui tam action by a private individual in the name of the government. The federal government is using the False Claims Act, and the accompanying threat of significant liability, in its investigation and prosecution of pharmaceutical and biotechnology companies throughout the United States, for example, in connection with the promotion of products for unapproved uses and other sales and marketing practices. The government has obtained multi-million and multi-billion dollar settlements under the False Claims Act in addition to individual criminal convictions under applicable criminal statutes. Given the significant size of actual and potential settlements, it is expected that the government will continue to devote substantial resources to investigating healthcare providers' and manufacturers' compliance with applicable fraud and abuse laws.

The federal Health Insurance Portability and Accountability Act of 1996 ("HIPAA") also created additional federal civil and criminal penalties for, among other actions, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, including private third-party payors, knowingly and willfully embezzling or stealing from a healthcare benefit program, willfully obstructing a criminal investigation of a healthcare offense, and knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services. Similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation.

There has also been a recent trend of increased federal and state regulation of payments made to physicians and other healthcare providers. The ACA, through the Physician Payments Sunshine Act, imposes new reporting requirements on drug manufacturers for payments made by them to physicians and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members. Drug manufacturers are required to submit annual reports to the government and these reports are posted on a website maintained by CMS. Certain states also mandate implementation of compliance programs, impose restrictions on drug manufacturer marketing practices and/or require the tracking and reporting of gifts, compensation and other remuneration to physicians.

We may also be subject to data privacy and security requirements that may impact the way in which we conduct research and operate our business. HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act ("HITECH"), and their respective implementing regulations, including the final omnibus rule published on January 25, 2013, impose obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information on covered entities, including certain healthcare providers, health plans, and healthcare clearinghouses, as well as individuals and entities that provide services on behalf of a covered entity that involve individually identifiable health information, known as business associates. In addition, we may be directly subject to certain state laws concerning data privacy and security. For example, California recently enacted the California Consumer Privacy Act ("CCPA"), which creates new individual privacy rights for California consumers (as defined in the law) and places increased privacy and security obligations on entities handling certain personal data of consumers or households. The CCPA requires covered companies to provide new disclosure to consumers about such companies' data collection, use and sharing practices, provide such consumers new ways to opt-out of certain sales or transfers of personal information, and provide consumers with additional causes of action. The CCPA took effect on January 1, 2020, and the California Attorney General may bring enforcement actions for violations beginning July 1, 2020. The CCPA was amended in September 2018 and November 2019, and it remains unclear what, if any, further modifications will be made to this legislation or how it will be interpreted. As currently written, the CCPA may impact our business activities and exemplifies the vulnerability of our business to the evolving regulatory environment related to personal data and protected health information. Existing state laws governing the privacy and security of personally identifiable information, and, in some states, health information, impose differing requirements, thus complicating our compliance efforts.

Legal Proceedings

From time to time, we are involved in various legal proceedings arising from the normal course of business activities. We are not presently a party to any litigation the outcome of which, we believe, if determined adversely to us, would individually or taken together have a material adverse effect on our business, operating results, cash flows, or financial condition. Defending such proceedings is costly and can impose a significant burden on management and employees, we may receive unfavorable preliminary or interim rulings in the course of litigation and there can be no assurances that favorable final outcomes will be obtained.

Our Employees

As of December 31, 2019, we had 67 full-time employees, with 56 in research and development and 11 in general and administrative functions. As of December 31, 2019, 27 of our full-time employees had completed a Ph.D. or other advanced science or medical degree.

None of our employees is represented by a labor union or covered by collective bargaining agreements, and we have not experienced any work stoppages. We consider our relations with our employees to be good.

Our Facilities

Our corporate headquarters are located in South San Francisco, California, and comprise approximately 36,754 square feet of space pursuant to an operating lease that expires in November 2026. This lease includes an option to extend for a further eight years, at market rates that prevail at the time of our election to extend.

We believe that these facilities are sufficient to meet our current needs. We also believe we will be able to obtain additional space, as needed, on commercially reasonable terms.

Corporate and Available Information

We were incorporated under the laws of the state of Delaware in March 2015 under the name FLX Bio, Inc. In April 2015, Flexus Biosciences, Inc. (“Flexus”) contributed and assigned to us the assets and rights relating primarily to its fms-like tyrosine kinase receptor 3, cyclin-dependent kinase 4/6 inhibitor and small molecule T_{reg} cancer immunotherapy in exchange for shares of our convertible preferred stock, which were immediately distributed to the preferred stockholders of Flexus. In May 2019, we changed our name to RAPT Therapeutics, Inc. Our principal executive offices are located at 561 Eccles Avenue, South San Francisco, California 94080. Our telephone number is (650) 489-9000. Our website address is www.rapt.com.

We file or furnish electronically with the U.S. Securities and Exchange Commission (the “SEC”) annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act. We make copies of these reports available free of charge through our investor relations website as soon as reasonably practicable after we file or furnish them with the SEC.

Information contained on or accessible through our websites is not incorporated into, and does not form a part of, this Annual Report or any other report or document we file with the SEC, and any references to our websites are intended to be inactive textual references only.

Item 1A. Risk Factors.

Our business and investing in our common stock involves a high degree of risk. You should consider and read carefully all of the risks and uncertainties described below, as well as other information included in this Annual Report on Form 10-K, including our consolidated financial statements and related notes, our “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” as well as our other public filings. The risks described below are not the only ones facing us. The occurrence of any of the following risks or additional risks and uncertainties not presently known to us or that we currently believe to be immaterial could materially and adversely affect our business, financial condition, results of operations, prospects and stock price. In such case, the market price of our common stock could decline, and you may lose all or part of your original investment. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also impair our business operations and the market price of our common stock. This Annual Report on Form 10-K also contains forward-looking statements and estimates that involve risks and uncertainties. Our actual results could differ materially from those anticipated in the forward-looking statements as a result of specific factors, including the risks and uncertainties described below.

Risks Related to Our Business

We are a clinical stage biopharmaceutical company with a history of losses. We expect to continue to incur significant losses for the foreseeable future and may never achieve or maintain profitability, which could result in a decline in the market value of our common stock.

We are a clinical stage biopharmaceutical company with a history of losses. Since our inception, we have devoted substantially all of our resources to research and development, including our drug discovery and development engine, preclinical studies, clinical trials, raising capital, building our management team and our intellectual property portfolio. Our net loss was \$43.0 million and \$36.1 million for the years ended December 31, 2019 and 2018, respectively. As of December 31, 2019, we had an accumulated deficit of \$162.0 million. Substantially all of our losses have resulted from expenses incurred in connection with our research and development programs and from general and administrative costs associated with our operations. Through December 31, 2019, we have not generated any revenue. Furthermore, we do not expect to generate any revenue from product sales for the foreseeable future, and we expect to continue to incur significant operating losses for the foreseeable future due to the cost of research and development, preclinical studies, clinical trials and the regulatory approval process for our current and potential future drug candidates.

We expect our net losses to increase substantially as we advance the clinical development of our lead drug candidates, FLX475 and RPT193. However, the amount of our future losses is uncertain. Our ability to generate revenue from product sales and achieve or sustain profitability, if ever, will depend on, among other things, successfully developing drug candidates, obtaining regulatory approvals to market and commercialize drug candidates, manufacturing any approved products on commercially reasonable terms, entering into any future collaborations or other partnerships, establishing a sales and marketing organization or suitable third-party alternatives for any approved product and raising sufficient capital to finance our operations. If we, or any of our future partners, are unable to develop and commercialize one or more of our drug candidates, or if sales revenue from any drug candidate that receives regulatory approval is insufficient, we will not achieve or sustain profitability, which would have a material and adverse effect on our business, financial condition, results of operations and prospects.

FLX475 and RPT193 are in clinical development, which may fail or suffer delays that materially and adversely affect their commercial viability.

We have no products on the market or that have gained regulatory approval. Other than FLX475 and RPT193, none of our drug candidates has ever been tested in humans. None of our drug candidates has advanced into late-stage development or a pivotal clinical trial and it may be years before any such trial is initiated, if at all. Our ability to achieve and sustain profitability depends on us developing, obtaining regulatory approval for and successfully commercializing one or more drug candidates, either alone or with partners.

Before obtaining regulatory approval for any of our drug candidates, we must conduct extensive preclinical studies and clinical trials to demonstrate the safety and efficacy of our drug candidates in humans. Although we have successfully completed preclinical studies and a Phase 1 clinical trial with healthy volunteers for FLX475, are conducting a Phase 1/2 clinical trial investigating FLX475 as a single agent and in combination with pembrolizumab in a broad range of tumors and have completed the initial Phase 1a single and multiple dose escalation cohorts of healthy volunteers of a seamless Phase 1 trial of RPT193, more clinical trials are needed and there is no guarantee that the FDA will permit us to conduct additional clinical trials for FLX475, RPT193 or any other potential drug candidates. Further, we cannot be certain of the timely completion or outcome of our clinical trials and cannot predict if the FDA or other regulatory authorities will accept our proposed clinical programs, or if the outcome of our preclinical studies or clinical trials will ultimately support the further development of FLX475, RPT193 or any other potential drug candidates.

FLX475 and RPT193 are in clinical development, and we are subject to the risks of failure inherent in the development of drug candidates based on novel approaches, targets and mechanisms of action. Although FLX475 is currently in a Phase 1/2 clinical trial, there is no guarantee that FLX475 will benefit patients. In the ongoing Phase 1/2 clinical trial of FLX475, a partial response has been observed in one NSCLC patient in the 50 mg FLX475 and pembrolizumab cohort. It is possible that no response will be observed in other patients or that the observed partial response was caused solely by the pembrolizumab administered to the patient, and not by FLX475, or that the partial response was spontaneous, and unrelated to either FLX475 or pembrolizumab. Additionally, although RPT193 has shown activity in several preclinical models, and we have completed the initial Phase 1a single and multiple dose escalation cohorts of healthy volunteers of a seamless Phase 1 trial of RAPT193, there is no guarantee that we will be able to proceed with clinical development of RPT193 or that it will benefit patients. Even though we have designed and selected our drug candidates to achieve an intended biological effect and to avoid certain others, and even if we have demonstrated this effect in preclinical models, there can be no assurance that the effect will be observed or avoided, as the case may be, in clinical trials or that the drug candidate will offer any significant clinical benefit to humans. Results in preclinical studies do not necessarily predict the results of clinical studies. Additionally, even though our drug candidates are designed to address the same indications as existing drugs and therapies, we have not conducted head-to-head clinical trials comparing our drug candidates with such existing drugs and therapies. Accordingly, you should consider our prospects in light of the costs, uncertainties, delays and difficulties frequently encountered by clinical and preclinical stage biopharmaceutical companies such as ours.

FLX475 is currently undergoing clinical development and testing as a single agent and in combination with pembrolizumab, which is supplied to us by Merck under our collaboration agreement with Merck. If Merck were to terminate our collaboration agreement, we may be forced to purchase pembrolizumab to continue our current and planned clinical trials or to pursue another anti-PD-1 therapy for co-administration with FLX475 in place of pembrolizumab, which may require us to restart preclinical studies or clinical trials, any of which could result in a change to our business plan and materially harm our business, financial condition, results of operations and prospects. In addition, if FLX475 is approved as a treatment in combination with pembrolizumab, then the availability of pembrolizumab for administration with FLX475 will affect our ability to commercialize FLX475. For example, if the supply of pembrolizumab were constrained for any reason it could have the effect of limiting the commercial uptake of FLX475, if approved for commercial sale.

We may not have the financial resources to continue development of, or to enter into new collaborations for, FLX475 and RPT193 or any potential future drug candidates. Our position may be exacerbated if we experience any issues that delay or prevent regulatory approval of, or our ability to commercialize, a drug candidate, such as:

- negative or inconclusive results from our clinical trials or the clinical trials of others for drug candidates similar to ours, leading to a decision or requirement to conduct additional preclinical studies or clinical trials or abandon a program;
- product-related side effects experienced by participants in our clinical trials or by individuals using drugs or therapeutics similar to ours;

- delays in submitting INDs or comparable foreign applications, or delays or failure in obtaining the necessary approvals from regulators to commence a clinical trial, or a suspension or termination of a clinical trial once commenced;
- conditions imposed by the FDA, or other regulatory authorities regarding the scope or design of our clinical trials;
- delays in enrolling research subjects in clinical trials;
- high drop-out rates of research subjects;
- inadequate supply or quality of drug candidate components or materials or other supplies necessary for the conduct of our clinical trials;
- greater-than-anticipated clinical trial costs;
- poor effectiveness of our drug candidates during clinical trials;
- unfavorable FDA or other regulatory agency inspections and review of a clinical trial or manufacturing site;
- failure of our third-party contractors or investigators to comply with regulatory requirements or otherwise meet their contractual obligations in a timely manner, or at all;
- delays and changes in regulatory requirements, policies and guidelines; or
- the FDA or other regulatory agencies' data interpretation.

Further, we and our potential future partners may never receive approval to market and commercialize any drug candidate. Even if we or a potential future partner obtains regulatory approval, the approval may be for targets, disease indications or patient populations that are not as broad as we intended or desired or may require labeling that includes significant use or distribution restrictions or safety warnings. We or a potential future partner may be subject to post-marketing testing requirements to maintain regulatory approval.

FLX475, RPT193 or other future drug candidates may not demonstrate the safety and efficacy necessary to support further clinical development or commercial viability.

We have completed a Phase 1 clinical trial with healthy volunteers for FLX475 and are conducting a Phase 1/2 clinical trial investigating FLX475 as a single agent and in combination with pembrolizumab. In addition, we have completed the initial Phase 1a single and multiple dose escalation cohorts of healthy volunteers of a seamless Phase 1 trial of RPT193. We may ultimately discover that neither FLX475 nor RPT193 possesses certain properties that we currently believe are therapeutically effective or safe. For example, although RPT193 has exhibited encouraging results in preclinical models of atopic dermatitis and allergic asthma, it may not demonstrate the same properties in humans and may interact with human biological systems in unforeseen, ineffective or harmful ways. As a result, we may never succeed in developing a marketable product based on RPT193. If FLX475, RPT193 or any of our potential future drug candidates prove to be ineffective, unsafe or commercially unviable, our entire pipeline could have little, if any, value, which could require us to change our focus and approach to small molecule discovery and development, which would have a material and adverse effect on our business, financial condition, results of operations and prospects.

The recent and ongoing COVID-19 pandemic could materially affect our operations, including at our headquarters in the San Francisco Bay Area, which is currently subject to a shelter-in-place order, and at our clinical trial sites, as well as the business or operations of our manufacturers, CROs or other third parties with whom we conduct business. Our business could be adversely affected by the effects of other future health epidemics or pandemics in regions where we or third parties on which we rely have significant manufacturing operations, clinical trial sites or other business operations.

Our business could be adversely affected by health epidemics in regions where we have concentrations of clinical trial sites or other business operations, and could cause significant disruption in the operations of third-party manufacturers and CROs upon whom we rely. For example, in December 2019, a novel strain of coronavirus, SARS-CoV-2, causing a disease referred to as COVID-19, was reported to have surfaced in Wuhan, China. Since then, COVID-19 has spread to multiple countries, including the United States and several European countries. In March 2020, the World Health Organization declared the COVID-19 outbreak a pandemic, and the U.S. government imposed restrictions on travel between the United States, Europe and certain other countries. Further, the President of the United States declared the COVID-19 pandemic a national emergency, invoking powers under the Stafford Act, the legislation that directs federal emergency disaster response. Similarly, the State of California declared a state of emergency related to the spread of COVID-19, and the San Francisco Department of Public Health announced aggressive recommendations to reduce the spread of the disease. In March 2020, the health officers of six San Francisco Bay Area counties, including San Mateo County where our headquarters are located, issued shelter-in-place orders, which (i) direct all individuals living in those counties to shelter at their places of residence (subject to limited exceptions), (ii) direct all businesses and governmental agencies to cease non-essential operations at physical locations in those counties, (iii) prohibit all non-essential gatherings of any number of individuals, and (iv) order cessation of all non-essential travel. The shelter-in-place orders took effect on March 17, 2020 and will continue until April 7, 2020, unless further extended. In addition, on March 19, 2020, the Governor of California and the State Public Health Officer and Director of the California Department of Public Health issued an executive order that directs all individuals living in the State of California to stay at their place of residence for an indefinite period of time (subject to certain exceptions to facilitate authorized necessary activities) to mitigate the impact of the COVID-19 pandemic. The executive order exempts certain individuals needed to maintain continuity of operations of critical infrastructure sectors.

In response to these public health directives and orders, we have implemented work-from-home policies for substantially all of our employees. The effects of the executive order, the shelter-in-place order and our work-from-home policies may negatively impact productivity, disrupt our business, and delay our clinical programs and timelines, the magnitude of which will depend, in part, on the length and severity of the restrictions and other limitations on our ability to conduct our business in the ordinary course. These and similar, and perhaps more severe, disruptions in our operations could negatively impact our business, operating results and financial condition.

Quarantines, shelter-in-place, executive and similar government orders, or the perception that such orders, shutdowns or other restrictions on the conduct of business operations could occur, related to COVID-19 or other infectious diseases, could impact personnel at third-party manufacturing facilities in the United States and other countries, or the availability or cost of materials, which would disrupt our supply chain. In particular, some of our suppliers of certain materials used in the production of our drug products are located in the Hanmi Territory, India and Germany. While many of these materials may be obtained by more than one supplier, including suppliers outside of the Hanmi Territory, India and Germany, port closures and other restrictions resulting from the COVID-19 pandemic may disrupt our supply chain or limit our ability to obtain sufficient materials for manufacture of our drug candidates.

In addition, we expect our clinical trials may be affected by the COVID-19 pandemic. Clinical site initiation and patient enrollment may be delayed due to prioritization of hospital resources toward the COVID-19 pandemic. Some patients may not be able to comply with clinical trial protocols if quarantines impede patient movement or interrupt healthcare services. Similarly, our ability to recruit and retain patients and principal investigators and site staff who, as healthcare providers, may have heightened exposure to COVID-19, may be impaired and would adversely impact our clinical trial operations. For example, while we originally intended to provide an initial data readout from the Phase 1/2 trial to evaluate FLX475 in patients with several types of “charged” tumors in the second quarter of 2020, we now expect that timeline will be delayed due to circumstances and uncertainties created by the COVID-19 pandemic. Additionally, we have temporarily paused enrollment in the Phase 1b portion of our seamless Phase 1 trial to evaluate RPT193 in patients with AD due to circumstances and uncertainties created by the COVID-19 pandemic. Moreover, monitors of certain of our clinical trial sites in the Hanmi Territory are not able to access the sites for activation, which could limit or delay enrollment.

The spread of COVID-19, which has caused a broad impact globally, may materially affect us economically. While the potential economic impact brought by COVID-19, and the duration of such impact, may be difficult to assess or predict, a widespread pandemic could result in significant disruption of global financial markets, reducing our ability to access capital, which could in the future negatively affect our liquidity. In addition, a recession or market correction resulting from the spread of COVID-19 could materially affect our business and the value of our common stock.

The COVID-19 global pandemic continues to evolve rapidly. The ultimate impact of the COVID-19 pandemic or a similar health epidemic is highly uncertain and subject to change. We do not yet know the full extent of potential delays or impacts on our business, our clinical trials, healthcare systems or the global economy as a whole.

We may not be successful in our efforts to use and expand our proprietary drug discovery and development engine to build a pipeline of drug candidates, and as an organization we have no history of successfully developing drugs.

A key element of our strategy is to use and expand our proprietary drug discovery and development engine to build a pipeline of potential drug candidates and advance these drug candidates through preclinical studies and clinical development for the treatment of various diseases. As an organization, we have never developed a drug candidate through to commercialization nor have we ever conducted a pivotal clinical trial. Although our research and development efforts to date have resulted in our identification and development of FLX475, RPT193 and other potential future drug candidates, neither our proprietary drug discovery and development engine nor our organization has a track record of success. Our current drug candidates may not be safe or effective therapeutics and we may not be able to develop any successful drug candidates. Our proprietary drug discovery and development engine is evolving and may not reach a state at which building a pipeline of drug candidates is possible. Even if we are successful in building our pipeline of drug candidates, the potential drug candidates that we identify may not be suitable for clinical development or generate acceptable clinical data, including unacceptable toxicity or other characteristics that indicate that the drug candidates are unlikely to be products that will receive marketing approval from the FDA or other regulatory authorities or achieve market acceptance. Even if the drug candidates we identify are suitable for clinical development, our lack of experience as an organization at developing drugs may cause us to fail in successfully developing the drug candidate through to commercialization. If we do not successfully develop and commercialize drug candidates, we will not be able to generate product revenue in the future.

Failure to successfully validate, develop and obtain regulatory approval for companion diagnostics for our drug candidates could harm our drug development strategy and operational results.

As one of the elements of our clinical development approach, we may seek to screen and identify subsets of patients who are more likely to benefit from our drug candidates. To achieve this, we may seek to develop and commercialize companion diagnostics by us or by third-party collaborators. Companion diagnostics are sometimes developed in conjunction with clinical programs for an associated product. The approval of a companion diagnostic as part of the product label would limit the use of the drug candidate to those patients who are more likely to benefit from our drug candidate.

Companion diagnostics are subject to regulation by the FDA and other regulatory authorities as medical devices and require separate clearance or approval prior to their commercialization. To date, the FDA has required premarket approval of all companion diagnostics for oncology therapies. We may encounter difficulties in developing and obtaining approval for these companion diagnostics. Any delay or failure by us or third-party collaborators to develop or obtain regulatory approval of a companion diagnostic could delay or prevent approval of our related drug candidates. The time and cost associated with developing a companion diagnostic may not prove to have been necessary in order to successfully market the product.

The market may not be receptive to our current or potential future drug candidates, and we may not generate any revenue from the sale or licensing of our drug candidates.

Even if regulatory approval is obtained for a drug candidate, including FLX475 or RPT193, we may not generate or sustain revenue from sales of such products. Market acceptance of our current and potential future drug candidates will depend on, among other factors:

- the timing of our receipt of any marketing and commercialization approvals;
- the terms of any approvals and the countries in which approvals are obtained;
- the safety and efficacy of our drug candidates;
- the prevalence and severity of any adverse side effects associated with our drug candidates;
- limitations or warnings contained in any labeling approved by the FDA or other regulatory authority;
- relative convenience and ease of administration of our drug candidates;
- the extent to which physicians recommend our products to their patients;
- the availability of coverage and adequate government and third-party payor reimbursement;
- the pricing of our products, particularly as compared to alternative treatments; and
- the availability of alternative effective treatments for the disease indications our drug candidates are intended to treat and the relative risks, benefits and costs of those treatments.

If any drug candidate we commercialize fails to achieve market acceptance, it could have a material and adverse effect on our business, financial condition, results of operations and prospects.

We may not be successful in our efforts to expand indications for approved drug candidates

Part of our drug development strategy is to clinically test and seek regulatory approval for our drug candidates in indications in which we believe there is the most evidence that we will be able to quickly generate PoC data. We then intend to expand clinical testing and seek regulatory approvals in other indications within oncology and inflammatory diseases. Conducting clinical trials for additional indications for our drug candidates requires substantial technical, financial and human resources and is prone to the risks of failure inherent in drug development. We cannot provide you any assurance that we will be successful in our effort to obtain regulatory approval for our drug candidates for additional indications even if we obtain approval for an initial indication.

If we or others later identify undesirable side effects caused by FLX475 or RPT193, our ability to market and derive revenue from the drug candidate could be compromised.

Undesirable side effects caused by FLX475, RPT193 or any other potential future drug candidate could cause regulatory authorities to interrupt, delay or halt clinical trials and could result in a more restrictive label or the delay or denial of regulatory approval by the FDA or other regulatory authorities. While we have not discovered any adverse side effects of FLX475 or RPT193 in healthy subjects that have limited our ability to test FLX475 or RPT193 in humans, it is possible that there will be undesirable side effects associated with their use. Results of our clinical trials could reveal a high and unacceptable severity and prevalence of these side effects. In such an event, our trials could be suspended or terminated, and the FDA or other regulatory authorities could order us to cease further development, or deny approval, of a drug candidate for any or all targeted indications. Such side effects could also affect patient recruitment or the ability of enrolled patients to complete the trial or result in potential product liability claims. Any of these occurrences may materially and adversely affect our business and financial condition and impair our ability to generate revenues.

Further, clinical trials by their nature utilize a sample of the potential patient population. With a limited number of patients and limited duration of exposure, rare and severe side effects of a drug candidate may only be uncovered when a significantly larger number of patients are exposed to the drug candidate or when patients are exposed for a longer period of time.

If any of our current or potential future drug candidates receive regulatory approval and we or others identify undesirable side effects caused by one of these products, any of the following adverse events could occur, which could result in the loss of significant revenue to us and materially and adversely affect our results of operations and business:

- regulatory authorities may withdraw their approval of the product or seize the product;
- we may be required to recall the product or change the way the product is administered to patients;
- additional restrictions may be imposed on the marketing of the particular product or the manufacturing processes for the product or any component thereof;
- we may be subject to fines, injunctions or the imposition of civil or criminal penalties;
- regulatory authorities may require the addition of labeling statements, such as a “black box” warning or a contraindication;
- we may be required to create a Medication Guide outlining the risks of such side effects for distribution to patients;
- we could be sued and held liable for harm caused to patients;
- the product may become less competitive; and
- our reputation may suffer.

We will need substantial additional funds to advance development of drug candidates and our drug discovery and development engine, and we cannot guarantee that we will have sufficient funds available in the future to develop and commercialize our current or potential future drug candidates.

Since our inception, we have used substantial amounts of cash to fund our operations and expect our expenses to increase substantially in the foreseeable future. Developing our drug candidates and conducting clinical trials for the treatment of cancer and any other indications that we may pursue in the future will require substantial amounts of capital. Accordingly, we expect our expenses to increase in connection with our ongoing activities, particularly as we continue the research and development of, initiate clinical trials of, and seek marketing approval for, our drug candidates. In addition, if we obtain marketing approval for any of our drug candidates, we expect to incur significant commercialization expenses related to product sales, marketing, manufacturing and distribution. Furthermore, we expect to incur additional costs associated with operating as a public company. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. If we are unable to raise capital when needed or on attractive terms, we would be forced to delay, reduce or eliminate our research and development programs or future commercialization efforts.

As of December 31, 2019, we had \$77.4 million in cash and cash equivalents. Based on current business plans, we believe that our current cash and cash equivalents, including the net proceeds of approximately \$69.7 million from our follow-on offering in February 2020, will provide sufficient funds to enable us to meet our obligations for at least the next twelve months. Our future capital requirements and the period for which we expect our existing resources to support our operations may vary significantly from what we expect. Our monthly spending levels vary based on new and ongoing research and development and other corporate activities. Because of the numerous risks and uncertainties associated with the development and commercialization of our current and potential future drug candidates and the extent to which we may enter into collaborations with third parties to participate in their development and commercialization, we are unable to estimate the amounts of increased capital outlays and operating expenditures associated with our current and anticipated preclinical studies, clinical trials and any approved marketing and commercialization activities. The timing and amount of our operating expenditures will depend largely on:

- the timing and progress of preclinical and clinical development activities;
- the timing and progress of the advancement of our drug discovery and development engine;
- the price and pricing structure that we are able to obtain from our third-party contract manufacturers to manufacture our preclinical study and clinical trial materials and supplies;
- the number and scope of preclinical and clinical programs we decide to pursue;
- our ability to maintain our current licenses, collaboration and research and development programs, including the continued agreement of Merck to supply pembrolizumab to us for use in our clinical trials;
- our ability to establish new collaborations;
- the progress of the development efforts of parties with whom we may in the future enter into collaboration and research and development agreements;
- the costs involved in obtaining, maintaining, enforcing and defending patents and other intellectual property rights;
- the cost and timing of regulatory approvals; and
- our efforts to enhance operational systems, secure sufficient laboratory space and hire additional personnel, including personnel to support development of our drug candidates and satisfy our obligations as a public company.

To date, we have primarily financed our operations through the sale of equity securities. We may seek to raise any necessary additional capital through a combination of public or private equity offerings, debt financings, collaborations, strategic alliances, licensing arrangements and other marketing and distribution arrangements. We cannot assure you that we will be successful in acquiring additional funding at levels sufficient to fund our operations or on terms favorable to us. If we are unable to obtain adequate financing when needed, we may have to delay, reduce the scope of or suspend one or more of our preclinical studies, clinical trials, research and development programs or commercialization efforts. To the extent that we raise additional capital through collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our current and potential future drug candidates, future revenue streams or research programs or to grant licenses on terms that may not be favorable to us. If we do raise additional capital through public or private equity or convertible debt offerings, the ownership interest of our existing stockholders will be diluted and the terms of these securities may include liquidation preferences or other rights that adversely affect our and our stockholders' rights. If we raise additional capital through debt financing, we may be subject to covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends.

We do not expect to realize revenue from product sales in the foreseeable future, if at all, and unless and until our current and potential future drug candidates are clinically tested, approved for commercialization and successfully marketed.

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

Because we have limited financial and managerial resources, we intend to prioritize our efforts on specific research and development programs, including clinical development of FLX475, RPT193 or other future drug candidates. As a result, we may forgo or delay pursuit of other opportunities, including with potential future drug candidates that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. Our spending on current and future research and development programs and drug candidates for specific indications may not yield any commercially viable drug candidates. If we do not accurately evaluate the commercial potential or target market for a particular drug candidate, we may relinquish valuable rights to that drug candidate through partnership, licensing or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such drug candidate.

We may not be able to enter into collaborations or strategic transactions on acceptable terms, if at all, which could adversely affect our ability to develop and commercialize current and potential future drug candidates, impact our cash position and increase our expense.

From time to time, we may consider strategic transactions, such as collaborations, acquisitions of companies, asset purchases, joint ventures and out- or in-licensing of drug candidates or technologies. For example, we entered a Collaboration and License Agreement with Hanmi in December 2019, pursuant to which we granted Hanmi the exclusive rights to develop, manufacture and commercialize FLX475 in the Hanmi Territory. The competition for partners is intense, and the negotiation process may be time-consuming and complex. If we are not able to enter into collaborations or other strategic transactions, or continue our existing collaboration, we may not have access to required liquidity or expertise to further develop our potential future drug candidates or our drug discovery and development engine. Any such collaboration, or other strategic transaction, may require us to incur non-recurring or other charges, increase our near- and long-term expenditures and pose significant integration or implementation challenges or disrupt our management or business. We may acquire additional technologies and assets, form strategic alliances or create joint ventures with third parties that we believe will complement or augment our existing business, but we may not be able to realize the benefit of acquiring such assets. Conversely, any new collaboration that we do enter into may be on terms that are not optimal for us. These transactions would entail numerous operational and financial risks, including:

- exposure to unknown liabilities;
- disruption of our business and diversion of our management's time and attention in order to manage a collaboration or develop acquired products, drug candidates or technologies;

- incurrence of substantial debt or dilutive issuances of equity securities to pay transaction consideration or costs;
- higher-than-expected collaboration, acquisition or integration costs, write-downs of assets or goodwill or impairment charges, increased amortization expenses;
- difficulty and cost in facilitating the collaboration or combining the operations and personnel of any acquired business;
- impairment of relationships with key suppliers, manufacturers or customers of any acquired business due to changes in management and ownership; and
- the inability to retain key employees of any acquired business.

Accordingly, although there can be no assurance that we will undertake or successfully complete any collaborations or other strategic transactions of the nature described above, any transactions that we do complete may be subject to the foregoing or other risks and our business could be materially harmed by such transactions. Conversely, any failure to enter any collaboration or other strategic transaction that would be beneficial to us could delay the development and potential commercialization of our drug candidates and have a negative impact on the competitiveness of any drug candidate that reaches market.

In addition, to the extent that any of our current or future partners were to terminate a collaboration agreement, we may be forced to seek additional partnerships, which may be less favorable to us, or independently develop our current and future drug candidates, including funding preclinical studies or clinical trials, assuming marketing and distribution costs and obtaining, maintaining, enforcing and defending intellectual property rights, or, in certain instances, abandoning drug candidates altogether, any of which could result in a change to our business plan and materially harm our business, financial condition, results of operations and prospects.

If third parties on which we rely to conduct certain preclinical studies and clinical trials do not perform as contractually required, fail to satisfy regulatory or legal requirements or miss expected deadlines, our development program could be delayed with material and adverse impacts on our business and financial condition.

We rely on third-party clinical investigators, contract research organizations (“CROs”), clinical data management organizations and consultants to design, conduct, supervise and monitor certain preclinical studies and any clinical trials. Because we intend to rely on these third parties and will not have the ability to conduct certain preclinical studies or clinical trials independently, we will have less control over the timing, quality and other aspects of such preclinical studies and clinical trials than we would have had if we conducted them on our own. These investigators, CROs and consultants will not be our employees and we will have limited control over the amount of time and resources that they dedicate to our programs. These third parties may have contractual relationships with other entities, some of which may be our competitors, which may draw time and resources from our programs. The third parties with which we may contract might not be diligent, careful or timely in conducting our preclinical studies or clinical trials, resulting in the preclinical studies or clinical trials being delayed or unsuccessful.

If we cannot contract with acceptable third parties on commercially reasonable terms, or at all, or if these third parties do not carry out their contractual duties, satisfy legal and regulatory requirements for the conduct of preclinical studies or clinical trials or meet expected deadlines, our clinical development programs could be delayed and otherwise adversely affected. In all events, we will be responsible for ensuring that each of our preclinical studies and clinical trials are conducted in accordance with the general investigational plan and protocols for the trial. The FDA may require preclinical studies to be conducted in accordance with good laboratory practices and clinical trials to be conducted in accordance with good clinical practices, including for designing, conducting, recording and reporting the results of preclinical studies and clinical trials to ensure that data and reported results are credible and accurate and that the rights, integrity and confidentiality of clinical trial participants are protected. Our reliance on third parties that we do not control will not relieve us of these responsibilities and requirements. Any adverse development or delay in our clinical trials could have a material and adverse impact on our commercial prospects and may impair our ability to generate revenue.

If we encounter difficulties enrolling patients in our clinical trials, our clinical development activities could be delayed or otherwise adversely affected.

We may not be able to initiate or continue clinical trials for our current or potential future drug candidates if we are unable to locate and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA or other regulatory authorities. In particular, we are conducting a Phase 1/2 clinical trial investigating FLX475 as a single agent and in combination with pembrolizumab in a broad range of tumors and have paused enrollment of the Phase 1b portion of a Phase 1 clinical trial of RPT193 in AD patients. We cannot predict how difficult it will be to enroll patients for trials in these indications. We may experience difficulties in patient enrollment in our clinical trials for a variety of reasons. The enrollment of patients depends on many factors, including:

- the severity of the disease under investigation;
- the patient eligibility criteria defined in the clinical trial protocol;
- the size of the patient population required for analysis of the trial's primary endpoints;
- the proximity and availability of clinical trial sites for prospective patients;
- the patient referral practices of physicians;
- our ability to recruit clinical trial investigators with the appropriate competencies and experience;
- clinicians' and patients' perceptions as to the potential advantages of the drug candidate being studied in relation to other available therapies, including any new drugs that may be approved for the indications we are investigating;
- our ability to obtain and maintain patient consents; and
- the risk that patients enrolled in clinical trials will drop out of the trials before completion.

In addition, our future clinical trials will compete with other clinical trials for drug candidates that are in the same therapeutic areas as our drug candidates, and this competition will reduce the number and types of patients available to us, because some patients who might have opted to enroll in our trials may instead opt to enroll in a trial being conducted by one of our competitors. Since the number of qualified clinical investigators is limited, we expect to conduct some of our clinical trials at the same clinical trial sites that some of our competitors use, which will reduce the number of patients who are available for our clinical trials at such clinical trial sites. Additionally, because some of our clinical trials will be conducted in patients with advanced solid tumors, the patients are typically in the late stages of the disease and may experience disease progression or adverse events independent from our drug candidates, making them unevaluable for purposes of the trial and requiring additional enrollment. Delays in patient enrollment may result in increased costs or may affect the timing or outcome of the planned clinical trials, which could prevent completion of these trials and adversely affect our ability to advance the development of our drug candidates.

We may not be able to conduct, or contract others to conduct, animal testing in the future, which could harm our research and development activities.

Certain laws and regulations relating to drug development require us to test our drug candidates on animals before initiating clinical trials involving humans. Animal testing activities have been the subject of controversy and adverse publicity. Animal rights groups and other organizations and individuals have attempted to stop animal testing activities by pressing for legislation and regulation in these areas and by disrupting these activities through protests and other means. To the extent the activities of these groups are successful, our research and development activities may be interrupted or delayed.

Because we may rely on third parties for manufacturing and supply of our drug candidates, some of which are or may be sole source vendors, for preclinical and clinical development materials and commercial supplies, our supply may become limited or interrupted or may not be of satisfactory quantity or quality.

We currently rely on third-party contract manufacturers for our current and future clinical trial product materials and supplies. We do not produce any meaningful quantity of our drug candidates for clinical development, and we do not currently own manufacturing facilities for producing such supplies. Furthermore, some of our manufacturers represent our sole source of supplies of current and future clinical development materials, including our source for the manufacture of FLX475 and RPT193. We cannot assure you that our preclinical or current or future clinical development product supplies and commercial supplies will not be limited or interrupted, especially with respect to our sole source third-party manufacturing and supply partners, or will be of satisfactory quality or continue to be available at acceptable prices. In particular, any replacement of our manufacturers could require significant effort and expertise because there may be a limited number of qualified replacements. For our current and future sole source third-party manufacturing and supply partners, we may be unable to negotiate binding agreements with them or find replacement manufacturers to support our preclinical and current and future clinical activities at commercially reasonable terms in the event that their services to us becomes interrupted for any reason. We do not always have arrangements in place for a redundant or second-source supply for our sole source vendors in the event they cease to provide their products or services to us or do not timely provide sufficient quantities to us. Establishing additional or replacement sole source vendors, if required, may not be accomplished quickly. Any delays resulting from manufacturing or supply interruptions associated with our reliance on third-party manufacturing and supply partners, including those that are sole source, could impede, delay, limit or prevent our drug development efforts, which could harm our business, result of operations, financial condition and prospects.

The manufacturing process for a drug candidate is subject to FDA and other regulatory authority review. Suppliers and manufacturers must meet applicable manufacturing requirements and undergo rigorous facility and process validation tests required by regulatory authorities in order to comply with regulatory standards, such as current Good Manufacturing Practices (“cGMP”). If any of our manufacturers fails to comply with such requirements or to perform its obligations to us in relation to quality, timing or otherwise, or if our supply of components or other materials becomes limited or interrupted for other reasons, we may be forced to manufacture the materials ourselves, for which we currently do not have the capabilities or resources, or enter into an agreement with another third party, which we may not be able to do on reasonable terms, or at all. In some cases, the technical skills or technology required to manufacture our current and future drug candidates may be unique or proprietary to the original manufacturer and we may have difficulty transferring such skills or technology to another third party and a feasible alternative may not exist. These factors would increase our reliance on such manufacturer or require us to obtain a license from such manufacturer in order to have another third-party manufacture our drug candidates. If we are required to change manufacturers for any reason, we will be required to verify that the new manufacturer maintains facilities and procedures that comply with quality standards and with all applicable regulations and guidelines. The delays associated with the verification of a new manufacturer could negatively affect our ability to develop drug candidates in a timely manner or within budget.

We also expect to rely on third-party manufacturers if we receive regulatory approval for any drug candidate. We have existing, and may enter into future, manufacturing arrangements with third parties. We will depend on these third parties to perform their obligations in a timely manner consistent with contractual and regulatory requirements, including those related to quality control and assurance. If we are unable to obtain or maintain third-party manufacturing for any drug candidate, or to do so on commercially reasonable terms, we may not be able to develop and commercialize our drug candidates successfully. Our or a third party’s failure to execute on our manufacturing requirements and comply with cGMP could adversely affect our business in a number of ways, including:

- an inability to initiate or continue clinical trials of drug candidates under development;
- delay in submitting regulatory applications, or receiving regulatory approvals, for drug candidates;
- loss of the cooperation of a potential future partner;
- subjecting third-party manufacturing facilities or our potential future manufacturing facilities to additional inspections by regulatory authorities;

- requirements to cease distribution or to recall batches of drug candidates; and
- in the event of approval to market and commercialize a drug candidate, an inability to meet commercial demands for our products.

Our third-party manufacturers may be unable to successfully scale manufacturing of FLX475, RPT193 or potential future drug candidates in sufficient quality and quantity, which would delay or prevent us from developing drug candidates and commercializing approved products, if any.

In order to conduct further clinical trials for FLX475 and RPT193, as well as any potential future drug candidates, we will need to manufacture large quantities of these drug candidates. We may continue to use third parties for our manufacturing needs. Our manufacturing partners may be unable to successfully increase the manufacturing capacity for any current or potential future drug candidate in a timely or cost-effective manner, or at all. In addition, quality issues may arise during scale-up activities. If our manufacturing partners are unable to successfully scale the manufacture of any current or potential future drug candidate in sufficient quality and quantity, the development, testing and clinical trials of that drug candidate may be delayed or infeasible, and regulatory approval or commercial launch of any potential resulting product may be delayed or not obtained, which could significantly harm our business.

If the market opportunities for our current and potential future drug candidates, including FLX475 and RPT193, are smaller than we believe they are, our ability to generate product revenues may be adversely affected and our business may suffer.

Our understanding of the number of people who suffer from certain types of cancers and allergic inflammatory diseases that FLX475 and RPT193, respectively, may have the potential to treat is based on estimates. These estimates may prove to be incorrect, and new studies may demonstrate or suggest a lower estimated incidence or prevalence of these diseases. The number of patients in the United States or elsewhere may turn out to be lower than expected, may not be otherwise amenable to treatment with our current or potential future drug candidates or patients may become increasingly difficult to identify and access, all of which would adversely affect our business prospects and financial condition. In particular, the treatable population for our candidates may be further reduced if our estimates of addressable populations are erroneous or sub-populations of patients do not derive benefit from FLX475 or RPT193.

Further, there are several factors that could contribute to making the actual number of patients who receive our current or potential future drug candidates less than the potentially addressable market, including the lack of widespread limited reimbursement for new therapies in many markets.

We face intense competition from entities that have developed or may develop drug candidates for the treatment of the diseases that we are currently targeting or may target in the future. If these companies develop technologies or drug candidates more rapidly than we do, or if their technologies or drug candidates are more effective, our ability to develop and successfully commercialize drug candidates may be adversely affected.

The development and commercialization of drugs and therapeutic biologics is highly competitive. We compete with a variety of large pharmaceutical companies, multinational biopharmaceutical companies, other biopharmaceutical companies and specialized biotechnology companies, as well as technology being developed at universities and other research institutions. Our competitors are often larger and better funded than we are. Our competitors have developed, are developing or will develop drug candidates and processes competitive with ours. Competitive therapeutic treatments include those that have already been approved and accepted by the medical community and any new treatments that are currently in development or that enter the market. We believe that a significant number of products are currently under development, and may become commercially available in the future, for the treatment of conditions for which we are developing or may try to develop drug candidates. There is intense and rapidly evolving competition in the biotechnology, biopharmaceutical, immuno-oncology and inflammation fields.

We are aware of a number of companies that are developing biologics and small molecule drugs for the treatment of cancer and inflammatory diseases. Many of these companies are well-capitalized and, in contrast to us, have significant clinical experience, and may include our future partners. In addition, these companies compete with us in recruiting scientific and managerial talent. Our success will partially depend on our ability to obtain, maintain, enforce and defend patents and other intellectual property rights with respect to small molecule drugs or biologics that are safer and more effective than competing products. Our commercial opportunity and success will be reduced or eliminated if competing products that are safer, more effective or less expensive than the drugs we develop are or become available.

We expect to compete with small molecule, biologics and other therapeutic platforms and development companies, including, but not limited to, companies such as ChemoCentryx, Tusk/Roche and Agenesis/Gilead for oncology, and Dermira/Lilly and AnaptysBio for inflammatory diseases. In addition, we expect to compete with large, multinational pharmaceutical companies that discover, develop and commercialize small molecule drugs and other therapeutics for use in treating cancer and inflammatory diseases such as AbbVie, Amgen, AstraZeneca plc, Bristol-Myers Squibb, GlaxoSmithKline, Incyte, Kyowa Hakko Kirin, Merck, Novartis, Pfizer, Roche/Genentech and Sanofi/Regeneron. If FLX475, RPT193 or other future drug candidate is eventually approved, it will compete with a range of treatments that are either in development or currently marketed.

Many of our competitors have significantly greater financial, technical, manufacturing, marketing, sales and supply resources or experience than we do. If we successfully obtain approval for any drug candidate, we will face competition based on many different factors, including the safety and effectiveness of our products, the ease with which our products can be administered, the timing and scope of regulatory approvals for these products, the availability and cost of manufacturing, marketing and sales capabilities, price, reimbursement coverage and patent position. Competing products could present superior treatment alternatives, including by being more effective, safer, less expensive or marketed and sold more effectively than any products we may develop. Competitive products may make any product we develop obsolete or noncompetitive before we recover the expense of developing and commercializing such product. Such competitors could also recruit our employees, which could negatively impact our level of expertise and our ability to execute our business plan.

Any inability to attract and retain qualified key management, technical personnel and employees would impair our ability to implement our business plan.

Our success largely depends on the continued service of key management, advisors and other specialized personnel, including Brian Wong, M.D., Ph.D., our President and Chief Executive Officer, Rodney Young, our Chief Financial Officer, William Ho, M.D., Ph.D., our Chief Medical Officer, and Dirk Brockstedt, Ph.D., our Chief Scientific Officer, as well as our ability to attract and retain other highly qualified personnel. The loss of one or more members of our executive team, management team or other key employees or advisors could delay our research and development programs and have a material and adverse effect on our business, financial condition, results of operations and prospects.

The relationships that our key managers have cultivated within our industry make us particularly dependent upon their continued employment with us. We are dependent on the continued service of our technical personnel because of the highly technical nature of our drug candidates and technologies and the specialized nature of the regulatory approval process. Because our management team and key employees are not obligated to provide us with continued service, they could terminate their employment with us at any time without penalty.

Our future success will also depend in large part on our ability to attract and retain other highly qualified scientific, technical and management personnel, as well as personnel with expertise in clinical testing, manufacturing, governmental regulation and commercialization. We face significant competition for personnel from other companies, universities, public and private research institutions, government entities and other organizations.

As of December 31, 2019, we had 67 full-time employees. Our focus on the development of FLX475, RPT193 and other potential future drug candidates will require adequate staffing. We may need to hire and retain new employees to execute our future clinical development and manufacturing plans. We cannot provide assurance that we will be able to hire or retain adequate staffing levels to develop our current and potential future drug candidates or to run our operations or to accomplish all of our objectives.

We may experience difficulties in managing our growth and expanding our operations.

We have limited experience in product development. As our current and potential future drug candidates enter and advance through preclinical studies and any clinical trials, we will need to expand our development, regulatory and manufacturing capabilities or contract with other organizations to provide these capabilities for us.

We may also experience difficulties in the discovery and development of potential future drug candidates using our drug discovery and development engine if we are unable to meet demand as we grow our operations. In the future, we also expect to have to manage additional relationships with collaborators, suppliers and other organizations. Our ability to manage our operations and future growth will require us to continue to improve our operational, financial and management controls, reporting systems and procedures and secure adequate facilities for our operational needs. We may not be able to implement improvements to our management information and control systems in an efficient or timely manner and may discover deficiencies in existing systems and controls.

If any of our drug candidates is approved for marketing and commercialization in the future and we are unable to develop sales, marketing and distribution capabilities on our own or enter into agreements with third parties to perform these functions on acceptable terms, we will be unable to successfully commercialize any such future products.

We currently have no sales, marketing or distribution capabilities or experience. We will need to develop internal sales, marketing and distribution capabilities to commercialize each current and potential future drug candidate that gains FDA approval, which would be expensive and time-consuming, or enter into partnerships with third parties to perform these services. If we decide to market any approved products directly, we will need to commit significant financial and managerial resources to develop a marketing and sales force with technical expertise and supporting distribution, administration and compliance capabilities. If we rely on third parties with such capabilities to market any approved products or decide to co-promote products with partners, we will need to establish and maintain marketing and distribution arrangements with third parties, and there can be no assurance that we will be able to enter into such arrangements on acceptable terms or at all. In entering into third-party marketing or distribution arrangements, any revenue we receive will depend upon the efforts of the third parties and we cannot assure you that such third parties will establish adequate sales and distribution capabilities or be successful in gaining market acceptance for any approved product. If we are not successful in commercializing any product approved in the future, either on our own or through third parties, our business and results of operations could be materially and adversely affected.

Our present and potential future international operations may expose us to business, political, operational and financial risks associated with doing business outside of the United States.

Our business is subject to risks associated with conducting business internationally. Some of our suppliers and clinical trial centers are located outside of the United States, and we recently entered into an agreement with Hanmi with respect to clinical development and other activities in the Hanmi Territory. Furthermore, if we or any future collaborator succeeds in developing any products, we anticipate marketing them in the European Union and other jurisdictions in addition to the United States. If approved, we or our collaborator may hire sales representatives and conduct physician and patient association outreach activities outside of the United States. Doing business internationally involves a number of risks, including but not limited to:

- multiple, conflicting and changing laws and regulations such as privacy regulations, tax laws, export and import restrictions, employment laws, regulatory requirements, and other governmental approvals, permits and licenses;
- failure by us to obtain and maintain regulatory approvals for the use of our products in various countries;
- rejection or qualification of foreign clinical trial data by the competent authorities of other countries;
- additional potentially relevant third-party patent and other intellectual property rights that may be necessary to develop and commercialize our products and drug candidates;

- complexities and difficulties in obtaining, maintaining, enforcing and defending our patent and other intellectual property rights;
- difficulties in staffing and managing foreign operations;
- complexities associated with managing multiple payor reimbursement regimes, government payors or patient self-pay systems;
- limits in our ability to penetrate international markets;
- financial risks, such as longer payment cycles, difficulty collecting accounts receivable, the impact of local and regional financial crises on demand and payment for our products and exposure to foreign currency exchange rate fluctuations;
- natural disasters, political and economic instability, including wars, terrorism and political unrest, outbreak of disease, boycotts, curtailment of trade and other business restrictions, implementation of tariffs;
- certain expenses including, among others, expenses for travel, translation and insurance; and
- regulatory and compliance risks that relate to anti-corruption compliance and record-keeping that may fall within the purview of the U.S. Foreign Corrupt Practices Act, its accounting provisions or its anti-bribery provisions or provisions of anti-corruption or anti-bribery laws in other countries.

Any of these factors could harm our ongoing international clinical operations and supply chain, as well as any future international expansion and operations and, consequently, our business, financial condition, prospects and results of operations.

Our future growth may depend, in part, on our ability to operate in foreign markets, where we would be subject to additional regulatory burdens and other risks and uncertainties.

Our future growth may depend, in part, on our ability to develop and commercialize drug candidates in foreign markets for which we may rely on partnering with third parties. We will not be permitted to market or promote any drug candidate before we receive regulatory approval from the applicable regulatory authority in a foreign market, and we may never receive such regulatory approval for any drug candidate. To obtain separate regulatory approval in foreign countries, we generally must comply with numerous and varying regulatory requirements of such countries regarding safety and efficacy and governing, among other things, clinical trials and commercial sales, pricing and distribution of a drug candidate, and we cannot predict success in these jurisdictions. If we obtain approval of any of our current or potential future drug candidates and ultimately commercialize any such drug candidate in foreign markets, we would be subject to risks and uncertainties, including the burden of complying with complex and changing foreign regulatory, tax, accounting and legal requirements and the reduced protection of intellectual property rights in some foreign countries.

Price controls imposed in foreign markets may adversely affect our future profitability.

In some countries, particularly member states of the European Union, the pricing of prescription drugs is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after receipt of marketing approval for a product. In addition, there can be considerable pressure exerted by governments and other stakeholders on prices and reimbursement levels, including as part of cost-containment measures. Political, economic and regulatory developments, in the United States or internationally, may further complicate pricing negotiations, and pricing negotiations may continue after reimbursement has been obtained. Reference pricing used by various European Union member states and parallel distribution, or arbitrage between low-priced and high-priced member states, can further reduce prices. In some countries, we or future partners may be required to conduct clinical trials or other studies that compare the cost-effectiveness of a drug candidate to other available therapies in order to obtain or maintain reimbursement or pricing approval. Publication of discounts by third-party payors or authorities may lead to further pressure on the prices or reimbursement levels within the country of publication and other countries. If reimbursement of any current or potential future drug candidate that is approved for marketing in the future is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our business and results of operations or prospects could be materially and adversely affected and our ability to commercialize such drug candidate could be materially impaired.

Our business entails a significant risk of product liability, and our inability to obtain sufficient insurance coverage could have a material and adverse effect on our business, financial condition, results of operations and prospects.

As we conduct clinical trials of FLX475 and RPT193, we will be exposed to significant product liability risks inherent in the development, testing, manufacturing and marketing of cancer and inflammatory disease treatments. Product liability claims could delay or prevent completion of our development programs. If we succeed in marketing products, such claims could result in an FDA investigation of the safety and effectiveness of our products, our manufacturing processes and facilities or our marketing programs and potentially a recall of our products or more serious enforcement action, limitations on the approved indications for which they may be used or suspension or withdrawal of approvals. Regardless of the merits or eventual outcome, liability claims may also result in decreased demand for our products, injury to our reputation, costs to defend the related litigation, a diversion of management's time and our resources, substantial monetary awards to trial participants or patients and a decline in our stock price. Any insurance we have or may obtain may not provide sufficient coverage against potential liabilities. Furthermore, clinical trial and product liability insurance is becoming increasingly expensive. As a result, our partners or we may be unable to obtain sufficient insurance at a reasonable cost to protect us against losses caused by product liability claims that could have a material and adverse effect on our business, financial condition, results of operations and prospects.

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

We are exposed to the risk of fraud or other misconduct by our employees, principal investigators, consultants and commercial partners. Misconduct by employees could include intentional failures to comply with FDA regulations, provide accurate information to the FDA, comply with manufacturing standards we may establish, comply with federal and state healthcare fraud and abuse laws and regulations, report financial information or data accurately or disclose unauthorized activities to us. In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Such misconduct could also involve the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. It is not always possible to identify and deter misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a material and adverse effect on our business and financial condition, including the imposition of significant criminal, civil, and administrative fines or other sanctions, such as monetary penalties, damages, fines, disgorgement,

imprisonment, exclusion from participation in government-funded healthcare programs, such as Medicare and Medicaid, integrity obligations, reputational harm and the curtailment or restructuring of our operations.

Failure to comply with health and data protection laws and regulations could lead to government enforcement actions (which could include civil or criminal penalties), private litigation or adverse publicity and could negatively affect our operating results and business.

We and our current and any of our future collaborators may be subject to federal, state and foreign data protection laws and regulations (i.e., laws and regulations that address privacy and data security). In the United States, numerous federal and state laws and regulations, including federal health information privacy laws (e.g., the Health Insurance Portability and Accountability Act (“HIPAA”), as amended by the Health Information Technology for Economic and Clinical Health Act (“HITECH”)), state data breach notification laws, state health information privacy laws and federal and state consumer protection laws (e.g., Section 5 of the Federal Trade Commission Act), that govern the collection, use, disclosure and protection of health-related and other personal information could apply to our operations or the operations of our collaborators. In addition, we may obtain health information from third parties (including research institutions from which we obtain clinical trial data) that are subject to privacy and security requirements under HIPAA, as amended by HITECH, or other privacy and data security laws. Depending on the facts and circumstances, we could be subject to criminal penalties if we knowingly obtain, use, or disclose individually identifiable health information maintained by a HIPAA-covered entity in a manner that is not authorized or permitted by HIPAA.

International data protection laws, including Regulation 2016/679, known as the General Data Protection Regulation (“GDPR”) may also apply to health-related and other personal information obtained outside of the United States. The GDPR went into effect on May 25, 2018. The GDPR introduced new data protection requirements in the European Union, as well as potential fines for noncompliant companies of up to the greater of €20 million or 4% of annual global revenue. The regulation imposes numerous new requirements for the collection, use, storage and disclosure of personal information, including more stringent requirements relating to consent and the information that must be shared with data subjects about how their personal information is used, the obligation to notify regulators and affected individuals of personal data breaches, extensive new internal privacy governance obligations and obligations to honor expanded rights of individuals in relation to their personal information (e.g., the right to access, correct and delete their data). In addition, the GDPR includes restrictions on cross-border data transfers. The GDPR increased our responsibility and liability in relation to personal data that we process where such processing is subject to the GDPR, and we may be required to put in place additional mechanisms to ensure compliance with the GDPR, including as implemented by individual countries. Further, the United Kingdom’s vote in favor of exiting the EU, often referred to as Brexit, has created uncertainty with regard to data protection regulation in the United Kingdom. In particular, it is unclear how data transfers to and from the United Kingdom will be regulated.

In addition, California recently enacted the California Consumer Privacy Act (“CCPA”), which creates new individual privacy rights for California consumers (as defined in the law) and places increased privacy and security obligations on entities handling personal data of consumers or households. The CCPA requires covered companies to provide new disclosure to consumers about such companies’ data collection, use and sharing practices, provide such consumers new ways to opt-out of certain sales or transfers of personal information and provide consumers with additional causes of action. The CCPA took effect on January 1, 2020, and the California Attorney General may bring enforcement actions for violations beginning July 1, 2020. The CCPA was amended in September 2018 and November 2019, and it remains unclear what, if any, further modifications will be made to this legislation or how it will be interpreted. As currently written, the CCPA may impact our business activities and exemplifies the vulnerability of our business to the evolving regulatory environment related to personal data and protected health information.

Compliance with U.S. and international data protection laws and regulations could require us to take on more onerous obligations in our contracts, restrict our ability to collect, use and disclose data or, in some cases, impact our ability to operate in certain jurisdictions. Failure to comply with U.S. and international data protection laws and regulations could result in government enforcement actions (which could include civil or criminal penalties), private litigation or adverse publicity and could negatively affect our operating results and business. Moreover, clinical trial subjects about whom we or any of our potential collaborators obtain information, as well as the providers who share this information with us, may contractually limit our ability to use and disclose the information. Claims that we have violated individuals' privacy rights, failed to comply with data protection laws or breached our contractual obligations, even if we are not found liable, could be expensive and time consuming to defend and could result in adverse publicity that could harm our business.

If we, our CROs or our information technology ("IT") vendors experience security or data privacy breaches or other unauthorized or improper access to, use of or destruction of personal data, we may face costs, significant liabilities, harm to our brand and business disruption.

In connection with our drug discovery and development engine and efforts, we or our CROs may collect and use a variety of personal data, such as name, mailing address, email addresses, phone number and clinical trial information. Although we have extensive measures in place to prevent the sharing and loss of patient data in our sample collection process associated with our drug discovery and development engine, any failure to prevent or mitigate security breaches or improper access to, use of or disclosure of our clinical data or patients' personal data could result in significant liability under state (e.g., breach notification laws), federal (e.g., HIPAA, as amended by HITECH) and international law (e.g., the GDPR). Any failure to prevent or mitigate security breaches or improper access to, use of, or disclosure of our clinical data or patients' personal data may cause a material adverse impact to our reputation, affect our ability to conduct new studies and potentially disrupt our business. We may also rely on third-party IT vendors to host or otherwise process some of our data and that of users, and any failure by such IT vendor to prevent or mitigate security breaches or improper access to or disclosure of such information could have similarly adverse consequences for us. If we are unable to prevent or mitigate the impact of such security or data privacy breaches, we could be exposed to litigation and governmental investigations, which could lead to a potential disruption to our business.

We depend on sophisticated information technology systems to operate our business and a cyber-attack or other breach of these systems could have a material adverse effect on our business.

We rely on information technology systems that we or our CROs or other vendors, contractors or consultants operate to process, transmit and store electronic information in our or their day-to-day operations. The size and complexity of such information technology systems makes them vulnerable to a cyber-attack, malicious intrusion, breakdown, destruction, loss of data privacy or other significant disruption. A successful attack could result in the theft or destruction of intellectual property, data or other misappropriation of assets, or otherwise compromise our confidential or proprietary information and disrupt our operations. Cyber-attacks are becoming more sophisticated and frequent. We have invested in our systems and the protection and recoverability of our data to reduce the risk of an intrusion or interruption, and we monitor and test our systems on an ongoing basis for any current or potential threats. There can be no assurance that these measures and efforts will prevent future interruptions or breakdowns. If we or our CROs or other vendors, contractors or consultants fail to maintain or protect our information technology systems and data integrity effectively or fail to anticipate, plan for or manage significant disruptions to these systems, we or they could have difficulty preventing, detecting and controlling such cyber-attacks and any such attacks could result in losses described above as well as disputes with physicians, patients and our partners, regulatory sanctions or penalties, increases in operating expenses, expenses or lost revenues or other adverse consequences, any of which could have a material adverse effect on our business, results of operations, financial condition, prospects and cash flows.

Our information technology and other internal infrastructure systems, including corporate firewalls, servers, leased lines and connection to the internet, face the risk of systemic failure that could disrupt our operations. A significant disruption in the availability of our information technology and other internal infrastructure systems could cause interruptions and delays in our research and development work.

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

Our research, development and manufacturing involve the use of hazardous materials and various chemicals. We maintain quantities of various flammable and toxic chemicals in our facilities that are required for our research, development and manufacturing activities. We are subject to federal, state and local laws and regulations governing the use, manufacture, storage, handling and disposal of these hazardous materials. We believe our procedures for storing, handling and disposing of these materials in our facilities comply with the relevant guidelines of the state of California and the Occupational Safety and Health Administration of the U.S. Department of Labor. Although we believe that our safety procedures for handling and disposing of these materials comply with the standards mandated by applicable regulations, the risk of accidental contamination or injury from these materials cannot be eliminated. If an accident occurs, we could be held liable for resulting damages, which could be substantial. We are also subject to numerous environmental, health and workplace safety laws and regulations, including those governing laboratory procedures, exposure to blood-borne pathogens and the handling of animals and biohazardous materials. Although we maintain workers' compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of these materials, this insurance may not provide adequate coverage against potential liabilities. Although we have some environmental liability insurance covering certain of our facilities, we may not maintain adequate insurance for all environmental liability or toxic tort claims that may be asserted against us in connection with our storage or disposal of biological or hazardous materials. Additional federal, state and local laws and regulations affecting our operations may be adopted in the future. We may incur substantial costs to comply with, and substantial fines or penalties if we violate, any of these laws or regulations.

Our current operations are concentrated in one location, and we or the third parties upon whom we depend may be adversely affected by natural or other disasters and our business continuity and disaster recovery plans may not adequately protect us from a serious disaster.

Our current operations are concentrated in the San Francisco Bay Area. Any unplanned event, such as earthquake, flood, fire, explosion, extreme weather, medical epidemic, pandemic, power shortage, telecommunication failure or other natural or manmade accidents or incidents that result in us being unable to fully utilize our facilities or the manufacturing facilities of our third-party contract manufacturers, or lose our repository of preclinical and clinical human samples and other valuable laboratory samples, may have a material and adverse effect on our ability to operate our business, particularly on a daily basis, and have significant negative consequences on our financial and operating conditions. Loss of access to these facilities may result in increased costs, delays in the development of our drug candidates or interruption of our business operations. Natural disasters such as earthquakes or wildfires, both of which are prevalent in Northern California, floods or tsunamis could further disrupt our operations, and have a material negative impact on our business, financial condition, results of operations and prospects. If a natural disaster, power outage or other event occurred that prevented us from using all or a significant portion of our headquarters, that damaged critical infrastructure, such as our research facilities or the manufacturing facilities of our third-party contract manufacturers, or that otherwise disrupted operations, it may be difficult or, in certain cases, impossible, for us to continue our business for a substantial period of time. The disaster recovery and business continuity plans we have in place may prove inadequate in the event of a serious disaster or similar event. We may incur substantial expenses as a result of the limited nature of our disaster recovery and business continuity plans, which could have a material adverse effect on our business. As part of our risk management policy, we maintain insurance coverage at levels that we believe are appropriate for our business. However, in the event of an accident or incident at these facilities, we cannot assure you that the amounts of insurance will be sufficient to satisfy any damages and losses. If our facilities, or the manufacturing facilities of our third-party contract manufacturers, are unable to operate because of an accident or incident or for any other reason, even for a short period of time, any or all of our research and development programs may be harmed. Any business interruption may have a material and adverse effect on our business and financial condition.

Risks Related to Our Intellectual Property

If we are unable to obtain, maintain, enforce or defend intellectual property rights related to our technology and current or future drug candidates, or if our intellectual property rights are inadequate, we may not be able to compete effectively.

Our success depends in large part on our ability to obtain and maintain protection in the United States and other countries for our intellectual property rights and proprietary technology. We rely on patents and other forms of intellectual property rights to protect our current or future drug discovery and development engine, drug candidates, methods used to manufacture our current or future drug candidates and methods for treating patients using our current or future drug candidates. We do not currently own any patents or patent applications relating to our proprietary drug discovery and development engine.

The patent prosecution process is expensive, complex and time-consuming. Patent license negotiations also can be complex and protracted, with uncertain results. We may not be able to file, prosecute, maintain, enforce or license all necessary or desirable patents and patent applications at a reasonable cost or in a timely manner. It is also possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. Although we enter into non-disclosure and confidentiality agreements with parties who have access to confidential or patentable aspects of our research and development output, such as our employees, corporate collaborators, outside scientific collaborators, CROs, contract manufacturers, consultants, advisors and other third parties, any of these parties may breach the agreements and disclose such output before a patent application is filed, thereby jeopardizing our ability to seek patent protection. The patent applications that we own or may in-license may fail to result in issued patents, and, even if they do issue as patents, such patents may not cover our current or future technologies or drug candidates in the United States or in other countries or provide sufficient protection from competitors. In addition, the coverage claimed in a patent application can be significantly reduced before the patent is issued and its scope can be reinterpreted after issuance.

Further, although we make reasonable efforts to ensure patentability of our inventions, we cannot guarantee that all of the potentially relevant prior art relating to our patent applications and any issued patents we obtain has been found. For example, publications of discoveries in scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, and in some cases not at all. Additionally, pending patent applications that have been published can, subject to certain limitations, be later amended in a manner that could cover our drug discovery and development engine, our drug candidates or the use of our technologies. We thus cannot know with certainty whether we or any of our future licensors were the first to make the inventions claimed in our pending patent applications or any issued patents we obtain, or that we or our any of our future licensors were the first to file for patent protection of such inventions. For this reason, and because there is no guarantee that any prior art search is absolutely correct and comprehensive, we may be unaware of prior art that could be used to invalidate an issued patent or to prevent our pending patent applications from issuing as patents. Invalidation of any of our patent rights, including in-licensed patent rights, could materially harm our business, financial condition, results of operations and prospects.

Moreover, the patent positions of biopharmaceutical companies are generally uncertain because they may involve complex legal and factual considerations that have, in recent years, been the subject of legal development and change. As a result, the issuance, scope, validity, enforceability and commercial value of our pending patent rights is uncertain. The standards applied by the United States Patent and Trademark Office (“USPTO”) and foreign patent offices in granting patents are not always certain and moreover, are not always applied uniformly or predictably. For example, there is no uniform worldwide policy regarding patentable subject matter or the scope of claims allowable in patents. Changes in either the patent laws or interpretation of the patent laws in the United States and other countries may diminish the value of our patent rights or narrow the scope of our patent protection.

Even if patents do successfully issue and even if such patents cover our current or any future technologies or drug candidates, third parties may challenge their validity, enforceability or scope, which may result in such patents being narrowed, invalidated or held unenforceable. Any successful challenge to any patents we own or may in-license could deprive us of rights necessary for the successful commercialization of any current or future technologies or drug candidates that we may develop. Likewise, if patent applications we own or may in-license with respect to our development programs and current or future technologies or drug candidates fail to issue, if their breadth or strength is threatened or if they fail to provide meaningful exclusivity, other companies could be dissuaded from collaborating with us to develop current or future technologies or drug candidates. Lack of valid and enforceable patent protection could threaten our ability to commercialize current or future products and could prevent us from maintaining exclusivity with respect to the invention or feature claimed in the patent applications. Any failure to obtain or any loss of patent protection could have a material adverse impact on our business and ability to achieve profitability. We may be unable to prevent competitors from entering the market with a product that is similar to or the same as FLX475, RPT193 or other future drug candidates that emerge from our discovery program.

The filing of a patent application or the issuance of a patent is not conclusive as to its ownership, inventorship, scope, patentability, validity or enforceability. Issued patents and patent applications may be challenged in the courts and in the patent office in the United States and abroad. For example, our patent applications or patent applications filed by any of our future licensors may be challenged through third-party submissions, opposition or derivation proceedings. By further example, issued patents may be challenged through reexamination, inter partes review or post-grant review proceedings before the USPTO or patent offices in other jurisdictions or in declaratory judgment actions or counterclaims. An adverse determination in any such submission, proceeding or litigation could prevent the issuance of, reduce the scope of, invalidate or render unenforceable our patent rights; limit our ability to stop others from using or commercializing similar or identical products; allow third parties to compete directly with us without payment to us; or result in our inability to manufacture or commercialize products without infringing third-party patent rights. In addition, if the breadth or strength of protection provided by our patent rights is threatened, it could dissuade companies from collaborating with us to license, develop or commercialize current or future drug candidates. Any of the foregoing could have a material adverse effect on our business, financial condition, results of operations and prospects.

Moreover, some of our intellectual property, including patents and patent applications, are or may in the future be co-owned with third parties. If we are unable to obtain an exclusive license to any such third-party co-owners' interest in such intellectual property, including patents or patent applications, such co-owners may be able to license their rights to other third parties, including our competitors, and our competitors could market competing products and technology. We may need the cooperation of any such co-owners of our patent rights to enforce such patent rights against third parties, and such cooperation may not be provided to us. Any of the foregoing could have a material adverse effect on our competitive position, business prospects and financial conditions.

If we fail to comply with our obligations under any license, collaboration or other intellectual property-related agreements, we may be required to pay damages and could lose intellectual property rights that may be necessary for developing, commercializing and protecting our current or future technologies or drug candidates or we could lose certain rights to grant sublicenses.

Any license, collaboration or other intellectual property-related agreements impose, and any future license, collaboration or other intellectual property-related agreements we enter into are likely to impose, various development, commercialization, funding, milestone, royalty, diligence, sublicensing, insurance, patent prosecution and enforcement or other obligations on us. If we breach any of these obligations, or use the intellectual property licensed to us in an unauthorized manner, we may be required to pay damages and the licensor may have the right to terminate the license. In spite of our best efforts, any of our future licensors might conclude that we have materially breached our license agreements and might therefore terminate the license agreements, thereby removing our ability to develop and commercialize products and technologies covered by these license agreements. Any license agreements we enter into may be complex, and certain provisions in such agreements may be susceptible to multiple interpretations. The resolution of any contract interpretation disagreement that may arise could narrow what we believe to be the scope of our rights to the relevant intellectual property or technology, or increase what we believe to be our financial or other obligations under the relevant agreement, either of which could have a material adverse effect on our business, financial condition, results of operations and prospects.

We may seek to obtain licenses from licensors in the future, however, we may be unable to obtain any such licenses at a reasonable cost or on reasonable terms, if at all. In addition, if any of our future licensors terminate any such license agreements, such license termination could result in our inability to develop, manufacture and sell products that are covered by the licensed technology or could enable a competitor to gain access to the licensed technology. Any of these events could have a material adverse effect on our competitive position, business, financial conditions, results of operations and ability to achieve profitability.

Furthermore, we may not have the right to control the preparation, filing, prosecution, maintenance, enforcement and defense of patents and patent applications that we license from third parties. Therefore, we cannot be certain that these patents and patent applications will be prepared, filed, prosecuted, maintained, enforced and defended in a manner consistent with the best interests of our business. If our future licensors fail to prosecute, maintain, enforce and defend patents we may in-license, or lose rights to licensed patents or patent applications, our license rights may be reduced or eliminated. In such circumstances, our right to develop and commercialize any of our products or drug candidates that is the subject of such licensed rights could be materially adversely affected. In certain circumstances, our licensed patent rights are subject to our reimbursing our licensors for their patent prosecution and maintenance costs.

Moreover, our licensors may own or control intellectual property that has not been licensed to us and, as a result, we may be subject to claims, regardless of their merit, that we are infringing, misappropriating or otherwise violating the licensor's intellectual property rights and the amount of any damages or future royalty obligations that would result if any such claims were successful would depend on the technology and intellectual property we use in products that we successfully develop and commercialize, if any. Therefore, even if we successfully develop and commercialize products, we may be unable to achieve or maintain profitability.

Patent terms may not be able to protect our competitive position for an adequate period of time with respect to our current or future technologies or drug candidates.

Patents have a limited lifespan. In the United States, the standard patent term is typically 20 years after filing. Various extensions may be available. Even so, the life of a patent and the protection it affords are limited. As a result, our patent portfolio provides us with limited rights that may not last for a sufficient period of time to exclude others from commercializing products similar or identical to ours. For example, given the large amount of time required for the research, development, testing and regulatory review of new drug candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized.

Extensions of patent term may be available, but there is no guarantee that we would succeed in obtaining any particular extension—and no guarantee any such extension would lengthen the patent term for a sufficient period of time to exclude others from commercializing products similar or identical to ours. In the United States, the Drug Price Competition and Patent Term Restoration Act of 1984 permits a patent term extension of up to five years beyond the normal expiration of the patent, which is limited to the approved indication (or any additional indications approved during the period of extension). A patent term extension cannot extend the remaining term of a patent beyond 14 years from the date of product approval; only one patent may be extended; and extension is available for only those claims covering the approved drug, a method for using it, or a method for manufacturing it. The applicable authorities, including the FDA and the USPTO in the United States, and any equivalent regulatory authority in other countries, may not agree with our assessment of whether such extensions are available, and may refuse to grant extensions to any patents we obtain, or may grant more limited extensions than we request. An extension may not be granted or may be limited where there is, for example, a failure to exercise due diligence during the testing phase or regulatory review process, failure to apply within applicable deadlines, failure to apply before expiration of relevant patents or some other failure to satisfy applicable requirements. If this occurs, our competitors may be able to launch their products earlier by taking advantage of our investment in development and clinical trials along with our clinical and preclinical data. This could have a material adverse effect on our business and ability to achieve profitability.

Changes in U.S. patent law or the patent law of other countries or jurisdictions could diminish the value of patents in general, thereby impairing our ability to protect our current or any future technologies or drug candidates.

Changes in either the patent laws or interpretation of the patent laws in the United States or elsewhere could increase the uncertainties and costs surrounding the prosecution of patent applications and the enforcement or defense of issued patents. The United States has enacted and implemented wide-ranging patent reform legislation. In 2011, the Leahy-Smith America Invents Act (the “Leahy-Smith Act”), was signed into law, which could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of any issued patents we obtain. The Leahy-Smith Act includes a number of significant changes to U.S. patent law. These include provisions that affect the way patent applications are prosecuted, redefine prior art, may affect patent litigation and switch the U.S. patent system from a “first-to-invent” system to a “first-to-file” system. Under a first-to-file system, assuming the other requirements for patentability are met, the first inventor to file a patent application generally will be entitled to the patent on an invention regardless of whether another inventor had made the invention earlier. These provisions also allow third-party submission of prior art to the USPTO during patent prosecution and set forth additional procedures to challenge the validity of a patent by the USPTO administered post grant proceedings, including derivation, reexamination, inter partes review, post-grant review and interference proceedings. The USPTO developed additional regulations and procedures to govern administration of the Leahy-Smith Act, and many of the substantive changes to patent law associated with the Leahy-Smith Act, and, in particular, the first-to-file provisions, became effective in 2013. Accordingly, it is not clear what, if any, impact the Leahy-Smith Act will have on the operation of our business. The Leahy-Smith Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of any issued patents we obtain, all of which could have a material adverse impact on our business prospects and financial condition.

As referenced above, for example, courts in the U.S. continue to refine the heavily fact-and-circumstance-dependent jurisprudence defining the scope of patent protection available for therapeutics, narrowing the scope of patent protection available in certain circumstances or weakening the rights of patent owners in certain situations. This creates uncertainty about our ability to obtain patents in the future and the value of such patents. We cannot provide assurance that future developments in U.S. Congress, the federal courts and the USPTO will not adversely impact our patent rights. The laws and regulations governing patents could change in unpredictable ways that could weaken our and our licensors’ ability to obtain new patents or to enforce our existing patent rights or patent rights that we might obtain or in-license in the future. Similarly, changes in patent law and regulations in other countries or jurisdictions or changes in the governmental bodies that enforce them or changes in how the relevant governmental authority enforces patent laws or regulations may have a material adverse effect on our and our licensors’ ability to obtain new patents or to protect and enforce our owned or in-licensed patent rights or patent rights that we may obtain or in-license in the future.

Other companies or organizations may challenge our patent rights or may assert patent rights that prevent us from developing and commercializing our current or future products.

Third parties may attempt to invalidate our intellectual property rights. Even if such rights are not directly challenged, disputes could lead to the weakening of our intellectual property rights. Our defense against any attempt by third parties to circumvent or invalidate our intellectual property rights could be costly to us, could require significant time and attention of our management and could have a material and adverse impact on our profitability, financial condition and prospects or ability to successfully compete.

Further, we cannot guarantee that we are aware of all patents and patent applications potentially relevant to our technology or products. There may be issued and pending patents that claim aspects of our current or potential future drug candidates and modifications that we may need for our current or potential future drug candidates. We may not be aware of potentially relevant third-party patents or applications for several reasons. For example, U.S. applications filed before November 29, 2000, and certain U.S. applications filed after that date that will not be filed outside the U.S. remain confidential until patents issue. Patent applications in the United States and elsewhere are published approximately 18 months after the earliest filing for which priority is claimed, with such earliest filing date being commonly referred to as the priority date. Therefore, patent applications covering our drug candidates or technologies could have been filed by others without our knowledge. Additionally, pending patent applications that have been published can, subject to certain limitations, be later amended in a manner that could cover our drug candidates or the use of our technologies.

We may be subject to priority disputes, inventorship disputes and similar proceedings that could, if resolved unfavorably, narrow the scope of our intellectual property protection. We cannot provide any assurances that third-party patents do not exist that might be enforced against our drug candidates or technologies or future methods or products, resulting in either an injunction prohibiting our manufacture or sales or, with respect to our sales, an obligation on our part to pay royalties or other forms of compensation to third parties, which could be significant.

Thus, it is possible that one or more third parties will hold patent rights to which we will need a license, which may not be available on reasonable terms or at all. If such third parties refuse to grant us a license to such patent rights on reasonable terms or at all, we may be required to expend significant time and resources to redesign our technology, drug candidates or the methods for manufacturing our drug candidates or to develop or license replacement technology, all of which may not be commercially or technically feasible. In such case, we may not be able to market such technology or drug candidates and may not be able to perform research and development or other activities covered by these patents. This could have a material adverse effect on our ability to commercialize our drug candidates and our business and financial condition.

We may not be able to protect our intellectual property rights throughout the world, which could negatively impact our business.

Filing, prosecuting and defending patents on current or future technologies or drug candidates in all countries throughout the world would be prohibitively expensive. Competitors or other third parties may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and, further, may export infringing products to territories where we have patent protection or licenses but enforcement is not as strong as that in the United States. These products may compete with our products, and our patent or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Additionally, the laws of some foreign jurisdictions do not protect intellectual property rights to the same extent as the laws in the United States. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Many companies have encountered significant difficulties in protecting and defending intellectual property rights in such foreign jurisdictions. The legal systems of certain countries, including certain developing countries, do not favor the enforcement of patents, trade secrets and other intellectual property protection, particularly those relating to biotechnology, which could make it difficult for us to stop the infringement of our patent rights or the marketing of competing products in violation of our intellectual property and proprietary rights generally. Proceedings to enforce our intellectual property and proprietary rights in foreign jurisdictions could result in substantial costs and could divert our efforts and attention from other aspects of our business. Such proceedings could also put our patent rights at risk of being invalidated or interpreted narrowly, could put our patent applications at risk of not issuing and could provoke third parties to assert claims against us or any of our future licensors. We may not prevail in any lawsuits or other adversarial proceedings that we initiate, and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce such intellectual property and proprietary rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or in-license.

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

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

Our commercial success depends, in part, upon our ability or the ability of any of our future collaborators to develop, manufacture, market and sell our current or any future drug candidates and to use our proprietary technologies without infringing, misappropriating or otherwise violating the proprietary and intellectual property rights of third parties. The biotechnology and pharmaceutical industries are characterized by extensive and complex litigation regarding patents and other intellectual property rights.

We or any of our future licensors or strategic partners, may be party to, or be threatened with, adversarial proceedings or litigation regarding intellectual property rights with respect to our current or any potential future drug candidates and technologies, including derivation, reexamination, inter partes review, post-grant review or interference proceedings before the USPTO and similar proceedings in jurisdictions outside of the United States, such as opposition proceedings. If we or our licensors or strategic partners are unsuccessful in any interference proceedings or other priority or validity disputes (including through any patent oppositions) to which we or they are subject, we may lose valuable intellectual property rights through the loss of one or more patents or our patent claims may be narrowed, invalidated or held unenforceable. In some instances, we may be required to indemnify our licensors or strategic partners for the costs associated with any such adversarial proceedings or litigation. Third parties may also assert infringement, misappropriation or other claims against us, our licensors or our strategic partners based on existing patents or patents that may be granted in the future, as well as other intellectual property rights, regardless of their merit. There is a risk that third parties may choose to engage in litigation or other adversarial proceedings with us, our licensors or our strategic partners to enforce or otherwise assert their patent rights or other intellectual property rights. Even if we believe such claims are without merit, a court of competent jurisdiction could hold that these third-party patents and other intellectual property rights are valid, enforceable and infringed, which could have a material adverse impact on our ability to utilize our drug discovery and development engine or to commercialize our current or any future drug candidates. In order to successfully challenge the validity of any such U.S. patent in federal court, we would need to overcome a presumption of validity by presenting clear and convincing evidence of invalidity. There is no assurance that a court of competent jurisdiction, even if presented with evidence we believe to be clear and convincing, would invalidate the claims of any such U.S. patent.

Further, we cannot guarantee that we will be able to successfully settle or otherwise resolve such adversarial proceedings or litigation. If we are unable to successfully settle future claims on terms acceptable to us, we may be required to engage in or to continue costly, unpredictable and time-consuming litigation and may be prevented from or experience substantial delays in marketing our drug candidates. If we or any of our licensors or strategic partners are found to infringe, misappropriate or violate a third-party patent or other intellectual property rights, we could be required to pay damages, including treble damages and attorney's fees, if we are found to have willfully infringed. In addition, we, or any of our licensors or strategic partners, may choose to seek, or be required to seek, a license from a third party, which may not be available on commercially reasonable terms, if at all. Even if a license can be obtained on commercially reasonable terms, the rights may be non-exclusive, which could give our competitors access to the same technology or intellectual property rights licensed to us, and we could be required to make substantial licensing and royalty payments. We also could be forced, including by court order, to cease utilizing, developing, manufacturing and commercializing our drug discovery and development engine or drug candidates deemed to be infringing. We may be forced to redesign current or future technologies or products. Any of the foregoing could have a material adverse effect on our ability to generate revenue or achieve profitability and possibly prevent us from generating revenue sufficient to sustain our operations.

In addition, we or our licensors or strategic partners may find it necessary to pursue claims or to initiate lawsuits to protect or enforce our patent or other intellectual property rights. If we or our licensors or strategic partners were to initiate legal proceedings against a third party to enforce a patent covering one of our drug candidates or our technology, the defendant could counterclaim that such patent is invalid or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, for example, claiming patent-ineligible subject matter, lack of novelty, indefiniteness, lack of written description, non-enablement, anticipation or obviousness. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO or made a misleading statement during prosecution. The outcome of such invalidity and unenforceability claims is unpredictable. With respect to the validity question, for example, we cannot be certain that there is no invalidating prior art of which we or our licensors or strategic partners and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity or unenforceability, we could lose at least part, and perhaps all, of the patent protection for one or more of our drug candidates. The narrowing or loss of our owned and licensed patent claims could limit our ability to stop others from using or commercializing similar or identical technology and products. All of these events could have a material adverse effect on our business, financial condition, results of operations and prospects. Patent and other intellectual property rights also will not protect our drug candidates and technologies if competitors or third parties design around such drug candidates and technologies without legally infringing, misappropriating or violating our patent or other intellectual property rights.

The cost to us in defending or initiating any litigation or other proceeding relating to our patent or other intellectual property rights, even if resolved in our favor, could be substantial, and any litigation or other proceeding would divert our management's attention and distract our personnel from their normal responsibilities. Such litigation or proceedings could materially increase our operating losses and reduce the resources available for development activities or any future sales, marketing or distribution activities. We may not have sufficient financial or other resources to conduct such litigation or proceedings adequately. Some of our competitors may be able to more effectively sustain the costs of complex patent litigation because they have substantially greater resources. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could delay our research and development efforts and materially limit our ability to continue our operations. Furthermore, because of the substantial amount of discovery required in connection with certain such proceedings, there is a risk that some of our confidential information could be compromised by disclosure. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments and if securities analysts or investors perceive these results to be negative, such announcements could have a material adverse effect on the price of our common stock.

Intellectual property rights of third parties could adversely affect our ability to commercialize our current or future technologies or drug candidates, and we might be required to litigate or obtain licenses from third parties to develop or market our current or future technologies or drug candidates, which may not be available on commercially reasonable terms or at all.

Because the immuno-oncology and inflammation disease landscapes are still evolving, it is difficult to conclusively assess our freedom to operate. Thus, we may unknowingly pursue development of a product or technology that infringes, misappropriates or otherwise violates third-party rights. There are numerous companies that have pending patent applications and issued patents broadly covering immune-therapies generally or covering small molecules directed against the same targets as, or targets similar to, those we are pursuing. Our competitive position may materially suffer if patents issued to third parties or other third-party intellectual property rights cover our current or future technologies, drug candidates or elements thereof or our manufacture or uses relevant to our development plans. In such cases, we may not be in a position to develop or commercialize current or future technologies, drug candidates or elements thereof unless we successfully pursue litigation to nullify or invalidate the third-party intellectual property right concerned, or enter into a license agreement with the intellectual property right holder, if available on commercially reasonable terms. There may be issued patents of which we are not aware, held by third parties, that, if found to be valid and enforceable, could be alleged to be infringed by our current or future technologies or drug candidates. There also may be pending patent applications of which we are not aware that may result in issued patents, which could be alleged to be infringed by our current or future technologies or drug candidates. Should such an infringement claim be successfully brought, we may be required to pay substantial damages or be forced to abandon our current or future technologies or drug candidates or to seek a license from any

patent holders. No assurances can be given that a license will be available on commercially reasonable terms, if at all.

Third-party intellectual property right holders may also actively bring infringement, misappropriation or other claims alleging violations of intellectual property rights against us. We cannot guarantee that we will be able to successfully settle or otherwise resolve such claims. If we are unable to successfully settle future claims on terms acceptable to us, we may be required to engage in or to continue costly, unpredictable and time-consuming litigation and may be prevented from or experience substantial delays in marketing our drug candidates. If we fail in any such dispute, in addition to being forced to pay damages, we may be temporarily or permanently prohibited from commercializing any of our current or future technologies or drug candidates that are held to be infringing, misappropriating or otherwise violating third-party intellectual property rights. We might, if possible, also be forced to redesign current or future technologies or drug candidates so that we no longer infringe, misappropriate or violate the third-party intellectual property rights. Any of these events, even if we were ultimately to prevail, could require us to divert substantial financial and management resources that we would otherwise be able to devote to our business, which could have a material adverse effect on our financial condition and results of operations.

We may not be successful in obtaining necessary or exclusive rights to any drug candidates or products we may develop through acquisitions and in-licensing.

We may be unable to acquire or otherwise in-license any compositions, methods of use, processes or other intellectual property rights from third parties that we identify as necessary for drug candidates that we may wish to develop. The licensing or acquisition of third-party intellectual property rights is a competitive area, and several more established companies may pursue strategies to license or acquire third-party intellectual property rights that we may consider attractive or necessary. These established companies may have a competitive advantage over us due to their size, capital resources and greater clinical development and commercialization capabilities. In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us. We may be unable to license or acquire third-party intellectual property rights on terms that would allow us to make an appropriate return on our investment or at all. If we are unable to successfully obtain rights to required third-party intellectual property rights or maintain the existing intellectual property rights we have, we may have to abandon development of the relevant program or drug candidates, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

Patent rights we may in-license in the future may be subject to a reservation of rights by one or more third parties. For example, the research resulting in any in-licensed patent rights and technology may be funded in part by the U.S. government. As a result, the government may have certain rights, or march-in rights, to such patent rights and technology. When new technologies are developed with government funding, the government generally obtains certain rights in any resulting patents, including a non-exclusive license authorizing the government to use the invention for non-commercial purposes. These rights may permit the government to disclose our confidential information to third parties and to exercise march-in rights to use or allow third parties to use our licensed technology. The government can exercise its march-in rights if it determines that action is necessary because we fail to achieve practical application of the government-funded technology, because action is necessary to alleviate health or safety needs, to meet requirements of federal regulations or to give preference to U.S. industry. In addition, our rights in such inventions may be subject to certain requirements to manufacture products embodying such inventions in the United States. Any exercise by the U.S. government of such rights could harm our competitive position, business, financial condition, results of operations and prospects.

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

As referenced above, in addition to seeking patent protection for certain aspects of our current or future technologies and drug candidates, we also consider trade secrets, including confidential and unpatented know-how, important to the maintenance of our competitive position. However, trade secrets and know-how can be difficult to protect. We protect and plan to protect trade secrets and confidential and unpatented know-how, in part, by entering into non-disclosure and confidentiality agreements with parties who have access to such knowledge, such as our employees, corporate collaborators, outside scientific collaborators, CROs, contract manufacturers, consultants, advisors and other third parties. We also enter into confidentiality and invention or patent assignment agreements with our employees and consultants under which they are obligated to maintain confidentiality and to assign their inventions to us. Despite these efforts, we may not obtain these agreements in all circumstances and we cannot guarantee that we have entered into such agreements with each party that may have or have had access to our trade secrets or proprietary information.

Moreover, individuals with whom we have such agreements may not comply with their terms. Any of these parties may breach such agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for any such breaches. We may be forced to bring claims against third parties, including current or former employees or consultants, or defend claims that they may bring against us, to determine the ownership of what we regard as our intellectual property, including our patent rights. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret, or securing title to an employee- or consultant-developed invention if a dispute arises, is difficult, expensive and time-consuming, and the outcome is unpredictable. If we are unsuccessful in any inventorship disputes to which we are subject, we may lose valuable intellectual property rights, such as ownership of our patent rights. In addition, some courts in the United States and certain foreign jurisdictions disfavor or are unwilling to protect trade secrets. Further, if any of our trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent that competitor from using the technology or information to compete with us. If any of our trade secrets were to be disclosed to or independently developed by a competitor, our competitive position would be materially and adversely harmed.

We may be subject to claims that we or our employees or consultants have wrongfully used or disclosed alleged trade secrets or other proprietary information of our employees' or consultants' former employers or their clients.

Many of our employees or consultants and our licensors' employees or consultants were previously employed at universities or biotechnology or biopharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees and consultants do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that one or more of these employees or consultants or we have inadvertently or otherwise used or disclosed intellectual property, including trade secrets or other proprietary information of any such individual's current or former employers. Litigation or arbitration may be necessary to defend against these claims. If we fail in defending such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel or may be enjoined from using such intellectual property. Any such proceedings and possible aftermath would likely divert significant resources from our core business, including distracting our technical and management personnel from their normal responsibilities. A loss of key research personnel or their work product could limit our ability to commercialize, or prevent us from commercializing, our current or future technologies or drug candidates, which could materially harm our business. Even if we are successful in defending against any such claims, litigation or arbitration could result in substantial costs and could be a distraction to management.

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

Periodic maintenance fees, renewal fees, annuity fees and various other government fees on patents or applications will be due to be paid to the USPTO and various government patent agencies outside of the United States over the lifetime of our patent rights and any patent rights we may own or in-license in the future. The USPTO and various non-U.S. government patent agencies require compliance with several procedural, documentary, fee payment and other similar provisions during the patent application process. We employ reputable law firms and other professionals to help us comply with these requirements, and we may also be dependent on our licensors to take the necessary action to comply with these requirements with respect to our in-licensed intellectual property. In many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with the applicable rules. There are situations, however, in which non-compliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. In such an event, potential competitors might be able to enter the market with similar or identical products, which could have a material adverse effect on our business prospects and financial condition.

If our trademarks and trade names are not adequately protected, then we may not be able to build name recognition in our markets of interest and our business may be adversely affected.

Our trademarks or trade names may be challenged, infringed, circumvented, declared generic or determined to be infringing on other marks. We own a pending U.S. trademark application, but do not yet own a U.S. registered trademark, for our corporate name, "RAPT." We may not be able to protect our rights to these trademarks and trade names or may be forced to stop using these names, which we use for name recognition by potential partners or customers in our markets of interest. If we are unable to establish name recognition based on our trademarks and trade names, we may not be able to compete effectively and our business may be materially adversely affected.

Intellectual property rights do not necessarily address all potential threats to our business.

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations and may not adequately protect our business. The following examples are illustrative:

- others may be able to make small molecule drugs, inhibitors or formulations that are similar to our drug candidates, but that are not covered by the claims of any patents that we own, license or control;
- we or any strategic partners might not have been the first to make the inventions covered by the patent rights that we own, license or control;
- we or our licensors might not have been the first to file patent applications covering certain of our owned and in-licensed inventions;
- others may independently develop the same, similar or alternative technologies without infringing, misappropriating or violating our intellectual property rights;
- it is possible that our pending patent applications will not lead to issued patents;
- issued patents that we may own, in-license or control may not provide us with any competitive advantages, or may be narrowed or held invalid or unenforceable, including as a result of legal challenges;
- our competitors might conduct research and development activities in the United States and other countries that provide a safe harbor from patent infringement claims for certain research and development activities, as well as in countries where we do not have patent rights, and may then use the information learned from such activities to develop competitive products for sale in our major commercial markets;
- we may choose not to file a patent in order to maintain certain trade secrets or know-how, and a third party may subsequently file a patent covering such trade secrets or know-how; and

- the patents of others may have an adverse effect on our business.

Should any of these events occur, they could have a material adverse impact on our business and financial condition.

Risks Related to Government Regulation

Clinical development includes a lengthy and expensive process with an uncertain outcome, and results of earlier studies and trials may not be predictive of future trial results.

Our drug candidates FLX475 and RPT193 are in clinical development, and their risk of failure is high. It is impossible to predict when or if our candidates or any potential future drug candidates will prove effective in humans or will receive regulatory approval. Before obtaining marketing approval from regulatory authorities for the sale of any drug candidate, we must complete preclinical studies and then conduct extensive clinical trials to demonstrate the safety and efficacy of a drug candidate in humans. Clinical testing is expensive and can take many years to complete, and its outcome is inherently uncertain. Failure can occur at any time during the development process. The results of preclinical studies and clinical trials of any of our current or potential future drug candidates may not be predictive of the results of later-stage clinical trials. Drug candidates in later stages of clinical trials may fail to show the desired safety and efficacy traits despite having progressed through preclinical studies and initial clinical trials. A number of companies in the pharmaceutical industry have suffered significant setbacks in advanced clinical trials due to lack of efficacy or safety profiles, notwithstanding promising results in earlier trials.

We are conducting a Phase 1/2 clinical trial investigating FLX475 as a single agent and in combination with pembrolizumab in a broad range of tumors. While we originally intended to provide an initial data readout from the Phase 1/2 trial in the second quarter of 2020, we now expect that timeline will be delayed due to circumstances and uncertainties created by the COVID-19 global pandemic. Further, we completed the initial Phase 1a single and multiple dose escalation cohorts of healthy volunteers in our seamless Phase 1 trial of RPT193 and, because of circumstances and uncertainties created by the COVID-19 global pandemic, we have temporarily paused enrollment in the Phase 1b portion of our seamless Phase 1 trial in patients with AD. Despite these plans, we may experience delays in initiating or completing our clinical trials. We do not know whether planned clinical trials will be completed on schedule or at all, or whether planned clinical trials will begin on time, need to be redesigned, enroll patients on time or be completed on schedule, if at all. Our development programs may be delayed for a variety of reasons, including delays related to:

- the FDA or other regulatory authorities requiring us to submit additional data or imposing other requirements before permitting us to initiate a clinical trial;
- obtaining regulatory approval to commence a clinical trial;
- reaching agreement on acceptable terms with prospective CROs and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and clinical trial sites;
- obtaining institutional review board (“IRB”) approval at each clinical trial site;
- recruiting suitable patients to participate in a clinical trial;
- having patients complete a clinical trial or return for post-treatment follow-up;
- clinical trial sites deviating from trial protocol or dropping out of a trial;
- adding new clinical trial sites; or
- manufacturing sufficient quantities of our drug candidates for use in clinical trials.

Furthermore, we expect to rely on our CROs and clinical trial sites to ensure the proper and timely conduct of our clinical trials and, while we expect to enter into agreements governing their committed activities, we have limited influence over their actual performance.

We could encounter delays if prescribing physicians encounter unresolved ethical issues associated with enrolling patients in clinical trials of our current or potential future drug candidates in lieu of prescribing existing treatments that have established safety and efficacy profiles. Further, a clinical trial may be suspended or terminated by us, our partners, the IRBs of the institutions in which such trials are being conducted, the Data Safety Monitoring Board for such trial or by the FDA or other regulatory authorities due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols, inspection of the clinical trial operations or trial site by the FDA or other regulatory authorities resulting in the imposition of a clinical hold, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from using a drug or therapeutic biologic, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical trial. If we experience delays in the completion, or termination, of any clinical trial of any of our current or potential future drug candidates, the commercial prospects of such drug candidate will be harmed, and our ability to generate product revenue from such drug candidates will be delayed. In addition, any delays in completing our clinical trials will increase our costs, slow our product development and approval process and jeopardize our ability to commence product sales and generate revenue. Any of these occurrences may materially and adversely affect our business, financial condition, results of operations and prospects. In addition, many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of our current or potential future drug candidates.

We may be unable to obtain U.S. or foreign regulatory approval and, as a result, be unable to commercialize FLX475, RPT193 or other future drug candidates.

FLX475, RPT193 and other future drug candidates are and will be subject to extensive governmental regulations relating to, among other things, research, testing, development, manufacturing, safety, efficacy, approval, recordkeeping, reporting, labeling, storage, packaging, advertising and promotion, pricing, marketing and distribution of drugs and therapeutic biologics. Rigorous preclinical testing and clinical trials and an extensive regulatory approval process are required to be successfully completed in the U.S. and in many foreign jurisdictions before a new drug, therapeutic or biologic can be marketed. Satisfaction of these and other regulatory requirements is costly, time-consuming, uncertain and subject to unanticipated delays. It is possible that none of the drug candidates we may develop will obtain the regulatory approvals necessary for us or our potential future partners to begin selling them.

We have very limited experience in conducting and managing the clinical trials necessary to obtain regulatory approvals, including approval by the FDA. The time required to obtain FDA and other approvals is unpredictable but typically takes many years following the commencement of clinical trials, depending upon the type, complexity and novelty of the drug candidate. The standards that the FDA and its foreign counterparts use when regulating us require judgment and can change, which makes it difficult to predict with certainty how they will be applied. Any analysis we perform of data from preclinical and clinical activities is subject to confirmation and interpretation by regulatory authorities, which could delay, limit or prevent regulatory approval. We may also encounter unexpected delays or increased costs due to new government regulations, for example, from future legislation or administrative action, or from changes in FDA policy during the period of product development, clinical trials and FDA regulatory review. It is impossible to predict whether legislative changes will be enacted, or whether FDA or foreign regulations, guidance or interpretations will be changed, or what the impact of such changes, if any, may be.

Any delay or failure in obtaining required approvals could have a material and adverse effect on our ability to generate revenue from the particular drug candidate for which we are seeking approval. Further, we and our potential future partners may never receive approval to market and commercialize any drug candidate. Even if we or a potential future partner obtains regulatory approval, the approval may be for targets, disease indications or patient populations that are not as broad as we intended or desired or may require labeling that includes significant use or distribution restrictions or safety warnings. We or a potential future partner may be subject to post-marketing testing requirements to maintain regulatory approval. If any of our drug candidates prove to be ineffective, unsafe or commercially unviable, we may have to re-engineer FLX475, RPT193 or other future drug candidates, and our entire pipeline could have little, if any, value, which could require us to change our focus and approach to small molecule discovery and development, which would have a material and adverse effect on our business, financial condition, results of operations and prospects.

We are also subject to numerous foreign regulatory requirements governing, among other things, the conduct of clinical trials, manufacturing and marketing authorization, pricing and third-party reimbursement. The foreign regulatory approval process varies among countries and may include all of the risks associated with FDA approval described above as well as risks attributable to the satisfaction of local regulations in foreign jurisdictions. Moreover, the time required to obtain approval may differ from that required to obtain FDA approval. Approval by the FDA does not ensure approval by regulatory authorities outside the United States and vice versa.

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

Any regulatory approvals that we or potential future partners obtain for FLX475, RPT193 or other future drug candidates may also be subject to limitations on the approved indicated uses for which a product may be marketed or to the conditions of approval, or contain requirements for potentially costly post-marketing testing, including “Phase 4” clinical trials, and surveillance to monitor the safety and efficacy of such drug candidate. In addition, if the FDA or other regulatory authority approves FLX475, RPT193 or other future drug candidate, the manufacturing processes, labeling, packaging, distribution, adverse event reporting, storage, import, export, advertising, promotion and recordkeeping for such product will be subject to extensive and ongoing regulatory requirements. These requirements include submissions of safety and other post-marketing information and reports, registration, as well as continued compliance with cGMP and good clinical practices for any clinical trials that we conduct post-approval. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with our third-party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in, among other things:

- restrictions on the marketing or manufacturing of the product, withdrawal of the product from the market or voluntary or mandatory product recalls;
- fines, warning letters or holds on clinical trials;
- refusal by the FDA to approve pending applications or supplements to approved applications filed by us or our strategic partners;
- suspension or revocation of product license approvals;
- product seizure or detention or refusal to permit the import or export of products; and
- injunctions or the imposition of civil or criminal penalties.

The FDA’s policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our drug candidates. We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States or abroad. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability, which would adversely affect our business.

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

In the United States, there have been and continue to be a number of legislative initiatives to contain healthcare costs. For example, in March 2010, the Patient Protection and Affordable Care Act (the “ACA”), was enacted, which substantially changed the way healthcare is financed by both governmental and private insurers, and significantly impacted the U.S. pharmaceutical industry. Among the provisions of the ACA of greatest importance to the pharmaceutical and biotechnology industry are the following:

- an annual, nondeductible fee on any entity that manufactures or imports certain specified branded prescription drugs and biologic agents apportioned among these entities according to their market share in some government healthcare programs;

- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program to 23.1% and 13% of the average manufacturer price for most branded and generic drugs, respectively, and capped the total rebate amount for innovator drugs at 100% of the Average Manufacturer Price (“AMP”);
- a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for certain drugs and biologics that are inhaled, infused, instilled, implanted or injected;
- extension of manufacturers’ Medicaid rebate liability to covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations;
- expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals and by adding new mandatory eligibility categories for individuals with income at or below 133% of the federal poverty level, thereby potentially increasing manufacturers’ Medicaid rebate liability;
- a 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;
- expansion of the entities eligible for discounts under the Public Health program;
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research;
- establishment of a Center for Medicare Innovation at CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending; and
- implementation of the federal physician payment transparency requirements, sometimes referred to as the “Physician Payments Sunshine Act”.

Some of the provisions of the ACA have yet to be fully implemented, and there have been legal and political challenges to certain aspects of the ACA. Since January 2017, President Trump has signed two executive orders and other directives designed to delay, circumvent or loosen certain requirements mandated by the ACA. Concurrently, Congress has considered legislation that would repeal or repeal and replace all or part of the ACA. While Congress has not passed comprehensive repeal legislation, it has enacted laws that modify certain provisions of the ACA and it is unclear how these laws and other efforts to repeal and replace the ACA will impact the ACA and our business.

In addition, other legislative changes have been proposed and adopted in the United States since the ACA was enacted. The Budget Control Act of 2011 among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least \$1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation’s automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers of 2% per fiscal year. These reductions went into effect in 2013 and, due to subsequent legislative amendments to the statute, will remain in effect through 2027 unless additional Congressional action is taken. In 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, further reduced Medicare payments to several types of providers. Additionally, there has been heightened governmental scrutiny recently over the manner in which manufacturers set prices for their marketed products. For example, there have been several recent Congressional inquiries and proposed and enacted federal and state 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 drug products. 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” to lower drug prices and reduce out of pocket costs of drugs that contains additional proposals to increase 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. In addition, on January 31, 2019, the HHS Office of Inspector General, proposed modifications to the federal Anti-Kickback Statute discount safe harbor for the purpose of reducing the cost of drug products to consumers that, among other things, if finalized, will affect discounts paid by manufacturers to Medicare Part D plans, Medicaid managed care organizations and pharmacy benefit managers working with these organizations. Although a number of these, and other potential, proposals will require additional authorization to become effective, Congress and the executive branch have each indicated that it will continue to seek new legislative 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, designed to encourage importation from other countries and bulk purchasing. These new laws and initiatives may result in additional reductions in Medicare and other healthcare funding, which could have a material adverse effect on our future customers and accordingly, our financial operations.

We expect that additional state and federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in reduced demand for our drug candidates or additional pricing pressures.

If we or potential future partners, manufacturers or service providers fail to comply with healthcare laws and regulations, we or they could be subject to enforcement actions, which could affect our ability to develop, market and sell our products and may harm our reputation.

Healthcare providers, physicians and third-party payors, among others, will play a primary role in the prescription and recommendation of any drug candidates for which we obtain marketing approval. Our current and future arrangements with third-party payors, providers and customers, among others, may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we market, sell and distribute our drug candidates for which we obtain marketing approval. Restrictions under applicable federal and state healthcare laws and regulations, include the following:

- the federal Anti-Kickback Statute, which prohibits, among other things, a person or entity 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, lease order, arranging for or recommendation of, any good, facility, item or service, for which payment may be made, in whole or in part, by a federal healthcare program, such as Medicare or Medicaid. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation. In addition, a violation of the Anti-Kickback Statute can form the basis for a violation of the federal False Claims Act (discussed below);
- federal civil and criminal false claims laws and civil monetary penalties laws, including the federal False Claims Act, which provides for civil whistleblower or qui tam actions, that impose penalties against individuals or entities for knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false or fraudulent or making a false statement to avoid, decrease or conceal an obligation to pay money to the federal government. In addition, the government may assert that a claim including items and services resulting from a referral made in violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act;
- HIPAA, which imposes criminal and civil liability for executing a scheme to defraud any healthcare benefit program, or knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false statement in connection with the delivery of or payment for healthcare benefits, items or services. Similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;

- HIPAA, as amended by HITECH, and its implementing regulations, including the Final Omnibus Rule published in January 2013, which impose obligations on certain covered entity healthcare providers, health plans, and healthcare clearinghouses as well as their business associates that perform certain services involving the use or disclosure of individually identifiable health information, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information, and require notification to affected individuals and regulatory authorities of certain breaches of security of individually identifiable health information;
- the federal false statements statute, which prohibits knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false statement in connection with the delivery of or payment for healthcare benefits, items or services;
- the federal transparency requirements known as the federal Physician Payments Sunshine Act, created as part of ACA, which requires certain manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program to report annually to CMS 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 local, state and foreign laws and regulations, such as state anti-kickback and false claims laws that may apply to healthcare items or services reimbursed by third-party payors, including private insurers; local, state and foreign transparency laws that require manufacturers to report information related to payments and transfers of value to other healthcare providers and healthcare entities, marketing expenditures, or drug pricing; state laws that require pharmaceutical companies to register certain employees engaged in marketing activities in the location and comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government; and state and foreign laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Ensuring that our future business arrangements with third parties comply with applicable healthcare laws and regulations could involve substantial costs. If our operations are found to be in violation of any such requirements, we may be subject to penalties, including criminal and significant civil monetary penalties, damages, fines, individual imprisonment, disgorgement, contractual damages, reputational harm, exclusion from participation in government healthcare programs, integrity obligations, injunctions, recall or seizure of products, total or partial suspension of production, denial or withdrawal of pre-marketing product approvals, private qui tam actions brought by individual whistleblowers in the name of the government, refusal to allow us to enter into supply contracts, including government contracts, additional reporting requirements and oversight if subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws, and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations. Although effective compliance programs can mitigate the risk of investigation and prosecution for violations of these laws, these risks cannot be entirely eliminated. Any action against us for an alleged or suspected violation could cause us to incur significant legal expenses and could divert our management's attention from the operation of our business, even if our defense is successful. In addition, achieving and sustaining compliance with applicable laws and regulations may be costly to us in terms of money, time and resources.

If we fail to comply with U.S. and foreign regulatory requirements, regulatory authorities could limit or withdraw any marketing or commercialization approvals we may receive and subject us to other penalties that could materially harm our business.

Even if we receive marketing and commercialization approval of a drug candidate, we will be subject to continuing regulatory requirements, including in relation to adverse patient experiences with the product and clinical results that are reported after a product is made commercially available, both in the United States and any foreign jurisdiction in which we seek regulatory approval. The FDA has significant post-market authority, including the authority to require labeling changes based on new safety information and to require post-market studies or clinical trials to evaluate safety risks related to the use of a product or to require withdrawal of the product from the market. The FDA also has the authority to require a Risk Evaluation and Mitigation Strategy (“REMS”), after approval, which may impose further requirements or restrictions on the distribution or use of an approved drug or therapeutic biologic. The manufacturer and manufacturing facilities we use to make a future product, if any, will also be subject to periodic review and inspection by the FDA and other regulatory agencies, including for continued compliance with cGMP requirements. The discovery of any new or previously unknown problems with our third-party manufacturers, manufacturing processes or facilities may result in restrictions on the product, manufacturer or facility, including withdrawal of the product from the market. We intend to rely on third-party manufacturers and we will not have control over compliance with applicable rules and regulations by such manufacturers. Any product promotion and advertising will also be subject to regulatory requirements and continuing regulatory review. If we or our existing or future partners, manufacturers or service providers fail to comply with applicable continuing regulatory requirements in the U.S. or foreign jurisdictions in which we seek to market our products, we or they may be subject to, among other things, fines, warning letters, holds on clinical trials, delay of approval or refusal by the FDA to approve pending applications or supplements to approved applications, suspension or withdrawal of regulatory approval, product recalls and seizures, administrative detention of products, refusal to permit the import or export of products, operating restrictions, injunction, civil penalties and criminal prosecution.

Even if we are able to commercialize any drug candidate, such drug candidate may become subject to unfavorable pricing regulations or third-party coverage and reimbursement policies, which would harm our business.

Our ability to commercialize any products successfully 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, such as government authorities, private health insurers and health maintenance organizations. Patients who are prescribed medications for the treatment of their conditions generally rely on third-party payors to reimburse all or part of the costs associated with their prescription drugs. Coverage and adequate reimbursement from government healthcare programs, such as Medicare and Medicaid, and private health insurers are critical to new product acceptance. Patients are unlikely to use our future products, if any, unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost.

Cost-containment is a priority in the U.S. healthcare industry and elsewhere. As a result, government authorities and other third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications. Increasingly, third-party payors are requiring that drug companies provide them with predetermined discounts from list prices and are challenging the prices charged for medical products. Third-party payors also may request additional clinical evidence beyond the data required to obtain marketing approval, requiring a company to conduct expensive pharmacoeconomic studies in order to demonstrate the medical necessity and cost-effectiveness of its product. Commercial third-party payors often rely upon Medicare coverage policy and payment limitations in setting their reimbursement rates, but also have their own methods and approval process apart from Medicare determinations. Therefore, coverage and reimbursement for pharmaceutical products in the U.S. can differ significantly from payor to payor. We cannot be sure that coverage and adequate reimbursement will be available for any product that we commercialize and, if reimbursement is available, that the level of reimbursement will be adequate. Coverage and reimbursement may impact the demand for, or the price of, any drug candidate for which we obtain marketing approval. If coverage and reimbursement are not available or are available only at limited levels, we may not be able to successfully commercialize any drug candidate for which we obtain marketing approval.

Additionally, the regulations that govern regulatory approvals, pricing and reimbursement for new drugs and therapeutic biologics vary widely from country to country. Some countries require approval of the sale price of a drug or therapeutic biologic before it can be marketed. In many countries, the pricing review period begins after marketing approval is granted. In some foreign markets, prescription pharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted. As a result, we might obtain regulatory approval for a product in a particular country, but then be subject to price regulations that delay our commercial launch of the product, possibly for lengthy time periods, and negatively impact the revenues we are able to generate from the sale of the product in that country. Adverse pricing limitations may hinder our ability to recoup our investment in one or more drug candidates, even if our drug candidates obtain regulatory approval.

We are subject to U.S. and foreign anti-corruption and anti-money laundering laws with respect to our operations and non-compliance with such laws can subject us to criminal or civil liability and harm our business.

We are subject to the U.S. Foreign Corrupt Practices Act of 1977, as amended (the “FCPA”), the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the USA PATRIOT Act and possibly other state and national anti-bribery and anti-money laundering laws in countries in which we conduct activities. Anti-corruption laws are interpreted broadly and prohibit companies and their employees, agents, third-party intermediaries, joint venture partners and collaborators from authorizing, promising, offering or providing, directly or indirectly, improper payments or benefits to recipients in the public or private sector. We interact with officials and employees of government agencies and government-affiliated hospitals, universities and other organizations. In addition, we may engage third-party intermediaries to promote our clinical research activities abroad or to obtain necessary permits, licenses and other regulatory approvals. We can be held liable for the corrupt or other illegal activities of these third-party intermediaries, our employees, representatives, contractors, partners and agents, even if we do not explicitly authorize or have actual knowledge of such activities.

Our Code of Business Conduct and Ethics mandates compliance with the FCPA and other anti-corruption laws applicable to our business throughout the world. However, we cannot assure you that our employees and third-party intermediaries will comply with this code or such anti-corruption laws. Noncompliance with anti-corruption and anti-money laundering laws could subject us to whistleblower complaints, investigations, sanctions, settlements, prosecution, other enforcement actions, disgorgement of profits, significant fines, damages, other civil and criminal penalties or injunctions, suspension or debarment from contracting with certain persons, the loss of export privileges, reputational harm, adverse media coverage and other collateral consequences. If any subpoenas, investigations or other enforcement actions are launched, or governmental or other sanctions are imposed, or if we do not prevail in any possible civil or criminal litigation, our business, results of operations and financial condition could be materially harmed. In addition, responding to any action will likely result in a materially significant diversion of management’s attention and resources and significant defense and compliance costs and other professional fees. In certain cases, enforcement authorities may even cause us to appoint an independent compliance monitor which can result in added costs and administrative burdens.

Comprehensive tax reform bills could adversely affect our business and financial condition.

In 2017, the U.S. Congress passed the Tax Cuts and Jobs Act, enacting comprehensive tax legislation that includes significant changes to the taxation of business entities. These changes include, among others: a permanent reduction to the corporate income tax rate; a partial limitation on the deductibility of business interest expense; a shift of the U.S. taxation of multinational corporations from a tax on worldwide income to a territorial system (along with certain rules designed to prevent erosion of the U.S. income tax base); and a one-time tax on accumulated offshore earnings held in cash and illiquid assets, with the latter taxed at a lower rate. Notwithstanding the reduction in the corporate income tax rate, the overall impact of this tax reform remains uncertain, and our business and financial condition could be adversely affected. This Annual Report on Form 10-K does not provide an in-depth discussion of any such tax legislation or the manner in which it might affect purchasers of our common stock. We urge our stockholders to consult with their legal and tax advisors with respect to any such legislation and the potential tax consequences of investing in our common stock.

Risks Related to Our Common Stock

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

We expect our operating results to be subject to quarterly fluctuations. Our net loss and other operating results will be affected by numerous factors, including:

- variations in the level of expense related to the ongoing development of our drug candidates or future development programs;
- results of clinical trials, or the addition or termination of clinical trials or funding support by us or potential future partners;
- our execution of any collaboration, licensing or similar arrangements, and the timing of payments we may make or receive under potential future arrangements or the termination or modification of any such potential future arrangements;
- any intellectual property infringement, misappropriation or violation lawsuit or opposition, interference or cancellation proceeding in which we may become involved;
- additions and departures of key personnel;
- strategic decisions by us or our competitors, such as acquisitions, divestitures, spin-offs, joint ventures, strategic investments or changes in business strategy;
- if any of our drug candidates receives regulatory approval, the terms of such approval and market acceptance and demand for such drug candidates;
- regulatory developments affecting our drug candidates or those of our competitors; and
- changes in general market and economic conditions.

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

Our stock price may be volatile and purchasers of our common stock could incur substantial losses.

Our stock price has been and is likely to continue to be volatile. For example, the closing price of our common stock since October 31, 2019 through March 20, 2020, has ranged from a low of \$10.52 to a high of \$51.21. The market price for our common stock may be influenced by many factors, including the other risks described in this “Risk Factors” section and the following:

- our ability to advance FLX475, RPT193 or other potential future drug candidates in the clinic;
- results of our preclinical studies, non-clinical studies and clinical trials for our current and future drug candidates or those of our competitors or potential future partners;
- regulatory or legal developments in the United States and other countries, especially changes in laws or regulations applicable to our products;
- the success of competitive products or technologies;
- introductions and announcements of new products by us, our future commercialization partners, or our competitors, and the timing of these introductions or announcements;
- actions taken by regulatory agencies with respect to our products, clinical trials, manufacturing process or sales and marketing terms;
- actual or anticipated variations in our financial results or those of companies that are perceived to be similar to us;

- the success of our efforts to acquire or in-license additional technologies, products or drug candidates;
- developments concerning any future collaborations, including, but not limited to, those with our sources of manufacturing supply and our commercialization partners;
- market conditions in the pharmaceutical and biotechnology sectors;
- announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures or capital commitments;
- developments, disputes or litigation matters concerning patents or other intellectual property rights, and our ability to obtain and maintain patent protection for our products;
- our ability or inability to raise additional capital and the terms on which we raise it;
- the recruitment or departure of key personnel;
- changes in the structure of healthcare payment systems;
- actual or anticipated changes in earnings estimates or changes in stock market analyst recommendations regarding our common stock, other comparable companies or our industry generally;
- our failure or the failure of our competitors to meet analysts' projections or guidance that we or our competitors may give to the market;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;
- announcement and expectation of additional financing efforts;
- speculation in the press or investment community;
- trading volume of our common stock;
- sales of our common stock by us or our stockholders, including after the expiration of the lockup agreements entered into in connection with our public offerings;
- the concentrated ownership of our common stock;
- changes in accounting principles;
- terrorist acts, acts of war or periods of widespread civil unrest;
- natural disasters, medical epidemics, pandemics and other calamities; and
- general economic, industry and market conditions.

In addition, the stock markets in general, and the markets for pharmaceutical, biopharmaceutical and biotechnology stocks in particular, have experienced extreme volatility that has been often unrelated to the operating performance of the issuer. These broad market and industry factors may seriously harm the market price of our common stock, regardless of our operating performance. Substantial purchases of common stock by existing stockholders could reduce the liquidity of the trading market for our common stock and increase price volatility.

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

Until such time, if ever, as we can generate substantial product revenues, we expect to finance our cash needs through a combination of equity offerings, debt financings, collaborations, strategic alliances and licensing arrangements. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted and the terms of these securities may include liquidation or other preferences that adversely affect your rights as a common stockholder. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends.

If we raise funds through collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or drug candidates or to grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market drug candidates that we would otherwise prefer to develop and market ourselves.

If securities or industry analysts do not publish research or reports about our company, or if they issue an adverse or misleading opinion regarding our stock, our stock price and trading volume could decline.

The trading market for our common stock is influenced by the research and reports that industry or securities analysts publish about us or our business. If any of the analysts who cover us issue an adverse or misleading opinion regarding us, our business model, our intellectual property rights or our common stock performance, or if our target studies and operating results fail to meet the expectations of the analysts, our stock price would likely decline. If one or more of these analysts cease coverage of our company or fail to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline.

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

Based on the beneficial ownership of our capital stock as of February 15, 2020, our executive officers and directors, together with holders of 5% or more of our capital stock and their respective affiliates, beneficially owned over a majority of our common stock after giving effect to the additional purchases by these holders in our initial public offering and follow-on offering. As a result, these stockholders, if acting together, will have significant influence over the outcome of corporate actions requiring stockholder approval, including the election of directors, any merger, consolidation or sale of all or substantially all of our assets and any other significant corporate transaction.

The interests of these stockholders may not be the same as, and may even conflict with, your interests. For example, these stockholders could delay or prevent a change of control of our company, even if such a change of control would benefit our other stockholders, which could deprive our stockholders of an opportunity to receive a premium for their common stock as part of a sale of our company or our assets and might affect the prevailing market price of our common stock. The significant concentration of stock ownership may adversely affect the trading price of our common stock due to investors' perception that conflicts of interest may exist or arise.

Future sales and issuances of our common stock or rights to purchase common stock, including pursuant to our 2019 Equity Incentive Plan, could result in additional dilution of the percentage ownership of our stockholders and could cause our stock price to fall.

We expect that significant additional capital may be needed in the future to continue our planned operations, including further development of our drug discovery and development engine, preparing IND filings, conducting clinical trials, commercialization efforts, expanded research and development activities and costs associated with operating a public company. To raise capital, we may sell common stock, convertible securities or other equity securities in one or more transactions at prices and in a manner we determine from time to time. If we sell common stock, convertible securities or other equity securities, investors may be materially diluted by subsequent sales. Such sales may also result in material dilution to our existing stockholders, and new investors could gain rights, preferences and privileges senior to the holders of our common stock.

Pursuant to our 2019 Equity Incentive Plan (“2019 Plan”), our management is authorized to grant stock options to our employees, directors and consultants. Initially, the aggregate number of shares of our common stock that may be issued pursuant to stock awards under our 2019 Plan is 3,481,819 shares. Additionally, the number of shares of our common stock reserved for issuance under our 2019 Plan will automatically increase on January 1 of each year, beginning on January 1, 2020 and continuing through and including January 1, 2030, by 4% of the total number of shares of our capital stock outstanding on December 31 of the preceding calendar year, or a lesser number of shares determined by our board of directors. Unless our board of directors elects not to increase the number of shares available for future grant each year, our stockholders may experience additional dilution, which could cause our stock price to fall.

We are an “emerging growth company” and our election of reduced reporting requirements applicable to emerging growth companies may make our common stock less attractive to investors.

We are an “emerging growth company” as defined in the Jumpstart Our Business Startups Act, or JOBS Act. For as long as we continue to be an emerging growth company, we may take advantage of exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies, including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, or Section 404, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. We may take advantage of these provisions until December 31, 2024. However, we will cease to be an “emerging growth company” prior to December 31, 2024 if certain events occur, including if (i) we become a “large accelerated filer,” with at least \$700 million of equity securities held by non-affiliates; (ii) our annual gross revenues exceed \$1.07 billion; or (iii) we issue more than \$1.0 billion of non-convertible debt in any three-year period. Even after we no longer qualify as an emerging growth company, we could still qualify as a “smaller reporting company,” which would allow us to take advantage of many of the same exemptions from disclosure requirements including not being required to comply with the auditor attestation requirements of Section 404 and reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements. We cannot predict if investors will find our common stock less attractive because we may rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our share price may be more volatile.

Under the JOBS Act, emerging growth companies can also delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have elected to avail ourselves of an exemption that allows us to delay adopting new or revised accounting standards until such time as those standards apply to private companies. As a result, we will not be subject to the same new or revised accounting standards as other public companies that comply with the public company effective dates, including but not limited to the new lease accounting standard. We may elect to take advantage of other reduced reporting requirements in future filings. As a result of these elections, the information that we provide to our stockholders may be different than you might receive from other public reporting companies. However, if we later decide to opt out of the extended period for adopting new accounting standards, we would need to disclose such decision and it would be irrevocable.

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

As a public company, and particularly after we are no longer an emerging growth company, we will incur significant legal, accounting and other expenses that we did not incur as a private company. The Sarbanes-Oxley Act, the Dodd-Frank Wall Street Reform and Consumer Protection Act, the listing requirements of the Nasdaq Global Market and other applicable securities rules and regulations impose various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. Our management and other personnel will need to devote a substantial amount of time to these compliance initiatives. Moreover, these rules and regulations will increase our legal and financial compliance costs and will make some activities more time-consuming and costly. For example, we expect that these rules and regulations may make it more difficult and more expensive for us to obtain director and officer liability insurance, which in turn could make it more difficult for us to attract and retain qualified members of our board of directors. However, these rules and regulations are often subject to varying interpretations, in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices.

Our ability to use net operating losses to offset future taxable income may be subject to certain limitations.

In general, under Section 382 of the Internal Revenue Code of 1986, as amended (the “Code”) a corporation that undergoes an “ownership change” is subject to limitations on its ability to utilize its pre-change net operating loss (“NOL”) or tax credits to offset future taxable income. Our existing NOLs or credits may be subject to substantial limitations arising from previous ownership changes, and if we undergo an ownership change our ability to utilize NOLs or credits could be further limited by Section 382 of the Code. In addition, future changes in our stock ownership, many of which are outside of our control, could result in an ownership change under Section 382 of the Code. Our NOLs or credits may also be impaired under state law. Accordingly, we may not be able to utilize a material portion of our NOLs or credits. Furthermore, our ability to utilize our NOLs or credits is conditioned upon our attaining profitability and generating U.S. federal and state taxable income. As described above under “—Risks Related to Business,” we have incurred significant net losses since our inception and anticipate that we will continue to incur significant losses for the foreseeable future; thus, we do not know whether or when we will generate the U.S. federal or state taxable income necessary to utilize our NOLs or credits.

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

We have never declared or paid cash dividends on our capital stock. We currently intend to retain all of our future earnings, if any, to finance the growth and development of our business. As a result, capital appreciation, if any, of our common stock will be your sole source of gain for the foreseeable future.

We may incur significant costs from class action litigation due to the volatility of our stock.

Our stock price may fluctuate for many reasons, including as a result of public announcements regarding the progress of our development efforts for our drug discovery and development engine and our drug candidates, the development efforts of future partners or competitors, the addition or departure of our key personnel, variations in our quarterly operating results and changes in market valuations of biopharmaceutical and biotechnology companies. This risk is especially relevant to us because biopharmaceutical and biotechnology companies have experienced significant stock price volatility in recent years. When the market price of a stock has been volatile, holders of that stock have occasionally brought securities class action litigation against the company that issued the stock. If any of our stockholders were to bring a lawsuit of this type against us, even if the lawsuit is without merit, we could incur substantial costs defending the lawsuit. The lawsuit could also divert the time and attention of our management.

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

Provisions in our amended and restated certificate of incorporation and our amended and restated bylaws may delay or prevent an acquisition of our company or a change in our management. In addition, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors. Because our board of directors is responsible for appointing the members of our management team, these provisions could in turn affect any attempt by our stockholders to replace current members of our management team. These provisions include:

- a prohibition on actions by our stockholders by written consent;
- a requirement that special meetings of stockholders, which our company is not obligated to call more than once per calendar year, be called only by the chair of our board of directors, our chief executive officer or our board of directors pursuant to a resolution adopted by a majority of the total number of authorized directors;
- advance notice requirements for election to our board of directors and for proposing matters that can be acted upon at stockholder meetings;
- division of our board of directors into three classes, serving staggered terms of three years each; and
- the authority of the board of directors to issue preferred stock with such terms as the board of directors may determine.

Moreover, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, as amended, which prohibits a person who owns in excess of 15% of our outstanding voting stock from merging or combining with us for a period of three years after the date of the transaction in which the person acquired in excess of 15% of our outstanding voting stock, unless the merger or combination is approved in a prescribed manner. These provisions would apply even if the proposed merger or acquisition could be considered beneficial by some stockholders.

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware and the federal district courts of the United States will be the exclusive forums for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware is the exclusive forum for the following types of actions or proceedings under Delaware statutory or common law:

- (1) any derivative action or proceeding brought on our behalf;
- (2) any action asserting a breach of fiduciary duty owed by any of our directors, officers, employees or agents to us or our stockholders;
- (3) any action asserting a claim against us or any of our directors, officers or other employees arising under any provisions of the Delaware General Corporation Law, our amended and restated certificate of incorporation or our amended and restated bylaws; or
- (4) any action asserting a claim against us or any of our directors, officers or other employees governed by the internal affairs doctrine.

These provisions would not apply to suits brought to enforce a duty or liability created by the Exchange Act or the rules and regulations thereunder. However, these provisions apply to Securities Act claims and Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all suits brought to enforce a duty or liability created by the Securities Act or the rules and regulations thereunder. Accordingly, there is uncertainty as to whether a court would enforce such provisions, and our stockholders will not be deemed to have waived our compliance with the federal securities laws and the rules and regulations thereunder.

Our amended and restated certificate of incorporation further provides that the federal district courts of the United States will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act, subject to and contingent upon a final adjudication in the State of Delaware of the enforceability of such exclusive forum provision. These exclusive-forum provisions may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees, which may discourage lawsuits against us and our directors, officers and other employees. If a court were to find the exclusive-forum provisions in our amended and restated certificate of incorporation to be inapplicable or unenforceable, we may incur additional costs associated with resolving the dispute in other jurisdictions, which could seriously harm our business. For example, the Court of Chancery of the State of Delaware recently determined that a provision stating that U.S. federal district courts are the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act is not enforceable. However, this decision may be reviewed and ultimately overturned by the Delaware Supreme Court. If the Court of Chancery's decision were to be overturned, we would seek to enforce the federal district court exclusive forum provision in our amended and restated certificate of incorporation.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

Our corporate headquarters are located in South San Francisco, California, and comprise approximately 36,754 square feet of space, pursuant to an operating lease that expires in November 2026. This lease includes an option to extend for a further eight years, at market rates that prevail at the time of our election to extend.

We believe that these facilities are sufficient to meet our current needs. We also believe we will be able to obtain additional space, as needed, on commercially reasonable terms.

Item 3. Legal Proceedings.

From time to time, we may become involved in legal proceedings arising in the ordinary course of our business. Our management believes that there are currently no claims or actions pending against us, the ultimate disposition of which would have a material adverse effect on our results of operations, financial condition or cash flows.

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 began trading on The Nasdaq Global Market under the symbol "RAPT" on October 31, 2019. Prior to that date, there was no public market for our common stock.

Holders of Record

As of the close of business on March 20, 2020, there were 158 stockholders of record of our common stock. The actual number of stockholders is greater than this number of record holders, and includes stockholders who are beneficial owners, but whose shares are held in street name by brokers and other nominees. This number of holders of record also does not include stockholders whose shares may be held in trust by other entities.

Dividend Policy

We have never declared or paid any dividends on our capital stock. We currently intend to retain all available funds and future earnings, if any, to fund the development and expansion of our business, and we do not anticipate paying any cash dividends in the foreseeable future. Any future determination regarding the declaration and payment of dividends will be at the discretion of our board of directors and will depend on then-existing conditions, including our financial condition, operating results, contractual restrictions, capital requirements, business prospects and other factors our board of directors may deem relevant. In addition, we may enter into agreements in the future that could contain restrictions on payments of cash dividends.

Stock Price Performance Graph

As a "smaller reporting company" as defined by Item 10 of Regulation S-K, we are not required to provide this information.

Use of Proceeds

In November 2019, we issued an aggregate of 3,427,360 shares of our common stock in our initial public offering at a price of \$12.00 per share for aggregate cash proceeds of \$34.7 million, after deducting underwriting discounts and commissions and net of estimated offering costs. In February 2020, we issued an aggregate of 2,500,000 shares of our common stock in a follow-on public offering at a price of \$30.00 per share for aggregate cash proceeds of \$69.7 million, after deducting underwriting discounts and commissions and net of estimated offering costs.

There has been no material change in the planned use of proceeds from our public offering as described in our final prospectus filed with the SEC on and dated as of February 6, 2020 pursuant to Rule 424(b).

Unregistered Sales of Equity Securities

None.

Issuer Purchases of Equity Securities

None.

Item 6. Selected Consolidated Financial and Other Data.

As a "smaller reporting company" as defined by Item 10 of Regulation S-K, we are not required to provide this information.

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and related notes appearing elsewhere in this Annual Report. This discussion contains forward-looking statements that reflect our plans, estimates and beliefs, and involve risks and uncertainties. Our actual results and the timing of certain events could differ materially from those anticipated in these forward-looking statements as a result of several factors, including those discussed in the section titled “Risk Factors” included under Part I, Item 1A and elsewhere in this Annual Report. See “Special Note Regarding Forward-Looking Statements” in this Annual Report.

Overview

We are a clinical-stage immunology-based biopharmaceutical company focused on discovering, developing and commercializing oral small molecule therapies for patients with significant unmet needs in oncology and inflammatory diseases. Utilizing our proprietary drug discovery and development engine, we are developing highly selective small molecules designed to modulate the critical immune responses underlying these diseases. We have discovered and advanced into clinical development two unique drug candidates each targeting C-C motif chemokine receptor 4 (“CCR4”): FLX475 for the treatment of a range of tumors, and RPT193 for the treatment of allergic inflammatory diseases. We are also pursuing a range of targets, including general control nonderepressible 2 (“GCN2”) and hematopoietic progenitor kinase 1 (“HPK1”), that are in the discovery stage of development.

Financial Overview

Since commencing operations in 2015, we have devoted substantially all of our efforts and financial resources to building our research and development capabilities and establishing our corporate infrastructure. As a result, we have incurred net losses since inception. As of December 31, 2019, we had an accumulated deficit of \$162.0 million. We have incurred net losses of \$43.0 million and \$36.1 million for the years ended December 31, 2019 and 2018, respectively. We do not expect to generate product revenue unless and until we obtain approval for the commercialization of a drug candidate, and we cannot assure you that we will ever generate significant revenue or profits.

Since inception, we have financed our operations primarily through the private placements of convertible preferred stock with net proceeds of \$175.5 million and sale of equity securities. As of December 31, 2019, we had cash and cash equivalents of \$77.4 million and working capital of \$71.3 million. We believe our current cash and cash equivalents, including the net proceeds of approximately \$69.7 million from our follow-on offering (the “Follow-on Offering”) in February 2020, will be sufficient to fund our planned operations for a period of at least twelve months following the filing date of this report.

We expect to incur substantial expenditures in the foreseeable future as we expand our pipeline and advance our drug candidates through clinical development, undergo the regulatory approval process and, if approved, launch commercial activities. Specifically, in the near term we expect to incur substantial expenses relating to our ongoing and planned clinical trials, the development and validation of our manufacturing processes and other development activities.

We will need substantial additional funding to support our continuing operations and pursue our development strategy. Until such time as we can generate significant revenue from sales of our drug candidates, if ever, we expect to finance our operations through the sale of equity, debt financings or other capital sources, including potential collaborations with other companies or other strategic transactions. Adequate funding may not be available to us on acceptable terms, or at all. If we fail to raise capital or enter into such agreements as, and when, needed, we may have to significantly delay, scale back or discontinue the development and commercialization of our drug candidates or delay our efforts to expand our product pipeline. We may also be required to sell or license to other parties rights to develop or commercialize our drug candidates that we would prefer to retain.

Components of Operating Results

Research and Development Expenses

We expense both internal and external research and development costs as such expenses are incurred. We track the external research and development costs incurred for each of our drug candidates. However, we do not track our internal research and development costs by drug candidate, as the related efforts and their costs are typically spread across multiple drug candidates.

We account for non-refundable advance payments for goods or services that will be used in future research and development activities as expenses when the goods have been received or when the service have been performed rather than when the payment is made.

Clinical trial costs are a component of research and development expenses. We expense costs for our clinical trial activities performed by third parties, including clinical research organizations (“CROs”) and other service providers, as they are incurred, based upon estimates of the work completed over the life of the individual study in accordance with the associated agreements. We use information received from internal personnel and outside service providers to estimate the clinical trial costs incurred.

External research and development expenses consist primarily of costs incurred for the development of our drug candidates and include:

- expenses incurred under agreements with CROs, investigative sites and consultants to conduct our clinical trials and preclinical and non-clinical studies;
- costs to acquire, develop and manufacture supplies for clinical trials and other studies, including fees paid to contract manufacturing organizations (“CMOs”); and
- costs related to compliance with drug development regulatory requirements.

Internal research and development costs include:

- salaries and related costs, including stock-based compensation and travel expenses, for personnel in our research and development functions; and
- depreciation and other allocated facility-related and overhead expenses.

We expect our research and development expenses to increase substantially during the next few years as we seek to complete existing and initiate additional clinical trials, pursue regulatory approval of FLX475 and RPT193 and advance other programs into clinical development. Over the next few years, we expect our preclinical, clinical and contract manufacturing expenses to increase significantly relative to what we have incurred to date. Predicting the timing or the final cost to complete our clinical program or validation of our manufacturing and supply processes is difficult and delays may occur because of many factors.

General and Administrative Expenses

General and administrative expenses consist principally of personnel-related costs including payroll and stock-based compensation for personnel in executive, finance, human resources, business and corporate development and other administrative functions; professional fees for legal, consulting and accounting services; rent and other facilities costs, depreciation and other general operating expenses not otherwise classified as research and development expenses.

We anticipate that our general and administrative expenses will increase substantially during the next few years as a result of staff expansion and additional occupancy costs, as well as costs associated with being a public company, including higher professional fees for legal, consulting and accounting services, investor relations costs, higher insurance premiums and other compliance costs.

Other Income, Net

Our cash and cash equivalents are invested in money market funds. Other income, net, consists primarily of interest earned on our cash and cash equivalents and also includes interest earned on promissory notes we executed with our president and chief executive officer and our former chief operating officer. The promissory note with our former chief operating officer was extinguished in May 2019, and the promissory note with our president and chief executive officer was forgiven in June 2019.

Critical Accounting Policies, Significant Judgments and Use of Estimates

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

While our significant accounting policies are described in the notes to our consolidated financial statements, we believe that the following critical accounting policies are most important to understanding and evaluating our reported financial results.

Revenue

Our license and collaborative agreements consist of license, milestone and royalty payments generated through agreements with strategic partners for the development and commercialization of certain product candidates. The terms of an agreement may include a non-refundable upfront fee, payments based upon achievement of milestones and royalties on net product sales. If a portion of the nonrefundable upfront fee or other payments received is allocated to continuing performance obligations under the terms of an agreement, such portion is recorded as deferred revenue and recognized as revenue when (or as) the underlying performance obligation is satisfied.

We recognize revenue when we transfer promised goods or services to customers or counterparties in an amount that reflects the consideration to which we expect to be entitled in exchange for those goods or services. In determining the appropriate amount of revenue to be recognized, we perform the following steps: (i) identification of the promised goods or services in the agreement; (ii) determination of whether the promised goods or services are performance obligations, including whether they are distinct in the context of the agreement; (iii) measurement of the transaction price, including any constraint on variable consideration; (iv) allocation of the transaction price to performance obligations based on estimated selling prices; and (v) recognition of revenue when (or as) we satisfy each performance obligation.

Licenses: If a license to our intellectual property is determined to be distinct from the other performance obligations identified in an agreement, we will recognize revenue from the nonrefundable, upfront fee allocated to the license when the license is transferred to the licensee and the licensee is able to use and benefit from the license. If a license is bundled with other performance obligations, we utilize judgment to assess the nature of the combined performance obligations to determine whether the combined performance obligations are satisfied over time or at a point in time and, if over time, the appropriate method of measuring progress for purposes of recognizing revenue. We evaluate the measure of progress each reporting period and, if necessary, adjust the measure of performance and related revenue recognition.

Milestone payments: If an agreement includes event-based or milestone payments, we evaluate whether the events or milestones are considered likely to be achieved and estimate the amount to be included in the transaction price using the most likely amount method. If it is unlikely that a significant revenue reversal would occur, the value of the associated event-based or milestone payments is included in the transaction price. Event-based or milestone payments that are not within our control are not included in the transaction price until they become likely to be achieved.

Royalties: If an agreement includes sales-based royalties and the license is deemed to be the predominant item to which the royalties relate, 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).

As of December 31, 2019, we recorded deferred revenue of \$4.0 million on the consolidated balance sheet related to our license and collaborative agreement with Hanmi.

Research and Development Expenses

Research and development costs are expensed as incurred. Research and development costs consist primarily of salaries and benefits of research and development personnel, costs related to research activities, preclinical studies, clinical trials, drug manufacturing and allocated overhead and facility-related costs. We account for non-refundable advance payments for goods or services that will be used in future research and development activities as expenses when the related goods have been received or when the service has been performed rather than when the payment is made.

Clinical trial costs are a component of research and development expenses. We expense costs for our clinical trial activities performed by third parties, including CROs and other service providers, as they are incurred, based upon estimates of the work completed over the life of the individual study in accordance with associated agreements. We use information we receive from internal personnel and outside service providers to estimate the progress of services performed and the associated clinical trial costs incurred.

Stock-Based Compensation Expense

We account for stock-based compensation arrangements with employees in accordance with ASC 718, *Stock Compensation*. Stock-based awards issued by us have been primarily stock options with time-based vesting or performance-based vesting. ASC 718 requires the recognition of compensation expense, using a fair value-based method, for costs related to all stock-based awards. To determine the grant-date fair value of stock-based awards with time-based vesting, we utilize the Black-Scholes option pricing model, which is impacted by the fair value of our common stock as well as other variables including, but not limited to, expected term that stock-based awards will remain outstanding, expected common stock price volatility over the term of the stock-based awards, risk-free interest rates and expected dividends. Prior to our IPO, there had been no public market for our common stock. As such, the estimated fair values of our common stock underlying our stock-based awards were determined at each grant date by our board of directors, with input from management, based on the information known to us on the grant date, including a review of any recent events and their potential impact on the estimated per share fair value of our common stock. Valuations of our common stock were prepared by a third-party valuation firm in accordance with the guidance outlined in the American Institute of Certified Public Accountants Technical Practice Aid, Valuation of Privately Held Company Equity Securities Issued as Compensation (the "Practice Aid").

For stock-based awards with time-based vesting, stock-based compensation is recognized over the period during which an awardee is required to provide services in exchange for the stock-based award, known as the requisite service period (usually the vesting period), on a straight-line basis. For stock-based awards with performance-based vesting, the fair value of the award is recognized as expense when the achievement of the associated performance criteria becomes probable, using an accelerated attribution method. For both time-based and performance-based stock-based awards, stock-based compensation expense is recognized based on the fair value determined on the date of grant.

Equity instruments issued to non-employees are accounted for in accordance with ASC 505-50, *Equity Based Payments to Non-Employees*, and are recorded at their fair value on the measurement date and are subject to periodic adjustments as the equity instruments vest. The fair value of stock-based awards granted to non-employees is expensed when vested.

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

Expected term – The expected term represents the period that our stock-based awards granted is expected to be outstanding and is determined using the simplified method (based on the mid-point between the vesting date and the end of the contractual term). We have very limited historical information to develop reasonable expectations about future exercise patterns and post-vesting employment termination behavior for our stock-based awards.

Expected volatility – Prior to our IPO, we did not have any trading history for our common stock, so the expected volatility was estimated based on the average volatility for comparable publicly traded biopharmaceutical companies over a period, where available, equal to the expected term of the stock-based awards. The comparable companies were chosen based on their similar size, life cycle stage or area of specialty.

Risk-Free Interest Rate – The risk-free interest rate is based on the U.S. Treasury zero coupon issues in effect at the time of grant for periods corresponding with the expected term of the stock-based awards.

Expected Dividend – We have never paid dividends on our common stock and have no plans to pay dividends on our common stock. Therefore, we use an expected dividend yield of zero.

We will continue to use judgment in evaluating the expected volatility, expected terms and interest rates utilized for our stock-based compensation expense calculations on a prospective basis.

Stock-based compensation expense for employees and non-employees is reflected in the consolidated statements of operations and comprehensive loss as follows (in thousands):

	Year Ended December 31,	
	2019	2018
Research and development	1,076	542
General and administrative	975	628
Total stock-based compensation expense	<u>\$ 2,051</u>	<u>\$ 1,170</u>

Common Stock Valuations

Prior to our initial public offering (“IPO”), the grant date fair value of our common stock was determined by our board of directors with the assistance of management and an independent third-party valuation specialist. The grant date fair value of our common stock was determined using valuation methodologies that utilize certain assumptions, including probability weighting of events, volatility, time to liquidation, a risk-free interest rate and a discount for lack of marketability (Level 3 inputs). In determining the fair value of our common stock, the methodologies used to estimate our enterprise value were performed using methodologies, approaches and assumptions consistent with the Practice Aid. The methodology to determine the fair value of our common stock included estimating the fair value of the enterprise using a market approach, which estimates our fair value by including an estimation of the value of the business based on guideline public companies under a number of different scenarios. The assumptions used to determine the estimated fair value of our common stock are based on numerous objective and subjective factors, combined with management judgment, including external market conditions affecting the pharmaceutical and biotechnology industry and trends within the industry; our stage of development; the rights, preferences and privileges of our convertible preferred stock relative to those of our common stock; the prices at which we sold shares of our convertible preferred stock; our financial condition and

operating results, including our levels of available capital resources; the progress of our research and development efforts, our stage of development and business strategy; equity market conditions affecting comparable public companies; general U.S. market conditions; and the lack of marketability of our common stock.

The Practice Aid identifies various available methods for allocating enterprise value across classes and series of capital stock to determine the estimated fair value of common stock at each valuation date. In accordance with the Practice Aid, we considered the following methods:

- *Option Pricing Method.* Under the option pricing method (“OPM”), shares are valued by creating a series of call options with exercise prices based on the liquidation preferences and conversion terms of each equity class. The estimated fair values of the preferred and common stock are inferred by analyzing these options.
- *Probability-Weighted Expected Return Method.* The probability-weighted expected return method (“PWERM”) is a scenario-based analysis that estimates value per share based on the probability-weighted present value of expected future investment returns, considering each of the possible outcomes available to us, as well as the economic and control rights of each share class.

Based on our early stage of development and other relevant factors, we determined that the OPM was the most appropriate method for allocating our enterprise value to determine the estimated fair value of our common stock for valuations during 2018. In 2019 until our IPO in November 2019, we used the PWERM to determine the estimated fair value of our common stock. The PWERM is appropriate for a company expecting a near term liquidity event. In determining the estimated fair value of our common stock, we considered the fact that our stockholders could not freely trade our common stock in the public markets. Accordingly, we applied discounts to reflect the lack of marketability of our common stock based on the weighted-average expected time to liquidity.

Following our IPO, our board of directors determines the fair value of our common stock based on the closing price of our common stock on the date of grant.

Income Taxes

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

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

As of December 31, 2019, our total deferred tax assets were \$34.6 million. Due to our lack of earnings history and uncertainties surrounding our ability to generate future taxable income, the net deferred tax assets have been fully offset by a valuation allowance. The deferred tax assets were primarily comprised of federal and state tax net operating losses (“NOLs”). Utilization of NOLs may be limited by the “ownership change” rules, as defined in Section 382 of the Internal Revenue Code. Similar rules may apply under state tax laws. Our ability to use our remaining NOLs may be further limited if we experience an ownership change as a result of future changes in our stock ownership.

Results of Operations

Comparison of the Years Ended December 31, 2019 and 2018

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

	Year Ended December 31,		\$ Change	% Change
	2019	2018		
Operating expenses:				
Research and development	\$ 34,910	\$ 31,767	\$ 3,143	10%
General and administrative	8,719	5,180	3,539	68%
Total operating expenses	43,629	36,947	6,682	18%
Loss from operations	43,629	36,947	6,682	18%
Other income				
Other income, net	1,292	800	492	62%
Net loss before taxes	42,337	36,147	6,190	17%
Provision for income taxes	660	—	660	*
Net loss	\$ 42,997	\$ 36,147	\$ 6,850	19%

*: Percentage not meaningful

Research and Development Expenses

Research and development expenses increased \$3.1 million, or 10%, to \$34.9 million for the year ended December 31, 2019 from \$31.8 million for the year ended December 31, 2018. The increase in research and development expenses was primarily due to an increase of \$3.6 million in clinical costs relating to RPT193, an increase of \$0.5 million in clinical costs relating to FLX475, an increase of \$1.3 million in personnel and other costs, \$1.0 million of facilities related expenses and an increase of \$0.8 million in consulting, offset by a decrease of \$2.3 million of outsourced research and development costs, a decrease of \$1.6 million in laboratory supplies to support our preclinical programs and a decrease of \$0.2 million in depreciation expense. We expect our research and development expenses to increase substantially during the next few years as we seek to complete existing and initiate additional clinical trials, pursue regulatory approval of FLX475 and RPT193 and advance other programs into the clinic.

The following is a comparison of research and development expenses for the years ended December 31, 2019 and 2018 (in thousands):

	Year Ended December 31,	
	2019	2018
External development expenses:		
FLX475	\$ 6,542	\$ 2,941
RPT193	5,265	1,324
Other Programs	685	1,204
Internal research and development expenses	22,418	26,298
Total research and development expenses	\$ 34,910	\$ 31,767

As previously noted, we do not track our own internal research and development costs by drug candidate, as the related efforts and their costs are typically spread across multiple drug candidates.

General and Administrative Expenses

General and administrative expenses increased \$3.5 million, or 68%, to \$8.7 million for the year ended December 31, 2019 from \$5.2 million for the year ended December 31, 2018. The increase was primarily due to an increase of \$0.9 million in consultant costs, an increase of \$0.7 million in accounting and audit related costs, an increase of \$0.8 million in legal fees, an increase of \$0.6 million in personnel costs, an increase of \$0.3 million in insurance and corporate fees as a public company, an increase in \$0.1 million of facilities related expenses and an increase of \$0.1 million in travel costs. We expect our general and administrative expenses to increase substantially during the next few years as a result of staff expansion, costs associated with being a public company, including higher insurance premiums, legal and accounting fees and other compliance costs associated with operating a public company.

Other Income, Net

Other income, net increased \$0.5 million to \$1.3 million for the year ended December 31, 2019 from \$0.8 million for the year ended December 31, 2018. The increase was primarily due to an increase in interest income as a result of a higher average cash and cash equivalents balances in 2019.

Liquidity and Capital Resources

We had cash and cash equivalents of \$77.4 million and working capital of \$71.3 million as of December 31, 2019. Our cash and cash equivalents are held in money market funds. Since inception, we have incurred net losses and negative cash flows from operations. At December 31, 2019, we had an accumulated deficit of \$162.0 million. In addition, we expect to incur substantial costs in order to conduct research and development activities necessary to develop and commercialize a product. Additional capital will be needed to undertake these activities and we intend to raise such capital through the issuance of additional equity, borrowings and strategic alliances with other companies. However, if such capital is not available at adequate levels or on acceptable terms, we could be required to significantly reduce operating expenses and delay or reduce the scope of or eliminate some of our development programs. We believe our current cash and cash equivalents, including the net proceeds of approximately \$69.7 million from the Follow-on Offering in February 2020, will be sufficient to fund our anticipated level of operations through at least the next 12 months following the filing date of this report.

We will continue to require additional capital to develop our product candidates and fund operations for the foreseeable future. We may seek to raise capital through private or public equity or debt financings, collaborative or other arrangements with other companies, or through other sources of financing. Adequate additional funding may not be available to us on acceptable terms or at all. Our failure to raise capital as and when needed could have a negative impact on our financial condition and our ability to pursue our business strategies. We anticipate that we will need to raise substantial additional capital, the requirements of which will depend on many factors, including:

- the scope, rate of progress and costs of our drug discovery, preclinical development activities, laboratory testing and clinical trials for our drug candidates;
- the number and scope of clinical programs we decide to pursue;
- the scope and costs of manufacturing development and commercial manufacturing activities;
- the extent to which we acquire or in-license other drug candidates and technologies;
- the cost, timing and outcome of regulatory review of our drug candidates;
- the cost and timing of establishing sales and marketing capabilities, if any of our drug candidates receive marketing approval;
- the costs of preparing, filing and prosecuting patent applications, obtaining, maintaining and enforcing our intellectual property rights and defending intellectual property-related claims;
- our ability to establish and maintain collaborations on favorable terms, if at all;
- our efforts to enhance operational systems and our ability to attract, hire and retain qualified personnel, including personnel to support the development of our drug candidates;

- the costs associated with being a public company; and
- the cost associated with commercializing our drug candidates, if they receive marketing approval.

See “Risk Factors” for additional risks associated with our substantial capital requirements.

If we raise additional funds by issuing equity securities, our stockholders may experience dilution. Any future debt financing may impose upon us additional covenants that restrict our operations, including limitations on our ability to incur liens or additional debt, pay dividends, repurchase our common stock, make certain investments and engage in certain merger, consolidation or asset sale transactions. Any equity or debt financing may contain terms that are not favorable to us or our stockholders. If we are unable to raise additional funds when needed, we may be required to delay, reduce or terminate some or all of our development programs and clinical trials. We may also be required to sell or license to other parties’ rights to develop or commercialize our drug candidates that we would prefer to retain.

Summary Consolidated Statements of Cash Flows

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

	Year Ended December 31,	
	2019	2018
Net cash (used in) provided by:		
Operating activities	\$ (35,474)	\$ (32,953)
Investing activities	(843)	(3,500)
Financing activities	49,902	52,734
Net increase in cash and cash equivalents	<u>\$ 13,585</u>	<u>\$ 16,281</u>

Operating Activities

Net cash used in operating activities was \$35.5 million for the year ended December 31, 2019, reflecting a net loss of \$43.0 million, partially offset by non-cash charges for depreciation, amortization and stock-based compensation expense of \$3.4 million and net cash provided by changes in operating assets and liabilities of \$4.1 million. Net cash used in operating activities was \$33.0 million for the year ended December 31, 2018, reflecting a net loss of \$36.1 million, partially offset by non-cash charges for depreciation, amortization and stock-based compensation expense of \$2.4 million, and net cash provided by changes in operating assets and liabilities of \$0.7 million.

Investing Activities

Cash used in investing activities was \$0.8 million and \$3.5 million for years ended December 31, 2019 and 2018, respectively, and primarily resulted from the purchase of laboratory equipment and leasehold improvements.

Financing Activities

Net cash provided by financing activities was \$49.9 million for the year ended December 31, 2019, primarily from the receipt of net proceeds of \$34.7 million from our IPO and \$14.4 million from the issuance of our convertible preferred stock. Net cash provided by financing activities was \$52.7 million for the year ended December 31, 2018, primarily from the issuance of our convertible preferred stock.

Contractual Obligations and Commitments

The following table summarizes our contractual obligations as of December 31, 2019 (in thousands):

	<u>Less than 1 year</u>	<u>1-3 years</u>	<u>4-5 years</u>	<u>More than 5 years</u>	<u>Total</u>
Contractual obligations:					
Operating lease obligations	\$ 1,602	\$ 4,007	\$ 4,291	\$ 4,396	\$ 14,296
Total contractual obligations:	<u>\$ 1,602</u>	<u>\$ 4,007</u>	<u>\$ 4,291</u>	<u>\$ 4,396</u>	<u>\$ 14,296</u>

As of December 31, 2019, our commitments consisted of operating leases for our facilities of approximately 36,754 square feet. Under the terms of the agreements, we will have lease obligations, net of sublease income, of \$14.3 million from 2020 through 2026.

We enter into contracts in the normal course of business with third-party contract organizations for clinical trials, non-clinical studies and testing, and other services and products for operating purposes. These contracts generally provide for termination following a certain period after notice and, therefore, we believe that our non-cancelable obligations under these agreements are not material and are not included in the table above.

Off-Balance Sheet Arrangements

We currently have not entered into and do not have any relationships with unconsolidated entities or financial collaborations, such as entities often referred to as structured finance or special purpose entities, which would have been established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purpose.

Indemnification

As permitted under Delaware law and in accordance with our bylaws, we indemnify our officers and directors for certain events or occurrences while the officer or director is or was serving in such capacity pursuant to indemnification agreements. We believe the fair value of the indemnification rights and agreements is minimal. Accordingly, we have not recorded any liabilities for these indemnification rights and agreements as of December 31, 2019 and 2018.

JOBS Act Accounting Election

The Jumpstart Our Business Startups Act of 2012 (the "JOBS Act"), permits an "emerging growth company" such as us to take advantage of an extended transition period to comply with new or revised accounting standards applicable to public companies. We are choosing to elect the extended transition period for complying with new or revised accounting standards pursuant to Section 107(b) of the JOBS Act until the earlier of the date we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, our financial statements may not be comparable to companies that comply with new or revised accounting pronouncements as of public company effective dates.

We will remain an emerging growth company until the earliest of (1) the last day of our first fiscal year (a) following the fifth anniversary of the completion of the IPO, (b) in which we have total annual gross revenue of at least \$1.07 billion, or (c) in which we are deemed to be a large accelerated filer, which means the market value of our common stock that is held by non-affiliates exceeds \$700.0 million of the prior June 30th and (2) the date on which we have issued more than \$1.0 billion in non-convertible debt securities during the prior three-year period.

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

As a "smaller reporting company" as defined by Item 10 of Regulation S-K, we are not required to provide this information.

Item 8. Financial Statements and Supplementary Data.

**RAPT THERAPEUTICS, INC.
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS**

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Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of RAPT Therapeutics, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of RAPT Therapeutics, Inc. (f/k/a FLX Bio, Inc.) (the Company) as of December 31, 2019 and 2018, the related consolidated statements of operations and comprehensive loss, convertible preferred stock and stockholders' equity (deficit), and cash flows for each of the two years in the period ended December 31, 2019, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2019, in conformity with U.S. generally accepted accounting principles.

Basis for Opinion

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

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

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

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2017.

Redwood City, California
March 30, 2020

RAPT THERAPEUTICS, INC.
CONSOLIDATED BALANCE SHEETS
(In thousands, except share and per share data)

	December 31,	
	2019	2018
Assets		
Current assets:		
Cash and cash equivalents	\$ 77,383	\$ 63,798
Prepaid expenses and other current assets	3,123	1,264
Total current assets	80,506	65,062
Property and equipment, net	3,707	4,159
Other assets	389	389
Total assets	<u>\$ 84,602</u>	<u>\$ 69,610</u>
Liabilities, convertible preferred stock and stockholders' equity (deficit)		
Current liabilities:		
Accounts payable	\$ 1,143	\$ 1,771
Accrued expenses	3,642	2,488
Deferred revenue, current	4,000	—
Other current liabilities	471	384
Total current liabilities	9,256	4,643
Deferred rent, net of current portion	2,225	969
Commitments		
Convertible preferred stock, \$0.0001 par value: no shares and 104,018,468 shares authorized at December 31, 2019 and 2018, respectively; no shares and 16,415,281 shares issued and outstanding at December 31, 2019 and 2018, respectively	—	161,111
Stockholders' equity (deficit):		
Preferred stock, \$0.0001 par value: 50,000,000 shares authorized; no shares issued and outstanding at December 31, 2019 and 2018	—	—
Common stock, \$0.0001 par value; 500,000,000 shares authorized; 21,833,037 and 878,413 shares issued and outstanding at December 31, 2019 and 2018, respectively	2	1
Additional paid-in capital	235,049	22,441
Related party promissory note for the purchase of common stock	—	(598)
Accumulated other comprehensive income (loss)	20	(4)
Accumulated deficit	(161,950)	(118,953)
Total stockholders' equity (deficit)	73,121	(97,113)
Total liabilities, convertible preferred stock and stockholders' equity (deficit)	<u>\$ 84,602</u>	<u>\$ 69,610</u>

See accompanying notes to consolidated financial statements.

RAPT THERAPEUTICS, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS
(In thousands, except per share data)

	Year Ended December 31,	
	2019	2018
Operating expenses:		
Research and development	\$ 34,910	\$ 31,767
General and administrative	8,719	5,180
Total operating expenses	43,629	36,947
Loss from operations	43,629	36,947
Other income		
Other income, net	1,292	800
Net loss before taxes	42,337	36,147
Provision for income taxes	660	—
Net loss	\$ 42,997	\$ 36,147
Other comprehensive (income) loss	(24)	4
Total comprehensive loss	\$ 42,973	\$ 36,151
Net loss per share, basic and diluted	\$ 9.89	\$ 58.09
Weighted average number of shares used in computing net loss per share, basic and diluted	4,346,400	622,289

See accompanying notes to consolidated financial statements.

RAPT THERAPEUTICS, INC.
CONSOLIDATED STATEMENTS OF CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' EQUITY (DEFICIT)
(In thousands, except share amounts)

	Convertible Preferred Stock		Common Stock		Additional Paid-In Capital	Related Party Promissory Notes for the Purchase of Common Stock	Accumulated Deficit	Accumulated Other Comprehensive Income (Loss)	Total Stockholders' Equity (Deficit)
	Shares	Amount	Shares	Amount					
Balance at December 31, 2017	75,563,784	\$ 108,643	880,191	\$ 1	\$ 21,005	\$ (605)	\$ (82,806)	\$ —	\$ (62,405)
Issuance of Series C convertible preferred stock, net of issuance cost	13,054,684	29,914	—	—	—	—	—	—	—
Issuance of Series C-2 convertible preferred stock, net of issuance cost	9,873,412	22,554	—	—	—	—	—	—	—
Issuance of common stock upon exercise of stock options, net of repurchase	—	—	6,555	—	266	—	—	—	266
Repurchase of common stock from related party	—	—	(8,333)	—	—	17	—	—	17
Interest on promissory notes from related parties for purchase of common stock	—	—	—	—	—	(10)	—	—	(10)
Stock-based compensation	—	—	—	—	1,170	—	—	—	1,170
Foreign currency translation adjustment	—	—	—	—	—	—	—	(4)	(4)
Net loss	—	—	—	—	—	—	(36,147)	—	(36,147)
Balance at December 31, 2018	98,491,880	161,111	878,413	1	22,441	(598)	(118,953)	(4)	(97,113)
Issuance of common stock upon initial public offering, net of issuance cost	—	—	3,427,360	—	34,721	—	—	—	34,721
Issuance of Series C-2 convertible preferred stock, net of issuance cost	6,311,445	14,379	—	—	—	—	—	—	—
Conversion of Series A, B, C, C-2 convertible preferred stock to common stock	(104,803,325)	(175,490)	17,467,184	1	175,489	—	—	—	175,490
Issuance of common stock upon exercise of stock options, net of repurchase	—	—	143,415	—	347	—	—	—	347
Repurchase of common stock from related party	—	—	(83,335)	—	—	174	—	—	174
Paydown of promissory notes from related parties for purchase of common stock	—	—	—	—	—	73	—	—	73
Forgiveness of promissory notes from related parties	—	—	—	—	—	353	—	—	353
Interest on promissory notes from related parties for purchase of common stock	—	—	—	—	—	(2)	—	—	(2)
Stock-based compensation	—	—	—	—	2,051	—	—	—	2,051
Foreign currency translation adjustment	—	—	—	—	—	—	—	24	24
Net loss	—	—	—	—	—	—	(42,997)	—	(42,997)
Balance at December 31, 2019	—	\$ —	21,833,037	\$ 2	\$ 235,049	\$ —	\$ (161,950)	\$ 20	\$ 73,121

See accompanying notes to consolidated financial statements.

RAPT THERAPEUTICS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Year Ended December 31,	
	2019	2018
Operating activities		
Net loss	\$ (42,997)	\$ (36,147)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	1,330	1,237
Stock-based compensation expense	2,051	1,170
Loss (gain) on disposal of capital equipment	(35)	17
Gain on foreign exchange	24	—
Other noncash income (loss), net	20	(14)
Changes in operating assets and liabilities:		
Prepaid expenses and other long-term assets	(1,859)	(691)
Deferred revenue	4,000	—
Accounts payable and accrued liabilities	736	1,437
Deferred rent	1,256	38
Net cash used in operating activities	(35,474)	(32,953)
Investing activities		
Proceeds from sale of equipment	45	—
Purchase of property and equipment	(888)	(3,500)
Net cash used in investing activities	(843)	(3,500)
Financing activities		
Proceeds from the sale of convertible preferred stock, net of issuance costs	14,379	52,468
Proceeds from initial public offering	34,721	—
Proceeds from issuance of common stock, net of repurchases	802	266
Net cash provided by financing activities	49,902	52,734
Net increase in cash and cash equivalents	13,585	16,281
Cash and cash equivalents at beginning of year	63,798	47,517
Cash and cash equivalents at end of year	\$ 77,383	\$ 63,798
Supplemental disclosures of cash flow information:		
Cash paid for income taxes	\$ 660	\$ —
Supplemental disclosures of non-cash investing and financing information		
Property and equipment purchases included in accounts payable	\$ —	\$ 753
Convertible preferred stock converted to common stock	\$ 175,490	\$ —
Forgiveness of promissory notes from related party for purchase of common stock	\$ 397	\$ —

See accompanying notes to consolidated financial statements.

1. Organization

Description of the Business

RAPT Therapeutics, Inc. (“RAPT” or the “Company”) is a clinical-stage, immunology-based biopharmaceutical company focused on discovering, developing and commercializing oral small molecule therapies for patients with significant unmet needs in oncology and inflammatory diseases. Utilizing its proprietary drug discovery and development engine, the Company develops highly selective small molecules that are designed to modulate the critical immune responses underlying these diseases. In May 2019, the Company changed its name from FLX Bio, Inc. to RAPT Therapeutics, Inc.

The Company is located in South San Francisco, California.

Equity Financings

In November 2019, the Company completed its initial public offering (“IPO”), pursuant to which the Company issued an aggregate of 3,427,360 shares of its common stock at an offering price of \$12.00 per share for net proceeds of \$34.7 million after deducting underwriting discounts and other offering related costs. Immediately prior to the closing of the IPO, all outstanding shares of the Company’s convertible preferred stock converted into 17,467,184 shares of the Company’s common stock.

In connection with the completion of its IPO, the Company’s certificate of incorporation was amended and restated to provide for 500,000,000 authorized shares of common stock with a par value of \$0.0001 per share and 50,000,000 authorized shares of preferred stock with a par value of \$0.0001 per share.

In February 2020, the Company completed an underwritten follow-on public offering (“Follow-on Offering”) of 2,500,000 shares of its common stock issued at an offering price of \$30.00 per share. The shares issued in the Follow-on Offering generated approximately \$69.7 million in net proceeds after deducting underwriting discounts and other offering related costs.

Liquidity and Management Plans

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. Since inception, the Company has incurred net losses and negative cash flows from operations. During the year ended December 31, 2019, the Company incurred a net loss of \$43.0 million and used \$35.5 million of cash in operations. At December 31, 2019, the Company had cash and cash equivalents of \$77.4 million and working capital of \$71.3 million.

Management plans to continue to incur substantial costs in order to conduct research and development activities and additional capital will be needed to undertake these activities. The Company intends to raise such capital through the issuance of additional equity, borrowings and strategic alliances with other companies. However, if such arrangements are not available at adequate levels or on acceptable terms, the Company would be required to significantly reduce operating expenses and delay or reduce the scope of or eliminate some of its development programs. Management believes that the Company’s current cash and cash equivalents, including the net proceeds of approximately \$69.7 million from the Follow-on Offering in February 2020, will provide sufficient funds to enable the Company to meet its obligations for at least twelve months from the filing date of this report.

2. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles (“U.S. GAAP”) and include the consolidated accounts of the Company and its wholly-owned subsidiary, RAPT Therapeutics Australia Pty Ltd., which was established in 2018. All intercompany balances and transactions have been eliminated in consolidation.

Reverse Stock Split

On July 19, 2019, the Company filed an amendment to the Company’s amended and restated certificate of incorporation to effect a reverse split of shares of the Company’s common stock on a one-for-six basis (the “Reverse Stock Split”). In connection with the Reverse Stock Split, the conversion ratio for the Company’s outstanding convertible preferred stock was proportionately adjusted such that the common stock issuable upon conversion of such preferred stock was decreased in proportion to the Reverse Stock Split. The par value of the common stock was not adjusted as a result of the Reverse Stock Split. All references to common stock, options to purchase common stock, early exercised options, share data, per share data, convertible preferred stock (to the extent presented on an as-converted to common stock basis) and related information contained in these consolidated financial statements have been retrospectively adjusted to reflect the effect of the Reverse Stock Split for all periods presented.

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. The Company bases its estimates on historical experience and market-specific or other relevant assumptions that it believes are reasonable under the circumstances. The amounts of assets and liabilities reported in the Company’s balance sheets and the amount of expenses and income reported for each of the periods presented are affected by estimates and assumptions, which are used for, but are not limited to, determining the fair value of assets and liabilities, common stock valuation and stock-based compensation. Actual results could differ from such estimates or assumptions.

Concentration of Credit Risk and Other Risks and Uncertainties

The Company is subject to a number of risks similar to other biopharmaceutical companies in the early stage, including, but not limited to, the need to obtain adequate additional funding, possible failure of preclinical testing or clinical trials, the need to obtain marketing approval for its product candidates, competitors developing new technological innovations, the need to successfully commercialize and gain market acceptance of the Company’s products and protection of proprietary technology. If the Company does not successfully obtain regulatory approval, commercialize or partner any of its product candidates, it will be unable to generate revenue from product sales or achieve profitability.

Financial instruments that potentially subject the Company to a concentration of credit risk consist of cash and cash equivalents. Substantially all the Company’s cash and cash equivalents are held by financial institutions. Such deposits may, at times, exceed federally insured limits. The Company invests its cash equivalents in highly rated money market funds.

Segments

The Company operates as a single operating segment. The Company’s chief operating decision maker, its President and Chief Executive Officer, manages the Company’s operations on a consolidated basis for the purposes of allocating resources, making operating decisions and evaluating financial performance.

Fair Value of Financial Instruments

The carrying amount of the Company's financial instruments, including certain prepaid and accrued expenses, approximates fair value due to their short-term maturities.

Cash Equivalents

The Company considers all highly liquid investments with original maturities of 90 days or less from the date of purchase to be cash equivalents.

Property and Equipment

Property and equipment consist of computer equipment, laboratory equipment, leasehold improvements and furniture and fixtures, and is recorded at cost, less accumulated depreciation and amortization. Depreciation and amortization are calculated using the straight-line method over the estimated useful lives of the respective assets, generally three to five years. Leasehold improvements are amortized over the shorter of the lease term or the estimated useful life of the improvements.

Depreciation and amortization begin at the time the asset is placed in service. Maintenance and repairs are charged to expense as incurred. Upon sale or retirement of assets, the cost and related accumulated depreciation and amortization are removed from the balance sheet and the resulting gain or loss is reflected in the results of operations.

Impairment of Long-Lived Assets

The Company evaluates its long-lived assets for impairment annually or more frequently whenever events or changes in circumstances indicate that the carrying value of these assets may not be recoverable. Recoverability of these assets is measured by comparing the carrying amount of each asset to the future undiscounted cash flows the asset is expected to generate over its remaining life. If the asset is considered to be impaired, the amount of any impairment is measured as the difference between the carrying value and the fair value of the impaired asset. For the years ended December 31, 2019 and 2018, the Company did not record any impairment losses on long-lived assets.

Leases

The Company leases office space and laboratory facilities under non-cancelable operating lease agreements and recognizes related rent expense on a straight-line basis over the term of the lease. Funding of leasehold improvements by the Company's landlord is accounted for as a tenant improvement allowance and recorded as current and non-current deferred rent liabilities and amortized on a straight-line basis as a reduction of rent expense over the term of the lease.

Convertible Preferred Stock

The Company recorded all shares of convertible preferred stock at their respective fair values on the dates of issuance, less issuance costs. In the event of a change of control of the Company, proceeds received from the sale of such shares would have been distributed in accordance with the liquidation preferences set forth in the Company's Amended and Restated Certificate of Incorporation unless the holders of the convertible preferred stock had converted their shares of convertible preferred stock into shares of common stock. Convertible preferred stock was previously classified outside of stockholders' equity (deficit) on the balance sheet as events triggering redemption were not solely within the Company's control. Immediately prior to the consummation of the Company's IPO in November 2019, the convertible preferred stock converted into 17,467,184 shares of common stock.

Revenue

License and collaborative agreements consist of license, milestone and royalty payments generated through agreements with strategic partners for the development and commercialization of certain product candidates. The terms of an agreement may include a non-refundable upfront fee, payments based upon achievement of milestones and royalties on net product sales. If a portion of the nonrefundable upfront fee or other payments received is allocated to continuing performance obligations under the terms of an agreement, such portion is recorded as deferred revenue and recognized as revenue when (or as) the underlying performance obligation is satisfied.

The Company recognizes revenue when it transfers promised goods or services to customers or counterparties in an amount that reflects the consideration to which the Company expects to be entitled in exchange for those goods or services. In determining the appropriate amount of revenue to be recognized, the Company performs the following steps: (i) identification of the promised goods or services in the agreement; (ii) determination of whether the promised goods or services are performance obligations, including whether they are distinct in the context of the agreement; (iii) measurement of the transaction price, including any constraint on variable consideration; (iv) allocation of the transaction price to performance obligations based on estimated selling prices; and (v) recognition of revenue when (or as) the Company satisfies each performance obligation.

Licenses: If a license to the Company's intellectual property is determined to be distinct from the other performance obligations identified in an agreement, the Company will recognize revenue from the nonrefundable, upfront fee allocated to the license when the license is transferred to the licensee and the licensee is able to use and benefit from the license. If a license is bundled with other performance obligations, the Company utilizes judgment to assess the nature of the combined performance obligations to determine whether the combined performance obligations are satisfied over time or at a point in time and, if over time, the appropriate method of measuring progress for purposes of recognizing revenue. The Company evaluates the measure of progress each reporting period and, if necessary, adjusts the measure of performance and related revenue recognition.

Milestone payments: If an agreement includes event-based or milestone payments, the Company evaluates whether the events or milestones are considered likely to be achieved and estimates the amount to be included in the transaction price using the most likely amount method. If it is unlikely that a significant revenue reversal would occur, the value of the associated event-based or milestone payments is included in the transaction price. Event-based or milestone payments that are not within the control of the Company are not included in the transaction price until they become likely to be achieved.

Royalties: If an agreement includes sales-based royalties and the license is deemed to be the predominant item to which the royalties relate, the Company 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).

As of December 31, 2019, the Company recorded deferred revenue of \$4.0 million on the consolidated balance sheet related to the license and collaborative agreement with Hanmi Pharmaceutical LTD ("Hanmi").

Research and Development Costs

Research and development costs are expensed as incurred. Research and development costs consist primarily of salaries and benefits of research and development personnel, costs related to research activities, preclinical studies, clinical trials, drug manufacturing and allocated overhead and facility-related expenses. The Company accounts for non-refundable advance payments for goods or services that will be used in future research and development activities as expenses when the goods have been received or when the service has been performed rather than when the payment is made.

Clinical trial costs are a component of research and development expenses. The Company expenses costs for its clinical trial activities performed by third parties, including clinical research organizations ("CROs") and other service providers, as they are incurred, based upon estimates of the work completed over the life of the individual study in accordance with associated agreements. The Company uses information it receives from internal personnel and outside service providers to estimate the clinical trial costs incurred.

Stock-Based Compensation

The Company measures employee and director stock-based compensation expense for all stock-based awards based on their grant date fair value using the Black-Scholes option-pricing model. For stock-based awards with service conditions only, stock-based compensation expense is recognized over the requisite service period using the straight-line method. For awards with performance conditions, the Company evaluates the probability of achieving performance conditions at each reporting date. The Company begins to recognize stock-based compensation expense using an accelerated attribution method when it is deemed probable that the performance condition will be met. Forfeitures are recognized as they occur.

Stock-based compensation expense for nonemployee stock-based awards is measured at fair value using the Black-Scholes option-pricing model. The Company recognizes stock-based compensation expense for the estimated fair value of the vested portion of nonemployee awards in its consolidated statements of operations and comprehensive loss. Stock-based compensation expense related to stock-based awards to nonemployees is subject to re-measurement over the service period, which approximates the vesting period.

Stock-based compensation expense related to restricted stock awards is determined using the estimated fair value of the Company's common stock on the date of grant for the period prior to the IPO. The fair value of restricted stock awards granted after the IPO is determined based on the stock price on the date of grant. The estimated fair value is amortized as compensation expense over the service period of the award.

Foreign Currency Transactions

The functional currency of RAPT Therapeutics Australia Pty Ltd., the Company's wholly-owned subsidiary, is the Australian dollar. Accordingly, all monetary assets and liabilities of the subsidiary are translated into U.S. dollars at the current period-end exchange rates and non-monetary assets are translated using historical exchange rates. Income and expense elements are remeasured to U.S. dollars using the average exchange rates in effect during the period. Remeasurement gains and losses are recorded as other income (expense).

The Company is subject to foreign currency risk with respect to its clinical contracts denominated in currencies other than the U.S. dollar. Payments on contracts denominated in foreign currencies are made at the spot rate on the day of payment. Changes in the exchange rate between billing dates and payment dates are recorded to other (income), net on the consolidated statements of operations.

Income Taxes

Income taxes are accounted for under the asset and liability method. 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 of a change in tax rates is recognized in income in the period such tax rate changes are enacted.

The Company recognizes the effect of income tax positions only if those positions are more likely than not to be sustained. Recognized income tax positions are measured at the largest amount that is greater than 50% likely to be realized. Changes in recognition or measurement are reflected in the period in which the change in judgment occurs. Valuation allowances are established when necessary to reduce deferred tax assets to amounts more likely than not to be realized. Interest and penalties related to unrecognized tax benefits are recognized as a component of income tax expense.

Comprehensive Loss

Comprehensive loss includes net loss and certain changes in stockholders' deficit that are excluded from net loss, primarily unrealized losses from foreign currency translation adjustments.

Net Loss Per Share

Basic net loss per share is computed by dividing the net loss by the weighted average number of common shares outstanding during the period, without consideration of potential dilutive securities. Diluted net loss per common share is computed by dividing the net loss by the sum of the weighted average number of common shares outstanding during the period plus the number of potential dilutive securities outstanding during the period calculated in accordance with the treasury stock method. Diluted net loss per share is the same as basic net loss per share since the effect of potentially dilutive securities is anti-dilutive.

Recent Accounting Pronouncements

From time to time, new accounting pronouncements are issued by the Financial Accounting Standards Board (“FASB”) or other standard setting bodies and adopted by the Company as of the specified effective date. Under the Jumpstart Our Business Startups Act of 2012, as amended (the “JOBS Act”), the Company meets the definition of an emerging growth company and has elected the extended transition period for complying with new or revised accounting standards pursuant to Section 107(b) of the JOBS Act.

Adopted Accounting Pronouncements

In August 2016, the FASB issued ASU No. 2016-15, *Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments*, which addresses specific cash flow issues with the objective of reducing the diversity in practice for the treatment of these issues. The areas identified include: debt prepayment or debt extinguishment costs; settlement of zero-coupon debt instruments; contingent consideration payments made after a business combination; proceeds from the settlement of insurance claims; proceeds from the settlement of corporate-owned life insurance policies; distributions received from equity method investees; beneficial interests in securitization transactions; and application of the predominance principle with respect to separately identifiable cash flows. The Company adopted ASU 2016-15 in the fourth quarter of 2019 and there was no impact to the financial position or results of operations related to this adoption.

In February 2018, the FASB issued ASU No. 2018-02, *Income Statement - Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income*. The amendments in this standard allow a reclassification from accumulated other comprehensive income to retained earnings for stranded tax effects resulting from the Tax Cuts and Jobs Act. The Company adopted ASU 2018-02 in the fourth quarter of 2019 and there was no impact to the financial position or results of operations related to this adoption.

In November 2018, the FASB issued ASU No. 2018-18, *Collaborative Arrangements (ASC 808): Clarifying the Interaction between ASC 808 and ASC 606*, which clarifies that certain transactions between collaborative arrangement participants should be accounted for as revenue under ASC 606 when the collaborative arrangement participant is a customer in the context of a unit of account. In those situations, all the guidance in ASC 606 should be applied, including recognition, measurement, presentation and disclosure requirements. ASU 2018-18 adds unit-of-account guidance in ASC 808 to align with the guidance in ASC 606 (that is, a distinct good or service) when an entity is assessing whether the collaborative arrangement or a part of the arrangement is within the scope of ASC 606, and requires that in a transaction with a collaborative arrangement participant that is not directly related to sales to third parties, presenting the transaction together with revenue recognized under ASC 606 is precluded if the collaborative arrangement participant is not a customer. The Company adopted ASU 2018-18 in the fourth quarter of 2019 and there was no impact to the financial position or results of operations related to this adoption.

In December 2019, the FASB issued ASU No. 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes*, which simplifies the accounting for income taxes by removing certain exceptions to the general principles in Topic 740. The amendments also improve consistent application of and simplify other areas of Topic 740 by clarifying and amending existing guidance. The Company adopted ASU 2019-12 in the fourth quarter of 2019 and there was no impact to the financial position or results of operations related to this adoption.

Recently Issued Accounting Pronouncement Not Yet Adopted

In February 2016, the FASB issued ASU No. 2016-02, *Leases*. ASU 2016-02 requires lessees to record most leases on their balance sheet while recognizing expense in a manner similar to existing accounting. ASU 2016-02 states that a lessee would recognize a lease liability for the obligation to make lease payments and a right-to-use asset for the right to use the underlying asset for the lease term. The new accounting guidance is effective for the Company for fiscal periods beginning after December 15, 2020 and early adoption is permitted. The Company is currently assessing the timing of adoption and the impact that the adoption will have on its consolidated financial statements and related disclosures.

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*. ASU 2016-13 amended guidance on reporting credit losses for assets held at amortized cost basis and available-for-sale debt securities. For available-for-sale debt securities, credit losses will be presented as an allowance rather than as a write-down. This standard is effective for the Company's fiscal year beginning after December 15, 2020. Early adoption is permitted for all entities. The Company is currently assessing the timing of adoption and the impact that the adoption of ASU 2016-13 will have on its consolidated financial statements and related disclosures.

In June 2018, the FASB issued ASU No. 2018-07, *Compensation—Stock Compensation (Topic 718): Improvements to Non-Employee Share-Based Payment Accounting* as part of the FASB simplification initiative. ASU 2018-07 expands the scope of Topic 718, allowing the Company to apply the requirements of Topic 718 to certain non-employee awards to acquire goods and services from non-employees. This ASU will be effective for the Company for fiscal years beginning after December 15, 2019, and early adoption is permitted. The Company is currently assessing the impact that the adoption of ASU 2018-07 will have on its consolidated financial statements and related disclosures.

In August 2018, the FASB issued ASU No. 2018-13, *Fair Value Measurements (Topic 820): Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement* as part of the FASB's disclosure framework project. ASU 2018-13 modifies the disclosure requirements on fair value measurements in Topic 820, Fair Value Measurement by removing the requirement to disclose amounts of and reasons for transfers between Level 1 and Level 2 of the fair value hierarchy, the policy for timing of transfers between levels and the valuation process for Level 3 fair value measurements. This ASU also modifies existing disclosure requirements by clarifying that the measurement uncertainty disclosure is to communicate information about the uncertainty in measurement as of the reporting date, and it adds required disclosures for the changes in unrealized gains and losses for the period included in other comprehensive income for recurring Level 3 fair value measurements held at the end of the reporting period, and the range and weighted average of significant unobservable inputs used to develop Level 3 fair value measurements. This ASU will be effective for the Company for fiscal years and interim periods within those fiscal years, beginning after December 15, 2019, and early adoption is permitted. The Company is currently assessing the impact of this ASU on its consolidated financial statements.

3. Fair Value Measurements

Fair value accounting is applied for all financial assets and liabilities that are recognized or disclosed at fair value in the financial statements on a recurring basis (at least annually). Financial instruments include cash and cash equivalents, accounts payable and accrued liabilities that approximate fair value due to their relatively short maturities.

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Assets and liabilities recorded at fair value on a recurring basis in the balance sheet are categorized based upon the level of judgment associated with the inputs used to measure their fair values. Fair value is defined as the exchange price that would be received for an asset or an exit price that would be paid to transfer a liability in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. The authoritative guidance on fair value measurements establishes a three-tier fair value hierarchy for disclosure of fair value measurements as follows:

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

Level 2—Inputs are observable, unadjusted quoted prices in active markets for similar assets or liabilities, unadjusted quoted prices for identical or similar assets or liabilities in markets that are not active or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the related assets or liabilities; and

Level 3—Unobservable inputs that are significant to the measurement of the fair value of the assets or liabilities that are supported by little or no market data.

Financial assets subject to fair value measurements on a recurring basis comprise money market funds that are measured using Level 1 inputs. The money market funds subject to fair value measurements at December 31, 2019 and 2018 were \$77.4 million and \$63.7 million, respectively, and are included in cash and cash equivalents.

4. Property and Equipment

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

	December 31,	
	2019	2018
Laboratory equipment	\$ 5,752	\$ 5,466
Leasehold improvements	3,294	2,989
Computer equipment	326	308
Furniture and fixtures	394	365
Total property and equipment	9,766	9,128
Less accumulated depreciation and amortization	(6,059)	(4,969)
Property and equipment, net	<u>\$ 3,707</u>	<u>\$ 4,159</u>

Depreciation and amortization expenses were \$1.3 million and \$1.2 million for the years ended December 31, 2019 and 2018, respectively.

5. Accrued Expenses

Accrued expenses consist of the following (in thousands):

	December 31,	
	2019	2018
Accrued research and clinical development expenses	\$ 1,353	\$ 519
Accrued compensation	1,779	1,433
Accrued professional and consulting services	192	182
Accrued property and equipment	—	202
Accrued lab supplies	29	80
Other	289	72
Total accrued expenses	<u>\$ 3,642</u>	<u>\$ 2,488</u>

6. Commitments

The Company enters into contracts in the normal course of business with CROs for preclinical studies and clinical trials. These agreements provide for notice of termination by either party and are, therefore, cancelable contracts.

In May 2015, the Company entered into an operating lease for 30,376 square feet of laboratory and office facilities in South San Francisco, California, which expires in May 2022 and provides for tenant improvement allowances of \$0.8 million. In April 2018, the Company amended the lease agreement to include an additional 6,378 square feet of laboratory and office space increasing the total leased premises to 36,754 square feet. The lease amendment extended the lease term to November 2026, and the amendment contains scheduled rent increases over the lease term and an option for the Company to extend the lease for an additional five-year term. The lease amendment contains a tenant improvement allowance of \$1.4 million that the Company used in 2018 toward \$2.4 million in total leasehold improvements, which is being amortized over the remaining lease term.

In February 2019, the Company entered into an agreement to sublease its facility lease of 6,378 square feet of laboratory and office space.

As of December 31, 2019, future minimum non-cancelable lease payments, net of sublease rental income, are as follows (in thousands):

Year ending December 31:	
2020	\$ 1,602
2021	1,969
2022	2,037
2023	2,109
Thereafter	6,579
Total minimum lease payments	\$ 14,296

The terms of the lease agreement provide for rental payments on a monthly basis and on a graduated scale. The Company recognizes rent expense on a straight-line basis over the lease period and has accrued for rent expense incurred but not paid. Rent expense includes certain monthly charges that do not represent non-cancelable obligations, as defined. These costs are determined based on actual charges incurred. In addition, tenant improvement allowances recorded are amortized as a reduction to rent expense on a straight-line basis over the lease term. Rent expense was \$2.0 million and \$1.8 million in the years ended December 31, 2019 and 2018, respectively.

From time to time, the Company may be subject to various legal proceedings and claims arising in the ordinary course of business. The Company assesses contingencies to determine the degree of probability and range of possible loss for potential accrual in its financial statements. An estimated loss contingency is accrued in the financial statements if it is probable that a liability has been incurred and the amount of the loss can be reasonably estimated. The Company is not subject to any current pending legal matters or claims and no contingency loss had been accrued.

7. Collaboration Agreements

Collaboration and License Agreement with Hanmi

In December 2019, the Company entered into a Collaboration and License Agreement (“Hanmi Agreement”) with Hanmi, pursuant to which the Company granted Hanmi an exclusive license to develop, manufacture and commercialize FLX475 and related compounds and products with respect to human cancers in the Republic of Korea, the Republic of China (Taiwan) and the People’s Republic of China, including the special administrative regions of Macau and Hong Kong (the “Hanmi Territory”) and certain sublicense rights.

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In consideration of such rights, under the Hanmi Agreement, the Company is entitled to \$10.0 million in an upfront payment of \$4.0 million and an expected near-term milestone payment of \$6.0 million. Additionally, the Company will be eligible to receive contingent payments of up to \$108.0 million upon the achievement of specified milestones, consisting of up to \$48.0 million upon the achievement of development milestones and up to \$60.0 million upon the achievement of sales milestones, as well as double-digit royalties on future net sales of FLX475 in specified territories.

The Company identified the following performance obligations as defined by ASC 606 at the inception of the Hanmi Agreement, including (1) the exclusive development, manufacturing and commercialization license in the Hanmi Territory; (2) the transfer of know-how, technology, research data and information, and any improvements in technology; (3) the obligation to participate in the joint steering committee and appoint an alliance manager; (4) the responsibility to complete Phase 2 clinical trials; and (5) the supply of FLX475 for use in Hanmi's Phase 2 clinical trials and Hanmi will reimburse the Company for manufacturing costs.

The Company determined that the identified performance obligations, except for the supply of FLX475, are not distinct and should be combined into one distinct performance obligation. The Company considered factors such as the novelty of the drug candidate and that the promised goods and services are highly interdependent and are expected to significantly modify one another.

The Company determined that the transaction price as of December 31, 2019 was \$10.0 million, consisting of the upfront fee of \$4.0 million and an expected near-term milestone payment of \$6.0 million, which were determined to not be constrained. Other future development milestones were probable of significant revenue reversal as their achievement was highly dependent on factors outside the Company's control and were considered to be fully constrained. The Company expects that the revenue from sales milestone and royalty payments will be recognized when the sales occur or the milestone is achieved. The Company will re-evaluate the transaction price at each reporting period.

The Company recognizes revenue for the performance obligation by applying the cost-based input method over the estimated service period. The Company determined that this method most faithfully depicts the transfer of its performance obligations to Hanmi as it reflects the progress made towards providing Hanmi with the necessary know-how to continue developing FLX475 in the Hanmi Territory.

For the year ended December 31, 2019, no revenue was recognized pursuant to the Hanmi Agreement. As of December 31, 2019, deferred revenue related to the Hanmi Agreement was \$4.0 million and is expected to be recognized over the Phase 2 clinical trial period.

Clinical Trial Collaboration and Supply Agreement with Merck

In November 2018, the Company entered into a clinical trial collaboration and supply agreement with Merck (known as MSD outside the United States and Canada), through an affiliate, under which the Company will conduct a clinical trial evaluating FLX475 in combination with Keytruda® (pembrolizumab), Merck's anti-PD-1 therapy, in patients with advanced cancers. The Company is the sponsor of the clinical trial, and Merck will supply Keytruda for use in the clinical trial.

8. Related Party Promissory Notes

In August 2015 and June 2016, the Company entered into limited recourse promissory notes with the Company’s chief executive officer and chief operating officer for the purchase of restricted common stock. The principal amount of the loan with the Company’s chief executive officer was \$0.3 million (the “CEO Note”). The principal amount of the loan with the Company’s chief operating officer was \$0.3 million (the “COO Note”). The loans were secured by the shares of common stock of the Company held by the individuals. The loans accrued interest at a rate of 1.82% and 1.41% per annum, respectively, and were due upon the earlier of voluntary termination of services to the Company, filing by the Company of its first registration statement with the SEC under the Securities Act of 1933 or sale of substantially all of the Company’s assets. As of December 31, 2018, the total outstanding balances under these notes, including accrued interest, were approximately \$0.6 million. In June 2019, the Company forgave \$0.4 million, which was the entire amount of principal and accrued interest due on the CEO Note.

In March 2018, the board of directors reduced the number of performance-based options of its former chief operating officer by 8,333 shares resulting in a \$17,000 reduction to the principal of the COO Note. In March 2019, the chief operating officer resigned from the Company and, under the terms of a separation agreement, there were 63,019 vested shares and 28,645 unvested shares subject to repurchase. In March 2019, the Company reduced the principal on the COO Note by \$0.1 million relating to the unvested shares, which shares were cancelled and returned to the option pool. In July 2019, the Company repurchased 29,686 vested shares from the chief operating officer in exchange for canceling \$0.1 million of principal and interest on the COO Note. The Company received cash proceeds of \$0.1 million as payment for the remaining principal and interest on the COO Notes relating to the remaining 33,333 vested shares.

9. Convertible Preferred Stock

In June 2018, the Company completed a subsequent closing of Series C convertible preferred stock financing at \$2.2925 per share for \$29.9 million in gross proceeds. Additionally, in December 2018, the Company completed a \$22.6 million Series C-2 convertible preferred stock financing at \$2.2925 per share, and between January 2019 and June 2019, the Company closed additional sales of Series C-2 convertible preferred stock at \$2.2925 per share for \$14.4 million in gross proceeds.

As of December 31, 2018, convertible preferred stock consisted of the following (in thousands, except share amounts):

	Shares Authorized	Shares Issued and Outstanding	Net Carrying Value	Aggregate Liquidation Preference
Series A	37,509,105	6,251,502	\$ 28,861	\$ 37,509
Series B	25,000,000	4,166,663	49,926	50,000
Series C	26,109,363	4,351,554	59,770	59,856
Series C-2	15,400,000	1,645,562	22,554	22,635
Total convertible preferred stock	<u>104,018,468</u>	<u>16,415,281</u>	<u>\$ 161,111</u>	<u>\$ 170,000</u>

Immediately prior to the closing of the Company’s IPO in November 2019, all outstanding shares of the Company’s convertible preferred stock converted into 17,467,184 shares of the Company’s common stock. As such, no convertible preferred stock shares were outstanding as of December 31, 2019.

RAPT THERAPEUTICS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The rights, privileges and preferences of the convertible preferred stock were as follows:

Conversion

Shares of Series A, Series B, Series C and Series C-2 convertible preferred stock were initially convertible, at the option of the holder at any time, into shares of common stock as determined by dividing the applicable original issue price for such series by the applicable conversion price for such series, subject to adjustment in the event of any stock splits, stock dividends, combinations, subdivisions or similar recapitalization affecting such shares, and subject also to adjustment for certain dilutive issuances. Conversion of all outstanding convertible stock was automatic upon (i) the closing of a firm commitment underwritten public offering resulting in at least \$30,000,000 in gross proceeds to the Company, prior to underwriting commissions and expenses, provided that the public offering price was at least \$13.7550 per share, as adjusted for any stock dividends, combinations, splits, recapitalizations and the like or (ii) the election of the holders of 55% or more of the then outstanding shares of preferred stock.

Dividends

The holders of shares of Series A, Series B, Series C and Series C-2 convertible preferred stock were entitled to receive dividends, when, as and if declared by the board of directors, at the rate per annum of \$0.08, \$0.16, \$0.18, \$0.18 per share, respectively, subject to adjustment in the event of any stock splits, stock dividends, combinations, subdivisions or similar recapitalization affecting such shares.

Accrued dividends were payable when, as and if declared by the board of directors, and were not cumulative. After payment of the above dividend, any additional dividends would be distributed among all holders of common and preferred stock in proportion to the number of shares of common stock into which the representative shares were convertible.

Voting

Each holder of shares of Series A, Series B, Series C and Series C-2 convertible preferred stock was entitled to one vote for each share of common stock into which such shares of preferred stock were convertible, had voting rights and powers equal to the voting rights and powers of the common stock and would vote together with the common stock on all matters as to which holders of common stock had the right to vote, in each case, except as provided by law or by other provisions of the Company's Restated Certificate of Incorporation.

Election of board of directors

As long as at least 6,000,000 shares of preferred stock were outstanding, as adjusted for any stock dividends, combinations, splits, recapitalizations and the like, the holders of shares of Series A, Series B, Series C and Series C-2 convertible preferred stock, voting as a separate class, were entitled to elect two members of the board of directors. The holders of shares of common stock, voting as a separate class, were entitled to elect two members of the board of directors. The holders of the shares of preferred stock and common stock, voting together as a single class, and on an as-converted basis, were entitled to elect all remaining members of the board of directors.

Protective provisions

As long as at least 6,000,000 shares of preferred stock were outstanding, as adjusted for any stock dividends, combinations, splits, recapitalizations and the like, the Company would first obtain the approval by vote or written consent of the holders of at least 65% of the then outstanding shares of preferred stock, voting together as a single class and not as a separate series, and on an as-converted basis with respect to: (i) consummation of liquidation event or effect any other merger or consolidation, (ii) amend, alter or repeal any provision of the Company's certificate of incorporation or bylaws, (iii) increase or decrease the total number of authorized shares of common stock or preferred stock or designated shares of any series of preferred stock, (iv) authorize, issue or obligate the Company to issue any equity security having preference over any series of preferred stock, (v) redeem, purchase or otherwise acquire any share or shares of preferred stock or common stock, (vi) change the authorized number of directors of the Company, (vii) increase the number of shares of common stock reserved under any employee equity incentive plan, (viii) permit any subsidiary to sell or issue equity securities, (ix) pay or declare any dividend on any shares of capital stock and (x) authorize, issue or obligate the Company to issue any debt security if the aggregate indebtedness exceeds \$5,000,000.

Liquidation preferences

In the event of any voluntary or involuntary liquidation, dissolution or winding-up of the Company or other "Liquidation Event" (as defined in the Company's Restated Certificate of Incorporation), the holders of shares of Series A, Series B, Series C and Series C-2 convertible preferred stock would be entitled to be paid an amount equal to the original issue price per share, subject to adjustment in the event of any stock splits, stock dividends, combinations, subdivisions or similar recapitalization affecting such shares together with any dividends declared but unpaid, prior to the payment of any distributions to the holders of common stock. If, upon the occurrence of such event, the assets and funds distributed among the holders of the Series A, Series B, Series C and Series C-2 convertible preferred stock were insufficient to permit the payment to such holders of the full aforesaid preferential amounts, then the entire assets and funds of the Company legally available for distribution were to be distributed ratably among the holders of the Series A, Series B, Series C and Series C-2 convertible preferred stock.

All holders of Series A, Series B, Series C and Series C-2 convertible preferred stock would be deemed to have converted if, as a result of an actual conversion, such holder would have received, in the aggregate, a greater amount than the amount that would be distributed to such holder if such holder did not convert such shares of Series A, Series B, Series C and Series C-2 convertible preferred stock into common stock.

Classification

The Company classified the convertible preferred stock outside of permanent equity on the balance sheet as these shares can be redeemed upon the occurrence of certain change in control events that are outside of the Company's control, including liquidation, sale or transfer of the Company. The Company did not adjust the carrying values of the convertible preferred stock to the liquidation preferences of such shares because it was uncertain whether or when an event would occur that would obligate the Company to pay the liquidation preferences to holders of shares of redeemable convertible preferred stock, and at the balance sheet dates these circumstances were not probable.

10. Common Stock

In connection with the completion of its IPO, the Company's certificate of incorporation was amended and restated to provide for 500,000,000 authorized shares of common stock with a par value of \$0.0001 per share and 50,000,000 authorized shares of preferred stock with a par value of \$0.0001 per share.

The holders of the Company's common stock have one vote for each share of common stock held by them. Holders of shares of the Company's common stock are entitled to dividends when, as and if declared by the board of directors. No dividends had been declared as of December 31, 2019 or December 31, 2018. As of December 31, 2019 and 2018, the Company had 21,833,037 and 878,413 shares of common stock outstanding, respectively.

RAPT THERAPEUTICS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

As of December 31, 2019, the Company had reserved the following shares of common stock, on an as-converted basis, for future issuance as follows:

	December 31, 2019
Options issued and outstanding	406,939
Options available for future grants	1,874,759
ESPP	240,336
Total	2,522,034

11. Stock Option Plan

In 2015, the Company adopted the FLX Bio, Inc. 2015 Stock Plan (the “2015 Plan”).

In connection with the consummation of the IPO in November 2019, the Company’s board of directors adopted the Company’s 2019 Equity Incentive Plan (the “2019 Plan” and collectively with the 2015 Plan, the “Option Plans”). Upon the effectiveness of the 2019 Plan, the Company’s 2015 Plan terminated and no further grants may be made thereunder. However, the 2015 Plan will continue to govern the terms and conditions of the outstanding awards previously granted thereunder. As of December 31, 2019, the Company had 1,874,759 shares of common stock available for grant. In addition, the number of shares reserved for issuance under the Company’s 2019 Plan will automatically increase on January 1 of each year beginning January 1, 2020 by a number equal to (i) 4% of the shares of common stock outstanding on the last business day of the prior fiscal year or (ii) the number of shares determined by the Company’s board of directors.

The Company’s Option Plans provided for the granting of incentive and non-statutory stock options and restricted shares of common stock options to eligible employees, officers, directors, advisors and consultants. Terms of the stock option agreements, including vesting requirements, are determined by the board of directors, subject to the provisions of the Options Plans. Options granted generally vest over four years and expire no later than ten years from the date of grant. As a private company, the estimated fair value of the Company’s underlying common stock was determined by the board of directors. Following the Company’s IPO, the Company’s board of directors intend to determine the fair value of the Company’s common stock based on the closing price of its common stock on the date of grant. The exercise price of the incentive stock options must be equal to or greater than the estimated fair value of the underlying common stock on the date of grant.

Activity under the Company’s stock option plans is set forth below:

	Shares Available	Number of Shares Outstanding	Weighted Average Exercise Price Per Share	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value
Balances at December 31, 2018	693,879	768,239	\$ 4.62		
Stock options authorized	1,786,166	—			
Stock options granted	(823,858)	823,858	12.96		
Stock options exercised	—	(145,160)	2.63		
Unvested common shares repurchased	85,103	—	2.03		
Stock options forfeited	133,469	(133,469)	7.39		
Balances at December 31, 2019	1,874,759	1,313,468	\$ 9.77	8.93	\$ 23,438
Vested and expected to vest at December 31, 2019		1,313,468	\$ 9.77	8.93	\$ 23,438
Exercisable at December 31, 2019		317,694	\$ 5.26	7.93	\$ 7,102

The aggregate intrinsic values of options outstanding, exercisable, vested and expected to vest were calculated as the difference between the exercise price of the options and the estimated fair value of the Company’s common stock, as determined by the board of directors, as of December 31, 2019.

RAPT THERAPEUTICS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The options granted in the years ended December 31, 2019 and 2018 had a weighted average per share grant-date fair value of \$7.12 and \$4.32, respectively, and a total grant date fair value of \$7.2 million and \$2.1 million.

The aggregate intrinsic value of stock options exercised in the years ended December 31, 2019 and 2018 was \$3.6 million and \$0.1 million, respectively.

The aggregate fair value of options that vested in the years ended December 31, 2019 and 2018 was \$1.6 million and \$0.9 million, respectively.

The Company had 25,000 shares of performance-based stock options outstanding as of December 31, 2018. The grant date fair value of the award was \$0.2 million. As of December 31, 2018, the Company has not recognized any of the related stock-based compensation expense, as vesting of the awards was not determined to be probable. These performance-based stock options were cancelled in March 2019 upon the chief operating officer's resignation from the Company.

Employee stock option valuation

The assumptions used to value employee and director stock option awards granted under the Option Plans during the years ended December 31, 2019 and 2018, using the Black-Scholes option pricing model, were as follows:

	Year Ended December 31,	
	2019	2018
Fair value of common stock	\$6.30 - \$27.53	\$1.03 - \$1.05
Expected term (in years)	5.01 - 6.08	5.67 - 6.08
Volatility	83.00% - 84.99%	80.69% - 81.48%
Risk-free interest rate	1.58% - 2.23%	2.62% - 2.88%
Dividend yield	—	—

Prior to the Company's IPO, the grant date fair value of the shares of common stock underlying stock options was determined by the Company's board of directors with the assistance of management and an independent third-party valuation specialist. The grant date fair value of common stock was determined using valuation methodologies by considering a number of objective and subjective factors including important developments in the Company's operations, valuations performed by independent third parties, sales of convertible preferred stock, actual operating results and financial performance, the conditions in the biotechnology industry and the economy in general, the stock price performance and volatility of comparable public companies and the lack of liquidity of the Company's common stock, among other factors.

In determining the fair value of the options granted, the Company uses the Black-Scholes option-pricing model and assumptions discussed below. Each of these inputs is subjective and generally requires significant judgment to determine.

Expected term

The expected term represents the period that the Company's options granted are expected to be outstanding and is determined using the simplified method (based on the mid-point between the vesting date and the end of the contractual term). The Company has very limited historical information to develop reasonable expectations about future exercise patterns and post-vesting employment termination behavior for its stock option grants.

RAPT THERAPEUTICS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Expected volatility

Since the Company was privately held and did not have any trading history for its common stock, the expected volatility was estimated based on the average volatility for comparable publicly traded biopharmaceutical companies over a period, where available, equal to the expected term of the stock option grants. The comparable companies were chosen based on their similar size, life cycle stage or area of specialty.

Risk-free interest rate

The risk-free interest rate is based on the U.S. Treasury zero coupon issues in effect at the time of grant for periods corresponding with the expected term of the options.

Expected dividend

The Company has never paid dividends on its common stock and has no plans to pay dividends on its common stock. Therefore, the Company used an expected dividend yield of zero.

Stock options granted to nonemployees

Stock-based compensation related to stock options granted to non-employees is recognized as the services are rendered. The assumptions used to value non-employee stock option awards granted under the 2015 Plan during the years ended December 31, 2019 and 2018, using the Black-Scholes option pricing model, were as follows:

	Year Ended December 31,	
	2019	2018
Expected term (in years)	5.34 - 9.74	6.34 - 10.00
Volatility	81.43% - 84.85%	78.29% - 85.47%
Risk-free interest rate	1.40% - 2.67%	1.32% - 3.19%
Dividend yield	—	—

During the years ended December 31, 2019 and 2018, the Company granted 39,165 and 4,166 options to nonemployee consultants and recognized related expense of \$0.5 million and \$0.1 million, respectively.

Early exercise of stock options

The terms of the 2015 Plan permit option holders to exercise stock options before they are vested, subject to certain limitations. Such unvested shares are subject to repurchase by the Company at the original exercise price in the event the option holder's service to the Company is terminated either voluntarily or involuntarily. As a result of early exercises under the 2015 Plan, approximately 0.1 million and 0.2 million shares were subject to repurchase as of December 31, 2019 and 2018, respectively. The Company treats cash received from the exercise of unvested options as a refundable deposit and classifies such amounts as a liability in its balance sheet. As of December 31, 2019 and 2018, the Company included cash received for the early exercise of unvested options of \$0.1 million and \$0.2 million, respectively, in other current liabilities. Amounts included in liabilities are transferred into common stock and additional paid-in capital as the shares vest, which is generally over a period of 48 months and may include a one-year cliff.

RAPT THERAPEUTICS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Stock-based compensation expense

Total stock-based compensation recognized for both employees and non-employees was as follows (in thousands):

	Year Ended December 31,	
	2019	2018
Research and development	\$ 1,076	\$ 542
General and administrative	975	628
Total stock-based compensation expense	<u>\$ 2,051</u>	<u>\$ 1,170</u>

As of December 31, 2019, unrecognized stock-based compensation cost related to outstanding unvested stock options that are expected to vest was \$7.9 million. This unrecognized stock-based compensation cost is expected to be recognized over 2.5 years.

12. Income Taxes

The following table presents domestic and foreign components of income (loss) before income taxes for the periods presented (in thousands):

	December 31,	
	2019	2018
United States	\$ (41,301)	\$ (36,034)
Foreign	(1,036)	(113)
	<u>\$ (42,337)</u>	<u>\$ (36,147)</u>

The components of the provision for income taxes are as follows (in thousands):

	December 31,	
	2019	2018
Current		
Foreign	\$ 660	\$ —
Total provision for income taxes	<u>\$ 660</u>	<u>\$ —</u>

A reconciliation of the statutory U.S. federal rate and effective rate is as follows:

	December 31,	
	2019	2018
Federal tax	21.00%	21.00%
Stock-based compensation	(0.63)	(0.60)
Research and development tax credit	2.97	3.68
Withholding taxes, net of federal benefit	(1.23)	—
Change in valuation allowance	(23.18)	(24.13)
Other	(0.49)	0.05
Income tax expense	<u>(1.56%)</u>	<u>—%</u>

The Company has incurred net operating losses for all periods since inception. The Company has not reflected any benefit of such net operating loss carryforwards in the accompanying financial statements. The Company has established a full valuation allowance against its deferred tax assets due to the uncertainty surrounding the realization of such assets.

RAPT THERAPEUTICS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The components of the Company's deferred tax assets and liabilities are as follows (in thousands):

	December 31,	
	2019	2018
Deferred tax assets:		
Net operating loss carryforwards	\$ 29,014	\$ 20,810
Federal and state research and development tax credits	4,636	3,378
Depreciation and amortization	—	105
Accrued liabilities and reserves	837	448
Stock-based compensation	215	50
Gross deferred tax assets	34,702	24,791
Valuation allowance	(34,605)	(24,791)
Deferred tax liabilities:		
Depreciation and amortization	(97)	—
Gross deferred tax liabilities	(97)	—
Net deferred taxes	\$ —	\$ —

Realization of deferred tax assets is dependent upon future taxable income, if any. The Company has established a valuation allowance to offset deferred tax assets as of December 31, 2019 and 2018, due to the uncertainty of realizing future tax benefits from its net operating loss carryforwards and other deferred tax assets. The valuation allowance increased by approximately \$9.8 million and \$8.7 million during the years ended December 31, 2019 and 2018, respectively. The increase in the valuation allowance is mainly related to the increase in net operating loss carryforwards incurred during the respective taxable years.

As of December 31, 2019, the Company had federal net operating loss carryforwards of approximately \$134.2 million. The federal net operating loss carryforwards generated during and after fiscal 2018 totaling \$73.2 million are carried forward indefinitely, while all others along with the federal tax credit carryforwards, expire in years beginning in 2035. As of December 31, 2019, the Company had approximately \$12.1 million of state net operating loss carryforwards, which begin to expire in 2035 and are available to offset future taxable income. As of December 31, 2019, the Company had research and development tax credit carryforwards of approximately \$3.7 million and approximately \$3.2 million available to reduce future federal and state income taxes, respectively. Moreover, as of December 31, 2019, the Company recorded federal and state reserves of \$0.9 million and approximately \$0.8, respectively, as uncertain tax positions. If not utilized, the federal credit carryforwards will begin expiring in 2035. The state credits carry forward indefinitely.

Federal and state laws impose substantial restrictions on the utilization of net operating loss and tax credit carryforwards in the event of an ownership change for tax purposes, as defined in Section 382 of the Internal Revenue Code. As a result of such ownership changes, the Company's ability to realize the potential future benefit of tax losses and tax credits that existed at the time of the ownership change may be significantly reduced. The Company's deferred tax asset and related valuation allowance would be reduced as a result. The Company has not yet performed a Section 382 study to determine the amount of reduction, if any. The annual limitation may result in the expiration of net operating losses and credits before utilization. Under the new enacted law, the carryforward period of net operating losses generated from 2018 forward is indefinite; however, the carryforward period for net operating losses generated prior to 2018 remains the same. Therefore, the annual limitation may still result in the expiration of certain net operating losses and tax credit carryforwards before their utilization.

Tax benefits from uncertain tax positions are recognized when it is more likely than not that the position will be sustained upon examination, including resolutions of any related appeals or litigation processes, based on the technical merits. The amount recognized is measured as the largest amount of tax benefit that is greater than 50 percent likely of being realized upon effective settlement.

RAPT THERAPEUTICS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

A reconciliation of the beginning and ending amounts of unrecognized tax benefits for the years ended December 31, 2019 and 2018 resulting primarily from research and development tax credits claimed on the Company's annual tax returns were as follows (in thousands):

	December 31,	
	2019	2018
Balance at beginning of year	\$ 1,281	\$ 789
Additions on tax positions related to prior years	—	19
Additions on tax positions related to current year	466	473
Balance at end of year	<u>\$ 1,747</u>	<u>\$ 1,281</u>

The Company does not expect that its uncertain tax positions will materially change in the next twelve months. The reversal of uncertain tax benefits would not impact the Company's effective tax rate as the Company continues to maintain a full valuation allowance against its deferred tax assets. In accordance with ASC 740, the Company would classify interest and penalties related to uncertain tax positions in income tax expense, if applicable. There was no interest expense or penalties related to unrecognized tax benefits through December 31, 2019.

The Company files income tax returns with varying statutes of limitations in the United States, various states and foreign jurisdictions. The Company is not currently under examination by income tax authorities in federal, state or other jurisdictions. All tax returns remain open for examination by federal and state authorities. The tax years from inception in 2015 forward remain open to examination due to the carryover of unused net operating losses and tax credits.

13. Net Loss Per Share

The following table sets forth the computation of the basic and diluted net loss per share of the years ended December 31, 2019 and 2018 (in thousands, except share and per share data):

	Year Ended December 31	
	2019	2018
Numerator:		
Net loss	\$ 42,997	\$ 36,147
Denominator:		
Weighted average common shares outstanding	4,404,486	866,348
Less: weighted-average unvested restricted common stock subject to repurchase	(21,294)	(137,691)
Less: weighted-average unvested early exercised common shares subject to repurchase	(36,792)	(106,368)
Weighted-average shares used to compute net loss per common share, basic and diluted	<u>4,346,400</u>	<u>622,289</u>
Net loss per share, basic and diluted	<u>\$ 9.89</u>	<u>\$ 58.09</u>

Potentially dilutive securities that were not included in the diluted per share calculations because they would be anti-dilutive were as follows:

	December 31,	
	2019	2018
Convertible preferred stock	—	16,415,281
Common stock options issued and outstanding	1,313,468	693,879
Total	<u>1,313,468</u>	<u>17,109,160</u>

14. Subsequent Events

In February 2020, the Company completed an underwritten Follow-on Offering of 2,500,000 shares of its common stock issued at an offering price of \$30.00 per share. The shares issued in the Follow-on Offering generated approximately \$69.7 million in net proceeds after deducting underwriting discounts and other offering related costs.

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

None.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

We maintain “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, that are designed to provide reasonable assurance that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms and is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company’s management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure.

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2019. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, as of December 31, 2019, our disclosure controls and procedures were effective at the reasonable assurance level.

Management’s Report on Internal Control Over Financial Reporting

This report does not include a report of management’s assessment regarding internal control over financial reporting or an attestation report of our registered public accounting firm due to a transition period established by rules of the SEC for newly public companies.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting during the quarter ended December 31, 2019 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitations on Effectiveness of Controls

Our management, including our Chief Executive Officer and our Chief Financial Officer, believes that our disclosure controls and procedures and internal control over financial reporting are designed to provide reasonable assurance of achieving their objectives and are effective at the reasonable assurance level. However, our management does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, have been detected. These inherent limitations include the realities that judgments in decision making can be faulty, and that breakdowns can occur because of a simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by the collusion of two or more people or by management override of controls. The design of any system of controls is also based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions; over time, controls may become inadequate because of changes in conditions, or the degree of compliance with policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

Item 9B. Other Information.

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by this Item will be set forth in the Company's proxy statement to be filed with the Securities and Exchange Commission within 120 days after the Company's fiscal year end and is incorporated herein by reference.

We have adopted a Code of Conduct and Ethics that applies to all directors, officers and employees of the Company, which is available on our website at www.rapt.com. If we make any substantive amendments to our Code of Conduct and Ethics or grant any waivers to our directors or executive officers, we will disclose it on our website or in a Current Report on Form 8-K.

Item 11. Executive Compensation.

The information required by this Item will be set forth in the Company's proxy statement to be filed with the Securities and Exchange Commission within 120 days after the Company's fiscal year end and is incorporated herein by reference.

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

The information required by this Item will be set forth in the Company's proxy statement to be filed with the Securities and Exchange Commission within 120 days after the Company's fiscal year end and is incorporated herein by reference.

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

The information required by this Item will be set forth in the Company's proxy statement to be filed with the Securities and Exchange Commission within 120 days after the Company's fiscal year end and is incorporated herein by reference.

Item 14. Principal Accounting Fees and Services.

The information required by this Item will be set forth in the Company's proxy statement to be filed with the Securities and Exchange Commission within 120 days after the Company's fiscal year end and is incorporated herein by reference.

PART IV

Item 15. Exhibits, Financial Statement Schedules.

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

1. *Financial Statements.* See Index to Financial Statements in Part II Item 8 of this Annual Report on Form 10-K.
2. *Financial Statement Schedules.* None. All financial statement schedules are omitted because they are not applicable, not required under the instructions or the requested information is included in the consolidated financial statements or notes thereto.
3. *Exhibits.* The following is a list of exhibits filed with this report or incorporated herein by reference:

EXHIBIT INDEX

Exhibit Number	Description	Incorporated by Reference				
		Schedule Form	File Number	Exhibit	Filing Date	Filed Herewith
3.1	Amended and Restated Certificate of Incorporation	8-K	001-38997	3.1	11/04/19	
3.2	Amended and Restated Bylaws	8-K	001-38997	3.2	11/04/19	
4.1	Form of Common Stock Certificate	S-1	333-232572	4.1	07/22/19	
4.2	Description of Registrant's Securities					X
10.1	Amended and Restated Investors' Rights Agreement by and among RAPT Therapeutics, Inc. and certain of its stockholders, dated December 18, 2018	S-1	333-232572	10.1	07/05/19	
10.2+	2015 Stock Plan	S-1	333-232572	10.2	07/05/19	
10.3+	Forms of Stock Option Agreement, Notice of Stock Option Grant and Notice of Stock Option Exercise under the 2015 Stock Plan	S-1	333-232572	10.3	07/05/19	
10.4+	2019 Equity Incentive Plan	S-1	333-232572	10.4	07/22/19	
10.5+	Forms of Stock Option Agreement, Notice of Stock Option Grant and Notice of Stock Option Exercise under the 2019 Equity Incentive Plan	S-1	333-232572	10.5	07/22/19	
10.6+	Forms of Restricted Stock Unit Agreement and Notice of Grant of Restricted Stock Unit under the Amended and Restated 2019 Equity Incentive Plan	S-1	333-232572	10.6	07/22/19	
10.7+	2019 Employee Stock Purchase Plan	S-1	333-232572	10.7	07/22/19	
10.8+	Form of Indemnification Agreement, by and between RAPT Therapeutics, Inc. and each of its directors and executive officers	S-1	333-232572	10.8	07/22/19	
10.9+	Amended and Restated Employee Offer Letter, by and between Brian Wong and RAPT Therapeutics, Inc., dated July 20, 2019	S-1	333-232572	10.9	07/22/19	
10.10+	Amended and Restated Employee Offer Letter, by and between William Ho and RAPT Therapeutics, Inc., dated July 20, 2019	S-1	333-232572	10.10	07/22/19	
10.11+	Amended and Restated Employee Offer Letter, by and between Dirk Brockstedt and RAPT Therapeutics, Inc., dated July 20, 2019	S-1	333-232572	10.11	07/22/19	

10.12+	Offer Letter, by and between Rodney Young and RAPT Therapeutics, Inc., dated November 11, 2019	8-K	001-38997	10.1	12/04/19	
10.13+	Offer Letter, by and between Karen Lam and RAPT Therapeutics, Inc., dated July 10, 2019					X
10.14+	Amended and Restated Non-Employee Director Compensation Policy					X
10.15	Lease, by and between HCP, Inc. and Flexus Biosciences, Inc., dated October 10, 2014	S-1	333-232572	10.21	07/05/19	
10.16	First Amendment to Lease, by and between HCP, Inc. and RAPT Therapeutics, Inc., dated April 29, 2015	S-1	333-232572	10.22	07/05/19	
10.17	Second Amendment to Lease, by and between HCP, Inc. and RAPT Therapeutics, Inc., dated April 16, 2018	S-1	333-232572	10.23	07/05/19	
10.18	Third Amendment to Lease, by and between HCP, Inc. and RAPT Therapeutics, Inc., dated December 13, 2018	S-1	333-232572	10.24	07/05/19	
10.19#	Clinical Trial Collaboration and Supply Agreement, dated as of November 1, 2018, by and between MSD International GmbH and RAPT Therapeutics, Inc.	S-1	333-232572	10.25	07/05/19	
10.20#	Collaboration and License Agreement, dated as of December 1, 2019, by and between Hanmi Pharmaceutical Co., Ltd and RAPT Therapeutics, Inc.	S-1	333-236256	10.19	02/04/20	
23.1	Consent of Independent Registered Public Accounting Firm					X
24.1	Power of Attorney (included on signature page)					X
31.1	Certification of Principal Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X
31.2	Certification of Principal Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X

32.1†	Certification of Principal Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	X
32.2†	Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	X
101.INS	Inline XBRL Instance Document – the instance document does not appear in the Interactive Fata File because its EBRL tags are embedded within the Inline XBRL document	X
101.SCH	Inline XBRL Taxonomy Extension Schema Document	X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document	X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document	X
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document	X
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document	X
104	Cover Page Interactive Data File – the cover page interactive data file does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document	

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- + Indicates management contract or compensatory plan or arrangement.
 - # Portions of this exhibit (indicated by asterisks) have been omitted as we have determined that (i) the omitted information is not material and (ii) the omitted information would likely cause competitive harm to us if publicly disclosed.
 - † The certifications attached as Exhibit 32.1 and Exhibit 32.2 accompany this Annual Report on Form 10-K are not deemed filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of RAPT Therapeutics, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Annual Report on Form 10-K, irrespective of any general incorporation language contained in such filing.

Item 16. Form 10-K Summary.

None.

SIGNATURES

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

RAPT Therapeutics, Inc.

Date: March 30, 2020

By: /s/ Brian Wong, M.D. Ph.D.
Brian Wong, M.D. Ph.D.
President and Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Brian Wong and Rodney Young, and each of them, as his or her true and lawful attorneys-in-fact and agents, with full power of substitution for him or her, and in his or her name in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with exhibits thereto and other documents in connection therewith, with the U.S. Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done therewith, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, and either of them, his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

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

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Brian Wong, M.D., Ph.D.</u> Brian Wong, M.D., Ph.D.	President, Chief Executive Officer and Director <i>(principal executive officer)</i>	March 30, 2020
<u>/s/ Rodney Young</u> Rodney Young	Chief Financial Officer and Secretary <i>(principal financial officer)</i>	March 30, 2020
<u>/s/ Karen C. Lam</u> Karen C. Lam	Vice President, Finance and Corporate Controller <i>(principal accounting officer)</i>	March 30, 2020
<u>/s/ William Rieflin</u> William Rieflin	Chair of the Board of Directors	March 30, 2020
<u>/s/ Michael F. Giordano, M.D.</u> Michael F. Giordano, M.D.	Director	March 30, 2020
<u>/s/ David V. Goeddel, Ph.D.</u> David V. Goeddel, Ph.D.	Director	March 30, 2020
<u>/s/ Mary Ann Gray, Ph.D.</u> Mary Ann Gray, Ph.D.	Director	March 30, 2020
<u>/s/ Linda Kozick</u> Linda Kozick	Director	March 30, 2020
<u>/s/ Wendye Robbins, M.D.</u> Wendye Robbins, M.D.	Director	March 30, 2020

**DESCRIPTION OF REGISTRANT'S SECURITIES
REGISTERED PURSUANT TO SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934**

General

The following description summarizes the most important terms of our capital stock. Because it is only a summary, it does not contain all the information that may be important to you. For a complete description of the matters set forth in this "Description of Registrant's Securities," you should refer to our amended and restated certificate of incorporation and amended and restated bylaws, which are included as exhibits to our Annual Report on Form 10-K, and to the applicable provisions of Delaware law.

Our authorized capital stock consists of 500,000,000 shares of common stock, \$0.0001 par value per share, and 50,000,000 shares of preferred stock, \$0.0001 par value per share.

Common Stock

Voting Rights. Except as otherwise expressly provided in our amended and restated certificate of incorporation or as required by applicable law, on any matter that is submitted to a vote by our stockholders, holders of our common stock are entitled to one vote per share of common stock, including for the election of directors. We have not provided for cumulative voting rights for our common stock in our amended and restated certificate of incorporation.

Dividends and Distributions. Subject to preferences that may be applicable to any then outstanding preferred stock, holders of our common stock are entitled to receive ratably those dividends, if any, as may be declared by the board of directors out of legally available funds.

Liquidation. In the event of our liquidation, dissolution or winding up, the holders of our common stock will be entitled to share ratably in the assets legally available for distribution to stockholders after the payment of or provision for all of our debts and other liabilities, subject to the prior rights of any preferred stock then outstanding.

Rights and Preferences. Holders of our common stock have no preemptive, conversion or subscription rights and there are no redemption or sinking funds provisions applicable to our common stock.

Fully paid and nonassessable. All of our outstanding shares of common stock are fully paid and nonassessable.

Preferred Stock

Under the terms of our amended and restated certificate of incorporation, our board of directors has the authority, without further action by our stockholders, to issue up to 50,000,000 shares of preferred stock in one or more series, to establish from time to time the number of shares to be included in each such series, to fix the dividend, voting and other rights, preferences and privileges of the shares of each wholly unissued series and any qualifications, limitations or restrictions thereon, and to increase or decrease the number of shares of any such series, but not below the number of shares of such series then outstanding.

Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of the common stock. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deferring or preventing a change in our control and may adversely affect the market price of the common stock and the voting and other rights of the holders of common stock. We have no current plans to issue any shares of preferred stock.

Anti-Takeover Effects of Provisions of Delaware Law and Our Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws

Some provisions of Delaware law, our amended and restated certificate of incorporation and our amended and restated bylaws contain provisions that could make the following transactions more difficult: an acquisition of us by means of a tender offer; an acquisition of us by means of a proxy contest or otherwise; or the removal of our incumbent officers and directors. It is possible that these provisions could make it more difficult to accomplish or could deter transactions that stockholders may otherwise consider to be in their best interest or in our best interests, including transactions which provide for payment of a premium over the market price for our shares.

These provisions, summarized below, are intended to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed to encourage persons seeking to acquire control of us to first negotiate with our board of directors. We believe that the benefits of the increased protection of our potential ability to negotiate with the proponent of an unfriendly or unsolicited proposal to acquire or restructure us outweigh the disadvantages of discouraging these proposals because negotiation of these proposals could result in an improvement of their terms.

Section 203 of the Delaware General Corporation Law

We are subject to Section 203 of the Delaware General Corporation Law, which prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years after the date that such stockholder became an interested stockholder, with the following exceptions:

- before such date, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;
- upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction began, excluding for purposes of determining the voting stock outstanding (but not the outstanding voting stock owned by the interested stockholder) those shares owned (1) by persons who are directors and also officers and (2) employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; and
- on or after such date, the business combination is approved by the board of directors and authorized at an annual or special meeting of the stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock that is not owned by the interested stockholder.

In general, Section 203 of the Delaware General Corporation Law defines “business combination” to include the following:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;
- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock or any class or series of the corporation beneficially owned by the interested stockholder; and
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits by or through the corporation.

In general, Section 203 defines an “interested stockholder” as an entity or person who, together with the person’s affiliates and associates, beneficially owns, or within three years prior to the time of determination of interested stockholder status owned, 15% or more of the outstanding voting stock of the corporation.

The statute could prohibit or delay mergers or other takeover or change in control attempts and, accordingly, may discourage attempts to acquire us even though such a transaction may offer our stockholders the opportunity to sell their stock at a price above the prevailing market price.

Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws

Our amended and restated certificate of incorporation provides for our board of directors to be divided into three classes with staggered three-year terms. Only one class of directors is elected at each annual meeting of our stockholders, with the other classes continuing for the remainder of their respective three-year terms. Because our stockholders do not have cumulative voting rights, the holders of a majority of the outstanding shares of common stock entitled to vote in any election of directors can elect all of the directors standing for election, if they so choose, other than any directors that holders of any preferred stock we may issue may be entitled to elect. Our amended and restated certificate of incorporation also provide that directors may be removed by the stockholders only for cause upon the affirmative vote of sixty-six and two-thirds percent (66 2/3%) of the voting power of all then-outstanding shares of our capital stock entitled to vote generally at an election of the directors.

Our amended and restated certificate of incorporation and amended and restated bylaws provide that no action shall be taken by our stockholders except at an annual or special meeting of stockholders called in accordance with our amended and restated bylaws, and no action of our stockholders shall be taken by written consent or electronic transmission. Our amended and restated bylaws also provides that a special meeting of stockholders may be called only by our chairperson of the board, chief executive officer or president, or by a resolution adopted by a majority of our board of directors.

Our amended and restated bylaws also establishes advance notice procedures with respect to stockholder proposals to be brought before a stockholder meeting and the nomination of candidates for election as directors, other than nominations made by or at the direction of the board of directors or a committee of the board of directors.

The amendment of any of the above provisions, except for the provision making it possible for our board of directors to issue preferred stock, would require approval by holders of at least two thirds of the total voting power of all of our outstanding voting stock.

The provisions of Delaware law, our amended and restated certificate of incorporation and our amended and restated bylaws could have the effect of discouraging others from attempting hostile takeovers and, as a consequence, they may also inhibit temporary fluctuations in the market price of our common stock that often result from actual or rumored hostile takeover attempts. These provisions may also have the effect of preventing changes in the composition of our board and management. It is possible that these provisions could make it more difficult to accomplish transactions that stockholders may otherwise deem to be in their best interests

July 10, 2019

Karen Lam

Dear Karen,

This letter agreement (the “**Agreement**”) sets forth the terms and conditions of your continued employment with RAPT Therapeutics, Inc. (“**RAPT**” or the “**Company**”). This Agreement supersedes and replaces all prior written employment agreements, offer letters, or oral promises regarding the subject matter herein, including, but not limited to, your initial August 24, 2017 offer letter agreement with the Company and your April 19, 2019 change in control agreement.

1. Position; Location. You will continue to serve as the Company’s Vice President, Finance and Corporate Controller and will be responsible for such duties as are assigned to you by the Company’s Board of Directors (the “**Board**”) or Chief Executive Officer. This position is full-time. As an exempt salaried employee, you are expected to work the Company’s normal business hours as well as additional hours as required by the nature of your work assignments, and will not be eligible for overtime compensation. You will continue to work out of RAPT’s offices located at 561 Eccles Avenue, South San Francisco, CA 94080. Of course, the Company may change your position, duties, and work location from time to time in its discretion.

2. CIIAA; Company Policies. You are required to continue to abide by the terms of the confidential information and inventions assignment agreement (the “**CIIAA**”) that you previously executed. In addition, you must continue to comply with Company’s personnel policies and procedures as they may be interpreted, adopted or revised from time to time in the Company’s sole discretion.

3. Base Salary. You will continue to receive an annualized base salary of \$265,000, subject to deductions for taxes and other withholdings as required by law, and payable in accordance with RAPT’s payroll cycle.

4. Annual Bonus. You will continue to be eligible for an annual (calendar year) discretionary bonus, with a target amount equal to 30% of your annual base salary, contingent upon achievement, in the Company’s sole discretion, of individual and corporate performance objectives established by the Company, as well as any other criteria the Company deems relevant (the “**Annual Bonus**”). To receive payment of any Annual Bonus, you must be employed by the Company through the date of payment of the Annual Bonus. Any Annual Bonus will not be earned until paid and will be paid on or before March 15 of the year following the year to which the Annual Bonus relates. If your employment terminates for any reason prior to the payment date of the Annual Bonus, you will not have earned, and will not be paid, any pro-rated Annual Bonus.

5. Equity. Your existing equity awards will continue to be governed by the terms of the applicable plan documents, grant notices and equity agreements. In addition, you shall continue to be eligible for further equity awards from time to time as determined by the Board in its sole discretion.

6. **Benefits.** During your employment, you shall continue to be eligible to participate in the employee benefit plans maintained by RAPT as are in effect from time to time and generally available to similarly situated RAPT employees, subject in each case to the generally applicable terms and conditions of the plan in question and Company policies. In addition, you will continue to be eligible for paid time off consistent with applicable law and the RAPT policy generally applicable to similarly situated RAPT employees. Any benefits offered by RAPT are subject to change without notice at the sole discretion of RAPT.

7. **Termination of Employment; Severance.**

(a) **At-Will Status.** The Company and you understand and agree that your employment relationship is at-will. Accordingly, there are no promises or representations concerning the duration of your employment relationship, which may be terminated by either you or Company at any time, with or without Cause (as defined herein) or Good Reason (as defined herein), and with or without advance notice. Your at-will status cannot be altered except in an express written agreement signed by you and the Company with specific written approval of the Board.

(b) **Resignation by You.** You may resign from the Company with or without Good Reason. You agree to provide at least three (3) weeks advance written notice of a resignation without Good Reason, to allow for an orderly transition. The Company may accelerate the date your resignation is to become effective, in its sole discretion.

(c) **Final Pay upon Termination for Any Reason.** Except as otherwise provided by this Agreement and/or required by law, upon termination of your employment for any reason, the Company's obligation to make payments hereunder shall cease, except that the Company shall pay all amounts due and payable for your services through your last day of employment (the "**Separation Date**"), including all accrued unpaid base salary earned through the Separation Date, any benefits accrued prior to the Separation Date, all accrued but unused vacation as of the Separation Date, and any reimbursable business expenses incurred but unreimbursed as of the Separation Date.

(d) **Severance Benefits Unrelated to a Change in Control.** If your employment is terminated by the Company without Cause (and not due to your death or disability), or due to your resignation for Good Reason, in either case not within the twelve (12) month period following the effective date of a Change in Control (as defined herein), then subject to the preconditions set forth below in Section 7(f), you shall be eligible to receive the following severance benefits:

(i) Payment of severance equal to six (6) months of your base salary in effect immediately prior to the Separation Date (or, the level in effect prior to any reduction of base salary that constitutes Good Reason), less applicable payroll tax withholdings and deductions, to be paid in the form of salary continuation beginning on the first regularly scheduled payroll date of the Company following the 60th day following your Separation from Service (as defined herein).

(ii) In addition, provided you timely elect to continue your group health insurance coverage after the Separation Date pursuant to the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended or any state law of similar effect (collectively, “**COBRA**”), the Company will reimburse the monthly COBRA premiums (the “**COBRA Payments**”) you pay to continue your health insurance coverage (including dependent coverage) under COBRA until the earlier of (A) a period of six (6) months after the Separation Date, (B) the date you become eligible for group health insurance coverage through a new employer or (C) the date you cease to be eligible for COBRA coverage (the “**COBRA Payment Period**”). You must submit to the Company appropriate documentation of the foregoing health insurance payments, within sixty (60) days of making such payments, in order to be reimbursed. Notwithstanding the foregoing, if the Company determines, in its sole discretion, that it cannot pay the COBRA Payments without a substantial risk of violating applicable law (including, without limitation, Section 2716 of the Public Health Service Act), at the end of each remaining month of the COBRA Payment Period, the Company shall pay you directly a taxable monthly amount which, after taxes, equals the COBRA Payment amount the Company would have otherwise paid to you. You agree to promptly notify the Company in writing if you become eligible for group health insurance coverage through a new employer before the end of the COBRA Payment Period.

(e) **Change in Control Termination.** If your employment is terminated by the Company without Cause (but not due to your death or Disability), or you resign for Good Reason, and in either case such termination or resignation occurs within twelve (12) months after the effective date of a Change in Control (as defined below), then subject to the preconditions set forth below in Section 7(f), you shall be eligible to receive the following severance benefits:

(i) Payment of severance equal to nine (9) months of your base salary in effect immediately prior to the Separation Date (or, the level in effect prior to any reduction of base salary that constitutes Good Reason), less applicable payroll tax withholdings and deductions, to be paid in the form of salary continuation beginning on the first regularly scheduled payroll date of the Company following the 60th day following your Separation from Service;

(ii) Accelerated vesting of your equity awards so that you become one hundred percent (100%) vested in all such equity awards (unless otherwise specified in the applicable equity award agreement governing the applicable award);

(iii) A lump sum cash payment equal to your target Annual Bonus less deductions and withholdings, to be paid on the first regularly scheduled payroll date of the Company following the 60th day following your Separation from Service); and

(iv) Provided you timely elect to continue your group health insurance coverage after the Separation Date pursuant to COBRA, the Company will reimburse the COBRA Payments you pay to continue your health insurance coverage (including dependent coverage) under COBRA until the earlier of (A) a period of nine (9) months after the Separation Date, (B) the date you become eligible for group health insurance coverage through a new employer or (C) the date you cease to be eligible for COBRA coverage (the “**CIC COBRA Payment Period**”). You must submit to the Company appropriate documentation of the foregoing health insurance payments, within sixty (60) days of making such payments, in order to be reimbursed. Notwithstanding the foregoing, if the Company determines, in its sole discretion, that it cannot pay

the COBRA Payments without a substantial risk of violating applicable law (including, without limitation, Section 2716 of the Public Health Service Act), at the end of each remaining month of the CIC COBRA Payment Period, the Company shall pay you directly a taxable monthly amount which, after taxes, equals the COBRA Payment amount the Company would have otherwise paid to you. You agree to promptly notify the Company in writing if you become eligible for group health insurance coverage through a new employer before the end of the CIC COBRA Payment Period.

(f) Preconditions. As a precondition to receiving any severance benefits under this Agreement, you must (i) remain in compliance with all continuing obligations you owe to the Company, including those under this Agreement and your CIIAA, and (ii) within twenty-one (21) days after the Separation Date (or forty-five (45) days after the Separation Date, in the event of a group reduction-in-force), you must timely sign and return to the Company a release of claims in a form acceptable to the Company and allow the release to become fully-effective and non-revocable by its terms.

(g) Prior CIC Benefits. You and the Company hereby acknowledge and agree that: (i) this Agreement supersedes in its entirety any agreement, plan, or portion thereof pursuant to which you are or were entitled to any benefits in the event of a Change in Control, such that the parties' rights and obligations under any such prior agreement, plan, or portion thereof are null and void; and (ii) the severance benefits described in Section 7(e) are the sole benefits to which you shall be entitled in the event of a separation following a Change in Control.

8. Definitions.

(A) Cause. For purposes of this Agreement, "**Cause**," as determined by the Board acting in good faith and based on information then known to it, means: (i) your conviction (including a guilty plea or a no contest plea) of a felony, or of any other crime involving fraud, dishonesty or moral turpitude; (ii) your attempted commission of or participation in a fraud or act of material dishonesty against the Company; (iii) your material breach of any written agreement between you and the Company (including but not limited to your CIIAA) or material breach or material neglect of any statutory or fiduciary duty you owe to the Company as reasonably determined by the Company's Chief Executive Officer and the Board, in each case, after having provided you with not less than 30 days written notice of same and with the opportunity to cure of the same duration to the extent curable; or (iv) your conduct that constitutes gross insubordination, incompetence or habitual neglect of your duties as reasonably determined by the Company's Chief Executive Officer and the Board, in each case, after having provided you with not less than 30 days written notice of same and with the opportunity to cure of the same duration to the extent curable.

(B) Good Reason. For purposes of this Agreement, "**Good Reason**" for your resignation of your employment will exist following the occurrence of any of the following without your written consent: (i) a material reduction in your duties (including responsibilities and/or authorities), *provided, however*, that a change in job position (including a change in title) shall not be deemed a "material reduction" in and of itself unless your new duties are substantially reduced from the prior duties; (ii) relocation of your principal place of employment to a place that increases your one-way commute by more than seventy five (75) miles as compared to your then current

principal place of employment immediately prior to such relocation; or (iii) a reduction of at least 10% of your base salary or base compensation (unless pursuant to a salary or base compensation reduction program applicable generally to the Company's key employees), which percentage the parties agree is a "material" reduction; provided, however, that in order to resign for Good Reason, you must (1) provide written notice to the Company within 30 days after the first occurrence of the event giving rise to Good Reason setting forth the basis for your resignation, (2) allow the Company at least 30 days from receipt of such written notice to cure such event, and (3) if such event is not reasonably cured within such period, your resignation from all positions you then hold with the Company is effective not later than 90 days after the expiration of the cure period.

(c) **Change in Control.** For purposes of this Agreement, "**Change in Control**" means: (i) the acquisition of the Company by another entity by means of any transaction or series of related transactions to which the Company is party (including, without limitation, any stock acquisition, reorganization, merger or consolidation but excluding any sale of stock for capital raising purposes) other than a transaction or series of transactions in which the holders of the voting securities of the Company outstanding immediately prior to such transaction continue to retain (either by such voting securities remaining outstanding or by such voting securities being converted into voting securities of the surviving entity), as a result of shares in the Company held by such holders prior to such transaction, at least fifty percent (50%) of the total voting power represented by the voting securities of the Company or such surviving entity outstanding immediately after such transaction or series of transactions; or (ii) a sale, lease or other conveyance of all or substantially all of the assets of the Company, in each case, only to the extent such event also constitutes a "change in ownership" of the Company or a "change in the ownership of a substantial portion of the Company's assets" for purposes of Section 409A of the Internal Revenue Code of 1986, as amended (the "**Code**"), if required for compliance with Section 409A of the Code.

9. Code Section 409A Compliance.

(a) Notwithstanding anything set forth in this Agreement to the contrary, any payments and benefits provided pursuant to this Agreement which constitute "deferred compensation" within the meaning of the Treasury Regulations issued pursuant to Section 409A of the Code shall not commence until you have incurred a "separation from service" (as such term is defined in the Treasury Regulation Section 1.409A-1(h) ("**Separation From Service**")), unless the Company reasonably determines that such amounts may be provided to you without causing you to incur the additional 20% tax under Section 409A.

(b) For the avoidance of doubt, it is intended that the payments and benefits set forth in this Agreement satisfy, to the greatest extent possible, the exemptions from the application of Section 409A provided under Treasury Regulation Sections 1.409A-1(b)(4), 1.409A-1(b)(5) and 1.409A-1(b)(9) and this Agreement will be construed to the greatest extent possible as consistent with those provisions. To the extent not so exempt, this Agreement (and any definitions hereunder) will be construed in a manner that complies with Section 409A and incorporates by reference all required definitions and payment terms. For purposes of Section 409A (including, without limitation, for purposes of Treasury Regulation Section 1.409A-2(b)(2)(iii)), your right to receive any installment payments under this Agreement (whether severance payments, reimbursements or otherwise) shall be treated as a right to receive a series of separate payments

and, accordingly, each installment payment hereunder shall at all times be considered a separate and distinct payment. Notwithstanding any provision to the contrary in this Agreement, if the Company (or, if applicable, the successor entity thereto) determines that any payments upon your Separation From Service set forth herein and/or under any other agreement with the Company constitute “deferred compensation” under Section 409A and you are, on your Separation From Service, a “specified employee” of the Company or any successor entity thereto, as such term is defined in Section 409A(a)(2)(B)(i) of the Code, then, solely, to the extent necessary to avoid the incurrence of the adverse personal tax consequences under Section 409A, the timing of the payments upon your Separation From Service shall be delayed until the earlier to occur of: (a) the date that is six months and one day after your Separation From Service or (b) the date of your death (such applicable date, the “**Specified Employee Initial Payment Date**”). On the Specified Employee Initial Payment Date, the Company (or the successor entity thereto, as applicable) shall (A) pay to you a lump sum amount equal to the sum of the payments upon your Separation From Service that you would otherwise have received through the Specified Employee Initial Payment Date if the commencement of the payment of the severance benefits had not been so delayed pursuant to this section and (B) commence paying the balance of the severance benefits in accordance with the applicable payment schedules set forth in this Agreement.

10. 280G.

(a) If any payment or benefit that you will or may receive from the Company or otherwise (a “**280G Payment**”) would (i) constitute a “parachute payment” within the meaning of Section 280G of the Code, and (ii) but for this sentence, be subject to the excise tax imposed by Section 4999 of the Code (the “**Excise Tax**”), then any such 280G Payment will be equal to the Reduced Amount. The “Reduced Amount” will be either (x) the largest portion of the 280G Payment that would result in no portion of the 280G Payment (after reduction) being subject to the Excise Tax, or (y) the largest portion, up to and including the total, of the 280G Payment, whichever amount (*i.e.*, the amount determined by clause (x) or by clause (y)), after taking into account all applicable federal, state and local employment taxes, income taxes, and the Excise Tax (all computed at the highest applicable marginal rate), results in your receipt, on an after-tax basis, of the greater economic benefit notwithstanding that all or some portion of the 280G Payment may be subject to the Excise Tax. If a reduction in a 280G Payment is required pursuant to the preceding sentence and the Reduced Amount is determined pursuant to clause (x) of the preceding sentence, the reduction will occur in the manner (the “**Reduction Method**”) that results in the greatest economic benefit for you. If more than one method of reduction will result in the same economic benefit, the items so reduced will be reduced pro rata (the “**Pro Rata Reduction Method**”).

(b) Notwithstanding the foregoing, if the Reduction Method or the Pro Rata Reduction Method would result in any portion of the 280G Payment being subject to taxes pursuant to Section 409A of the Code that would not otherwise be subject to taxes pursuant to Section 409A of the Code, then the Reduction Method and/or the Pro Rata Reduction Method, as the case may be, will be modified so as to avoid the imposition of taxes pursuant to Section 409A of the Code as follows: (A) as a first priority, the modification will preserve to the greatest extent possible, the greatest economic benefit for you as determined on an after-tax basis; (B) as a second priority, 280G Payments that are contingent on future events (*e.g.*, being terminated without Cause), will be reduced (or eliminated) before 280G Payments that are not contingent on future events; and (C)

as a third priority, 280G Payments that are “deferred compensation” within the meaning of Section 409A of the Code will be reduced (or eliminated) before 280G Payments that are not “deferred compensation” within the meaning of Section 409A of the Code.

(c) If Section 280G of the Code is not applicable by law to you, the Company will determine whether any similar law in your jurisdiction applies and should be taken into account.

(d) The independent professional firm engaged by the Company for general tax audit purposes as of the day prior to the effective date of the Change in Control will make all determinations required to be made under this Section. If the firm so engaged by the Company is serving as accountant or auditor for the individual, entity or group effecting the Change in Control, the Company will appoint a nationally recognized independent professional firm to make the determinations required hereunder. The Company will bear all expenses with respect to the determinations by such firm required to be made hereunder. The Company will use commercially reasonable efforts to cause the firm engaged to make the determinations hereunder to provide its calculations, together with detailed supporting documentation, to the Company and you within thirty (30) calendar days after the date on which your right to a 280G Payment becomes reasonably likely to occur (if requested at that time by the Company or you) or such other time as requested by the Company or you.

(e) If you receive a 280G Payment for which the Reduced Amount was determined pursuant to clause (x) of the first paragraph of this Section and the Internal Revenue Service determines thereafter that some portion of the 280G Payment is subject to the Excise Tax, you will promptly return to the Company a sufficient amount of the 280G Payment (after reduction pursuant to clause (x) of the first paragraph of this Section) so that no portion of the remaining 280G Payment is subject to the Excise Tax. For the avoidance of doubt, if the Reduced Amount was determined pursuant to clause (y) of the first paragraph of this Section, you will have no obligation to return any portion of the 280G Payment pursuant to the preceding sentence.

11. Conflicts. You agree that while employed by the Company you will not engage in any other employment, consulting or other business that would interfere with your duties to the Company or create a conflict of interest. You specifically warrant that you are not subject to an employment agreement or restrictive covenant preventing full performance of your duties to the Company. You agree not to bring to the Company or use in the performance of your responsibilities at the Company any materials or documents of a former employer that are not generally available to the public, unless you have obtained express written authorization from the former employer for their possession and use. You also agree to honor all obligations to former employers during your employment with the Company.

12. Outside Activities. You agree to devote such of your business time, energy, and skill to the affairs of the Company and its subsidiaries as shall be necessary to perform the duties of such positions; *provided, however*, that you may engage in civic and not-for-profit activities (*e.g.* charitable and industry association activities) so long as such activities do not materially interfere with your obligations to the Company or create a conflict of interest. You further agree that if, during the term of your relationship with the Company, you wish to perform any consulting or outside activities for any business or for-profit entities, including serving on any advisory boards

or boards of director of for-profit entities, any such additional activities shall require the Company's prior written consent.

13. Dispute Resolution. To ensure the rapid and economical resolution of disputes that may arise in connection with your employment with the Company, you and the Company agree that any and all disputes, claims, or causes of action, in law or equity, including but not limited to statutory claims, arising from or relating to the enforcement, breach, performance, or interpretation of this Agreement, your employment with the Company, or the termination of your employment, shall be resolved pursuant to the Federal Arbitration Act, 9 U.S.C. § 1-16, to the fullest extent permitted by law, by final, binding and confidential arbitration conducted by JAMS or its successor, under JAMS' then applicable rules and procedures for employment disputes before a single arbitrator (available upon request and also currently available at <http://www.jamsadr.com/rules-employment-arbitration/>). **You acknowledge that by agreeing to this arbitration procedure, both you and the Company waive the right to resolve any such dispute through a trial by jury or judge or administrative proceeding.** In addition, all claims, disputes, or causes of action under this section, whether by you or the Company, must be brought in an individual capacity, and shall not be brought as a plaintiff (or claimant) or class member in any purported class or representative proceeding, nor joined or consolidated with the claims of any other person or entity. The arbitrator may not consolidate the claims of more than one person or entity, and may not preside over any form of representative or class proceeding. To the extent that the preceding sentences regarding class claims or proceedings are found to violate applicable law or are otherwise found unenforceable, any claim(s) alleged or brought on behalf of a class shall proceed in a court of law rather than by arbitration. This paragraph shall not apply to any action or claim that cannot be subject to mandatory arbitration as a matter of law, including, without limitation, claims brought pursuant to the California Private Attorneys General Act of 2004, as amended, to the extent such claims are not permitted by applicable law to be submitted to mandatory arbitration (collectively, the "**Excluded Claims**"). In the event you intend to bring multiple claims, including one of the Excluded Claims listed above, the Excluded Claims may be publicly filed with a court, while any other claims will remain subject to mandatory arbitration. You will have the right to be represented by legal counsel at any arbitration proceeding. Questions of whether a claim is subject to arbitration under this agreement shall be decided by the arbitrator. Likewise, procedural questions which grow out of the dispute and bear on the final disposition are also matters for the arbitrator. The arbitrator shall: (a) have the authority to compel adequate discovery for the resolution of the dispute and to award such relief as would otherwise be permitted by law; and (b) issue a written statement signed by the arbitrator regarding the disposition of each claim and the relief, if any, awarded as to each claim, the reasons for the award, and the arbitrator's essential findings and conclusions on which the award is based. The arbitrator shall be authorized to award all relief that you or the Company would be entitled to seek in a court of law. The Company shall pay all JAMS arbitration fees in excess of the administrative fees that you would be required to pay if the dispute were decided in a court of law. Nothing in this Agreement is intended to prevent either you or the Company from obtaining injunctive relief in court to prevent irreparable harm pending the conclusion of any such arbitration. Any awards or orders in such arbitrations may be entered and enforced as judgments in the federal and state courts of any competent jurisdiction.

14. Miscellaneous. This Agreement, together with its exhibits and any documentation related to your equity interests, forms the complete and exclusive statement of your employment

agreement with the Company. It supersedes any other agreements or promises made to you by anyone, whether oral or written. Except for terms reserved to the Company's discretion, no term or provision of this Agreement may be amended waived, released, discharged or modified except in writing, signed by you and an authorized officer of the Company. This Agreement will be governed by the laws of California. If any provision of this Agreement is determined to be invalid or unenforceable, in whole or in part, this determination shall not affect any other provision of this offer letter agreement and the provision in question shall be modified so as to be rendered enforceable in a manner consistent with the intent of the parties insofar as possible under applicable law. This Agreement may be delivered and executed via facsimile, electronic mail (including pdf or any electronic signature complying with the U.S. federal ESIGN Act of 2000, Uniform Electronic Transactions Act or other applicable law) or other transmission method and shall be deemed to have been duly and validly delivered and executed and be valid and effective for all purposes.

If you are in agreement with the terms set forth above, please sign below and return the signed Agreement.

Sincerely,

/s/ Brian Wong

Brian Wong, CEO

Understood and Accepted:

/s/ Karen Lam

Karen Lam

July 10, 2019

Date

RAP T THERAPEUTICS, INC.

AMENDED AND RESTATED NON-EMPLOYEE DIRECTOR COMPENSATION POLICY

SEPTEMBER 26, 2019

Each member of the Board of Directors (the “**Board**”) of RAPT Therapeutics, Inc. (the “**Company**”) who is a non-employee director of the Company (each such member, a “**Non-Employee Director**”) will receive the compensation described in this Amended and Restated Non-Employee Director Compensation Policy (the “**Director Compensation Policy**”) for his or her Board service.

The Director Compensation Policy will be effective as of September 26, 2019 (the “**Effective Date**”). The Director Compensation Policy may be amended at any time in the sole discretion of the Board or the Compensation Committee of the Board.

A Non-Employee Director may decline all or a portion of his or her compensation by giving notice to the Company prior to the date cash is to be paid or equity awards are to be granted, as the case may be.

ANNUAL CASH COMPENSATION

Commencing at the beginning of the first calendar quarter following the Effective Date, each Non-Employee Director will receive the cash compensation set forth below for service on the Board. The annual cash compensation amounts will be payable in equal quarterly installments, in arrears no later than 30 days following the end of each quarter in which the service occurred, prorated for any partial quarter of service. All annual cash fees are vested upon payment. In addition, each Non-Employee Director may elect to receive all of the annual cash compensation set forth below that the Non-Employee Director is eligible to earn beginning with the fiscal year commencing on January 1, 2020 and each subsequent fiscal year in the form of stock options granted pursuant to the Company’s 2019 Equity Incentive Plan, as amended from time to time, or any successor plan (the “**Plan**”) subject to the terms and conditions as set forth below.

1. Annual Board Service Retainer:

- (a) All Non-Employee Directors: \$35,000
- (b) Chair of the Board (as applicable): \$30,000 (in addition to above)

2. Annual Committee Member Service Retainer:

- (a) Member of the Audit Committee: \$12,500
- (b) Member of the Compensation Committee: \$5,000
- (c) Member of the Nominating and Corporate Governance Committee: \$4,000

3. Annual Committee Chair Service Retainer (in lieu of Committee Member Service Retainer):

- (a) Chair of the Audit Committee: \$25,000
 - (b) Chair of the Compensation Committee: \$10,000
 - (c) Chair of the Nominating and Corporate Governance Committee: \$8,000
-

Timing of Elections Regarding Annual Cash Compensation; Time and Form of Payment

1. *Current Non-Employee Directors:* If a Non-Employee Director's service as a Non-Employee Director commences prior to the beginning of a fiscal year, then the Non-Employee Director must make an election, prior to the beginning of such fiscal year, to receive the Non-Employee Director's (i) Annual Board Service Retainer(s) for such fiscal year and (ii) any Annual Committee Member Service Retainer(s) or Annual Committee Chair Service Retainer(s) that is or may become payable for such fiscal year (each, a "**Retainer**") in the form of either cash or stock options. The Retainer(s) will be paid or granted as follows:

- *Cash:* If the Non-Employee Director elects to receive the Retainers in cash, the Retainers will be paid in the form of cash in arrears in equal installments over the applicable number of fiscal quarters during such fiscal year, with payment occurring on the last day of the applicable fiscal quarter (i.e., March 31st, June 30th, September 30th or December 31st).
- *Stock Options:* If the Non-Employee Director elects to receive the Retainers in the form of stock options, such stock options will automatically, and without further action by the Board or Committee of the Board, be granted on the last business day in March of such fiscal year. Any such award will vest as follows: (i) 25% will vest on the last day of the first fiscal quarter during such fiscal year; and (ii) 25% will vest on the last day of each subsequent fiscal quarter during such fiscal year, provided that the Non-Employee Director is in service as a Director on the first day of the fiscal quarter of the applicable scheduled vesting date. Notwithstanding the foregoing, if the Non-Employee Director becomes a member of a Committee, Chair of a Committee or Chair of the Board after the last business day in March of such fiscal year, then the portion (if any) of his or her Annual Committee Member Service Retainer, Annual Committee Chair Service Retainer or Chair of the Board Service Retainer, as applicable, that is to be granted in the form of stock options will automatically, and without further action by the Board or Committee of the Board, be granted on the third business day after the date that the Non-Employee Director becomes a member of a Committee, Chair of a Committee or Chair of the Board, as applicable. Any such award will vest in equal installments as follows: (i) the first installment will vest on the last day of the fiscal quarter of the date of grant; and (ii) any remaining installment(s) will vest on the last day of any subsequent fiscal quarter(s) during such fiscal year, provided that the Non-Employee Director is in service as a Director on the first day of the fiscal quarter of the applicable scheduled vesting date.

2. *New Non-Employee Directors:* If a Non-Employee Director's service as a Non-Employee Director commences on or after the beginning of a fiscal year, then the Non-Employee Director must make an election, within 30 days following the commencement of such service, with respect to his or her Retainers that are or may become payable for such fiscal year; provided, however, that (a) such election will be applicable only to the portion of the applicable Retainer payable for any fiscal quarter during such fiscal year that begins after the date of such election, and (b) no such election may be made if such service commences during the final fiscal quarter of such fiscal year. Each such Retainer will be paid or granted as follows:

- *Cash:* If the Non-Employee Director elects to receive the Retainers in cash, Retainers with respect to any fiscal quarter during such fiscal year that begins after the date of such election will be paid in the form of cash in arrears in equal installments over the applicable number of fiscal quarters during such fiscal year, with payment occurring on the last day of the applicable fiscal quarter.
 - *Stock Options:* If the Non-Employee Director elects to receive the Retainers in the form of stock options, with respect to any fiscal quarter during such fiscal year that begins after the date
-

of such election, such stock options will automatically, and without further action by the Board or Committee of the Board, be granted on the first business day of the first fiscal quarter that begins after the date of such election. Any such award will vest in equal installments as follows: (i) the first installment will vest on the last day of the fiscal quarter of the date of grant; and (ii) any remaining installment(s) will vest on the last day of any subsequent fiscal quarter(s) during such fiscal year, provided that the Non-Employee Director is in service as a Director on the first day of the fiscal quarter of the applicable scheduled vesting date. Notwithstanding the foregoing, if the Non-Employee Director becomes a member of a Committee, Chair of a Committee or Chair of the Board after the first business day of the first fiscal quarter that begins after the date of such election, then the portion (if any) of his or her Annual Committee Member Service Retainer, Annual Committee Chair Service Retainer or Chair of the Board Service Retainer, as applicable, that is to be granted in the form of stock options, will automatically, and without further action by the Board or Committee of the Board, be granted on the third business day after the date that the Non-Employee Director becomes a member of a Committee, Chair of a Committee or Chair of the Board, as applicable. Any such award will vest in equal installments as follows: (i) the first installment will vest on the last day of the fiscal quarter of the date of grant; and (ii) any remaining installment(s) will vest on the last day of any subsequent fiscal quarter(s) during such fiscal year, provided that the Non-Employee Director is in service as a Director on the first day of the fiscal quarter of the applicable scheduled vesting date.

Terms of Elections Regarding Annual Cash Compensation:

- Once an election is submitted for a fiscal year, it will be irrevocable with respect to such fiscal year.
- A Non-Employee Director must submit a new election for each fiscal year.
- Elections with respect to a Non-Employee Director's Retainers must be allocated 100% in either cash or stock options. A Non-Employee Director may not make an election to receive cash or stock options with respect to an individual Retainer or any portion thereof.

Terms of Stock Options Granted Pursuant to Elections:

- Any stock options granted pursuant to a Non-Employee Director's election will be granted under the Plan and will be subject to the terms and conditions of (i) this Director Compensation Policy, (ii) the Plan and (iii) the form stock option grant notices and agreements approved by the Board for the grant of such awards to Non-Employee Directors.
 - The actual number of shares subject to any stock options granted pursuant to this Director Compensation Policy and a Non-Employee Director's election to receive the Retainers in the form of stock options will be determined by dividing the Retainers by the "fair value" of a share of the Company's common stock on the last business day in March of the fiscal year in which the stock option is granted, determined using the Black-Scholes model regularly used by the Company.
 - The shares subject to any stock options granted pursuant to a Non-Employee Director's election will vest in installments subject to the Non-Employee Director's Continuous Service (as defined in the Plan) through such vesting dates on the terms specified above; provided, however, that all unvested shares subject to such stock options will accelerate and vest in full upon a Change in Control (as defined in the Plan), subject in each case to the Non-Employee Director's Continuous Service as of immediately prior to the Change in Control.
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- Any stock options granted pursuant to this Director Compensation Policy will be Nonstatutory Stock Options (as defined in the Plan), will have an exercise price per share equal to 100% of the Fair Market Value (as defined in the Plan) of the Company's common stock on the date of grant and will have a term of ten years from the date of grant (subject to earlier termination in connection with the Non-Employee Director's termination of service or certain corporate transactions and in accordance with the terms of the Plan). Any such stock option will become exercisable when vested and the vested portion of any such stock option will remain exercisable in accordance with the stock option grant notice and agreement governing the stock option.

EQUITY COMPENSATION

Equity awards will be granted under the Plan. All stock options granted under the Director Compensation Policy will be Nonstatutory Stock Options, with a term of ten years from the date of grant (subject to earlier termination upon a termination of the Non-Employee Director's Continuous Service (as defined in the Plan)) and an exercise price per share equal to 100% of the Fair Market Value (as defined in the Plan) of a share of the Company's common stock on the date of grant.

1. Automatic Equity Grants.

(a) **Initial Grant for New Directors.** Without any further action of the Board, each person who, after the Effective Date, is elected or appointed for the first time to be a Non-Employee Director will automatically, upon the date of his or her initial election or appointment to be a Non-Employee Director, be granted a Nonstatutory Stock Option to purchase 22,500 shares of common stock (the "**Initial Grant**"). Each Initial Grant will vest in a series of three successive equal annual installments over the three-year period measured from the date of grant, subject to the Non-Employee Director's Continuous Service through each applicable vesting date.

(b) **Annual Grant.** Without any further action of the Board, at the close of business on the date of each annual meeting of the Company's stockholders (each, an "**Annual Meeting**") following the Effective Date, each person who is then a Non-Employee Director will automatically be granted a Nonstatutory Stock Option to purchase 7,500 shares of Company common stock (the "**Annual Grant**"). Each Annual Grant will vest upon the earlier of the one (1) year anniversary of the grant date or the day prior to the Company's next Annual Meeting occurring after the grant date, subject to the Non-Employee Director's Continuous Service through the vesting date.

2. **Change in Control.** Notwithstanding the foregoing vesting schedules, for each Non-Employee Director who remains in Continuous Service with the Company until immediately prior to the closing of a Change in Control (as defined in the Plan), the shares subject to his or her then-outstanding equity awards that were granted pursuant to the Director Compensation Policy will become fully vested immediately prior to the closing of such Change in Control.

3. **Remaining Terms.** The remaining terms and conditions of each stock option, including transferability, will be as set forth in the Company's standard Option Agreement, in the form adopted from time to time by the Board.

EXPENSES

The Company will reimburse Non-Employee Directors for ordinary, necessary and reasonable out-of-pocket travel expenses to cover in-person attendance at and participation in Board and committee meetings; *provided*, that the Non-Employee Director timely submits to the Company appropriate documentation substantiating such expenses in accordance with the Company's travel and expense policy, as in effect from time to time.

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the Registration Statement (Form S-8, No. 333-234448) pertaining to the 2019 Equity Incentive Plan of RAPT Therapeutics, Inc. of our report dated March 30, 2020, with respect to the consolidated financial statements of RAPT Therapeutics, Inc. included in this Annual Report (Form 10-K) of RAPT Therapeutics, Inc. for the year ended December 31, 2019.

/s/ Ernst & Young LLP

Redwood City, California

March 30, 2020

**CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Brian Wong, M.D. Ph.D., certify that:

1. I have reviewed this annual report on Form 10-K of RAPT Therapeutics, 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: March 30, 2020

By: /s/ Brian Wong, M.D. Ph.D.

Brian Wong, M.D. Ph.D.

*President, Chief Executive Officer and Director
(Principal Executive Officer)*

**CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Rodney Young, certify that:

1. I have reviewed this annual report on Form 10-K of RAPT Therapeutics, 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: March 30, 2020

By: /s/ Rodney Young
Rodney Young
Chief Financial Officer and Secretary
(Principal Financial Officer)

**CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

I, Brian Wong, M.D. Ph.D., certify pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

1. the Annual Report of RAPT Therapeutics, Inc. on Form 10-K for the year ended December 31, 2019 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
2. the information contained in such Form 10-K fairly presents, in all material respects, the financial condition and results of operations of RAPT Therapeutics, Inc.

Date: March 30, 2020

By: /s/ Brian Wong, M.D. Ph.D.
Brian Wong, M.D. Ph.D.
President, Chief Executive Officer and Director
(Principal Executive Officer)

**CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

I, Rodney Young, certify pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

1. the Annual Report of RAPT Therapeutics, Inc. on Form 10-K for the year ended December 31, 2019 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
2. the information contained in such Form 10-K fairly presents, in all material respects, the financial condition and results of operations of RAPT Therapeutics, Inc.

Date: March 30, 2020

By: /s/ Rodney Young
Rodney Young
Chief Financial Officer and Secretary
(Principal Financial Officer)