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, 2023

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	**47-3313701**
(State or other jurisdiction of incorporation or organization)	**(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, every Interactive Data File required to be submitted 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 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	☐	Accelerated filer	☐
Non-accelerated filer	☒	Smaller reporting company	☒
		Emerging growth company	☒

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

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.☐

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

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 as of June 30, 2023 (the last business day of the registrant's most recently completed second fiscal quarter) was approximately $399 million, based on the closing price of the registrant's common stock, as reported by the Nasdaq Global Market on June 30, 2023 of $18.70 per share. Shares of the registrant's common stock held by each executive officer, director and holder of 10% or more of the outstanding common stock have been excluded in that such persons may be deemed to be affiliates. This calculation does not reflect a determination that certain persons are affiliates of the registrant for any other purpose.

As of March 4, 2024, the number of outstanding shares of the Registrant's common stock, par value $0.0001 per share, was 34,797,702.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Registrant's Definitive Proxy Statement for the 2024 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.

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 studies and clinical trials with respect to zelnecirnon (RPT193), tivumecirnon (FLX475) and other potential future drug candidates;
- our ability to identify, develop and commercialize drug candidates;
- our ability to advance zelnecirnon, tivumecirnon 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 zelnecirnon, tivumecirnon 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 contract with third-party suppliers and manufacturers and their ability to perform adequately under those arrangements;
- 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 compete effectively with existing competitors and new market entrants;
- our expectations regarding uses of proceeds from capital raising transactions;
- potential effects of extensive government regulation;
- our financial performance;
- 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.

Summary of Risk Factors

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. Some of these risks are:

- We are a clinical stage therapeutics 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.
- Zelnecirnon and tivumecirnon are in clinical development, which may fail or suffer delays that materially and adversely affect their commercial viability. 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. Zelnecirnon, tivumecirnon or other future drug candidates may not demonstrate the safety and efficacy necessary to support further clinical development or commercial viability. For example, on February 16, 2024, the U.S. Food and Drug Administration ("FDA") verbally notified us that a clinical hold has been placed on our Phase 2b trial of zelnecirnon in AD and our Phase 2a trial in asthma. Dosing of zelnecirnon has been halted in both clinical trials, as has enrollment of new trial participants. We are actively engaged in discussions with the FDA as part of our efforts to lift the clinical hold. However, there can be no assurance that we can address the issues resulting in the clinical hold in a timely manner or at all. We may not be able to continue the trials and the trials may not yield meaningful data.
- 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.
- Even if regulatory approval is obtained for zelnecirnon, tivumecirnon or any other potential drug candidate, the drug candidate we commercialize may not achieve market acceptance and we may not generate any revenue from the sale or licensing of our drug candidates.
- Undesirable side effects caused by zelnecirnon, tivumecirnon or any other potential drug candidate could cause regulatory authorities to interrupt, delay or halt clinical trials and could result in the delay or denial of regulatory approval by the FDA or other regulatory authorities, which could compromise our

ability to market and derive revenue from our drug candidates. For example, the clinical hold placed on our Phase 2b trial of zelnecirnon in AD and our Phase 2a trial in asthma was based on a serious adverse event of liver failure in one patient in the AD trial, the cause of which is currently unknown but has been characterized as potentially related to zelnecirnon. Dosing of zelnecirnon has been halted in both clinical trials, as has enrollment of new trial participants. We are actively engaged in discussions with FDA as part of our efforts to lift the clinical hold. However, there can be no assurance that we can address the issues resulting in the clinical hold in a timely manner or at all.

- 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. For example our efforts to lift the clinical hold and advance zelnecirnon may result in additional expenses.
- Because we may rely on third parties for manufacturing and supply of our drug candidates, some of which are sole source vendors, our supply may become limited or interrupted or may not be of satisfactory quantity or quality.
- 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 face intense competition from companies that have developed or may develop biologics and small molecule drugs for the treatment of inflammatory diseases and cancer. 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.
- 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.
- Our business could be materially and adversely affected in the future by effects of disease outbreaks, epidemics and pandemics.
- 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 stock price may be volatile. Raising additional capital and other future issuances of our common stock or rights to purchase common stock could result in additional dilution and could cause our stock price to fall.
- 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.
- Failure or perceived failure to comply with existing or future laws, regulations, contracts, self-regulatory schemes, standards and other obligations related to data privacy and security (including security incidents) could harm our business. Compliance or the actual or perceived failure to comply with such obligations could increase the costs of our services, limit their use or adoption and otherwise negatively affect our operating results and business.

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.

PART I

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 inflammatory diseases and oncology. 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. Our lead inflammation drug candidate, zelnecirnon (RPT193), and our lead oncology drug candidate, tivumecirnon (FLX475), each target C-C motif chemokine receptor 4 ("CCR4"), a drug target that potentially has broad applicability in inflammatory diseases and oncology.

Our lead inflammation drug candidate, zelnecirnon, is designed to selectively inhibit the migration of type 2 T helper cells ("Th2 cells") into inflamed tissues. Th2 cells are known to be drivers of inflammatory diseases, including atopic dermatitis ("AD"), asthma, chronic obstructive pulmonary disease ("COPD"), chronic spontaneous urticaria ("CSU"), alopecia areata, prurigo nodularis, chronic rhinosinusitis with nasal polyps ("CRSwNP"), allergic rhinitis and eosinophilic esophagitis. We believe zelnecirnon, if approved, could fill an unmet medical need for a safe and efficacious oral drug in the treatment of inflammatory diseases. We chose to pursue AD as the first indication for zelnecirnon because we believe the characteristics of the disease present an opportunity to demonstrate zelnecirnon's anti-inflammatory effect with the potential for good translatability to later-stage clinical trials. In June 2021, we announced positive topline results from our randomized placebo-controlled Phase 1b clinical trial of zelnecirnon as monotherapy in 31 patients with moderate-to-severe AD. After four weeks of treatment, patients who received zelnecirnon showed greater improvement from baseline compared to the placebo group in several standard measures of disease severity, including the Eczema Area and Severity Index ("EASI") and the validated Investigator Global Assessment ("vIGA"). In the two-week period following the end of treatment, the zelnecirnon group showed continued improvement and further separation from placebo in these measures. We believe the results from this Phase 1b trial provide clinical proof-of-concept ("PoC") in AD and potentially additional Th2-driven inflammatory diseases. We have advanced zelnecirnon to a Phase 2b clinical trial in patients with moderate-to-severe AD and to a Phase 2a clinical trial in patients with moderate-to-severe asthma.

On February 16, 2024, the FDA verbally notified us that a clinical hold has been placed on our Phase 2b trial of zelnecirnon in AD and our Phase 2a trial in asthma. The clinical hold determination was based on a serious adverse event of liver failure in one patient in the AD trial, the cause of which is currently unknown but has been characterized as potentially related to zelnecirnon. Dosing of zelnecirnon has been halted in both clinical trials, as has enrollment of new trial participants.

Our lead oncology drug candidate, tivumecirnon, is designed to selectively inhibit the migration of immunosuppressive regulatory T cells ("T_{reg}") into tumors. We are conducting a multi-cohort Phase 1/2 clinical trial investigating tivumecirnon as monotherapy and in combination with the programmed cell death ("PD-1") checkpoint inhibitor pembrolizumab to study the safety and potential clinical activity of tivumecirnon in patients with advanced cancer. We have disclosed initial observations from the Phase 2 portion of the trial that demonstrated clinical activity of tivumecirnon as monotherapy as well as in combination with pembrolizumab, and we believe these early observations establish initial clinical PoC for tivumecirnon. In November 2023, we announced safety and efficacy data from the Phase 2 trial of patients with advanced checkpoint-naïve non-small cell lung cancer ("NSCLC") treated with tivumecirnon in combination with pembrolizumab. In this cohort, there were 36 patients evaluable for efficacy of which 20 were PD-L1 positive (TPS $\geq$1%). In this PD-L1 positive subset of patients, the combination of tivumecirnon and pembrolizumab showed a 45% (9/20) confirmed overall response rate ("ORR"). The confirmed ORRs for the combination of tivumecirnon and pembrolizumab in the PD-L1 low (TPS 1-49%) and high (TPS $\geq$50%) subsets were 44% (7/16) and 50% (2/4), respectively. In addition, the median progression-free survival ("PFS") for the 20 PD-L1 positive patients was 6.3 months as of the data cutoff date of October 6, 2023, with several patients still on study as of February 2024. In addition to the NSCLC cohort, as of February 2024, we have expanded Stage 2 cohorts ongoing in EBV^+ lymphoma (monotherapy) and checkpoint-experienced head and neck squamous cell carcinoma (combination).

We internally discovered and designed all our drug candidates utilizing what we refer to as our "proprietary drug discovery and development engine." Through our team's deep expertise in immunology and drug discovery, supported by extensive capabilities in computational sciences, we are developing the ability to exploit difficult targets and generate drug candidates that we believe, if approved, will significantly improve treatment paradigms and outcomes for patients by fundamentally modulating the immune responses in a range of inflammatory diseases and cancers. We continue to invest in our proprietary discovery and development engine and are pursuing a range of targets to generate additional potential drug candidates.

We hold worldwide rights to each of our drug candidates, with the exception of the exclusive license granted to Hanmi Pharmaceutical Ltd. ("Hanmi") for tivumecirnon 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").

Our Strategy

- **Advance zelnecirnon through clinical development to commercialization across multiple inflammatory diseases, starting with AD.** We chose to pursue AD as the first indication for zelnecirnon because we believe the characteristics of the disease present an opportunity to demonstrate zelnecirnon's anti-inflammatory effect with the potential for good translatability to later-stage clinical trials. We believe we have established clinical PoC with our Phase 1b data and have advanced zelnecirnon to a Phase 2b clinical trial.
- **Expand development of zelnecirnon into asthma and additional inflammatory diseases.** As with AD, we believe that there remains significant unmet medical need and market potential for a safe and efficacious oral agent for the treatment of asthma. With our Phase 1b data, we believe zelnecirnon has potential clinical translatability in a variety of inflammatory diseases beyond AD and have initiated a Phase 2a clinical trial of zelnecirnon in patients with asthma. Our goal is to develop zelnecirnon in multiple inflammatory diseases, including AD, asthma and potentially COPD, CSU, alopecia areata, prurigo nodularis, CRSwNP, allergic rhinitis and eosinophilic esophagitis.
- **Advance tivumecirnon through clinical development in non-small cell lung cancer and potentially other cancers.** We believe our Phase 2 data for tivumecirnon in combination with anti-PD1 therapy in checkpoint-naïve NSCLC patients are encouraging and warrant further development. Our goal is to expeditiously progress into registrational trials to ultimately enable treatment of NSCLC and potentially other cancer patients for whom current treatments are inadequate.
- **Utilize collaborations and partnerships to support our long-term goals.** We plan to selectively use collaborations and partnerships as strategic tools to maximize the value of our drug candidates.
- **Expand our pipeline by leveraging our proprietary drug discovery and development engine and oral small molecule expertise.** We believe there are additional identifiable targets that will be important to fundamentally modulating the immune response in the treatment of inflammatory diseases and cancer. We will continue to invest in our proprietary discovery and development engine and investigate identified targets to generate additional drug candidates.

Drug Discovery and Development Engine

We credit our efficient 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 computational sciences and the ability to exploit difficult targets. The key pillars of our proprietary drug discovery and development engine are as follows.

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 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 as a potential target. In addition to well-known and clinically validated targets such as PD-1 and 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.

2) **Computationally Enabled Design of Small Molecule Drug Properties.** Key to our rapid discovery of small molecules is our use of structure and computationally assisted drug design strategies to improve potency, selectivity and pharmacokinetic properties and early testing in physiologically relevant immune assays to identify highly selective, orally-administered small molecules. This seamless integration of biology, chemistry and computational disciplines allows for shorter cycle times and quicker iterations between hypothesis and compound selection.

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 design efficient state-of-the-art clinical trials at all stages of development, incorporating patient enrichment and biomarker-based selection strategies where appropriate and identifying opportunities for potential accelerated regulatory approval.

Background on CCR4 in Inflammatory Diseases and Oncology

Our proprietary drug discovery and development engine has identified the cell surface receptor CCR4 as a drug target that potentially has broad applicability in inflammatory diseases and oncology. Receptors such as CCR4 bind to chemokines that orchestrate migration and homing of immune cells to specific tissues throughout the body. Chemokines specific for CCR4 are secreted from inflamed tissues and tumors but are not highly expressed in healthy tissues. Our approach is designed to enable selective restoration of the immune response within inflamed tissues or the tumor without systemically depleting immune cells and broadly suppressing the immune system. Each of our two drug candidates, zelnecirnon and tivumecirnon, target CCR4 in a manner we believe is well suited for inflammatory disease and cancer, respectively.

The immune system is a series of complex interactions between different types of white blood cells. T cells are one category of these cells that play crucial roles in immunological memory, regulation and responses. Two T cell subsets of clinical interest are Th2 cells and T_{reg}, and both express CCR4. The two chemokines that bind to CCR4, C-C motif chemokine ligand 17 (“CCL17”) and C-C motif chemokine ligand 22 (“CCL22”), are over expressed and secreted by allergically inflamed tissues and tumors. This overexpression allows for the theoretical manipulation of CCR4 and its two T cell subtypes to address diseases across the immunological continuum spanning overactive to underactive immune responses in allergic inflammatory disease and oncology.

Our Lead Inflammation Drug Candidate—Zelnecirnon (RPT193)

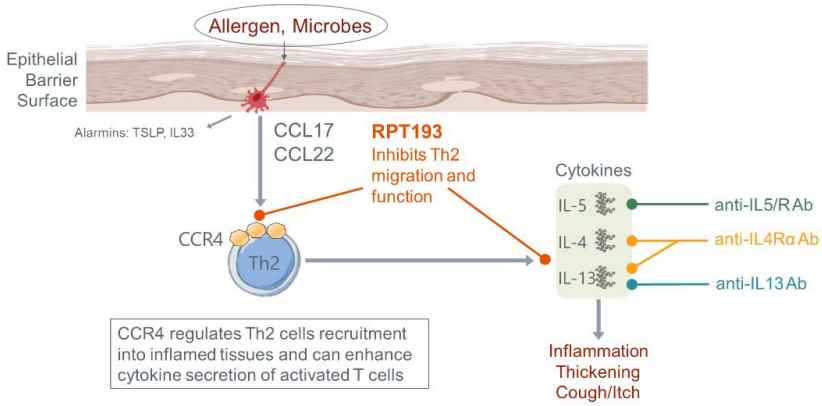
Our lead inflammation drug candidate, zelnecirnon, is a CCR4 antagonist designed to selectively inhibit the migration of Th2 cells into inflamed tissues. Th2 cells are known to be drivers of inflammatory diseases such as AD, asthma, COPD, CSU, alopecia areata, prurigo nodularis, CRSwNP, allergic rhinitis and eosinophilic esophagitis. The current standard of care for AD includes topical creams and steroids as well as injectable biologics, such as dupilumab. 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 and that zelnecirnon, if approved, could fill this unmet need.

We hold worldwide rights to zelnecirnon and own granted patents with respect to zelnecirnon that are scheduled to expire in 2039 (not including any applicable extensions, if approved). Two of those granted U.S. patents cover the composition of matter of zelnecirnon and one covers the therapeutic uses of zelnecirnon. Zelnecirnon is chemically distinct from tivumecirnon, our CCR4 antagonist for oncology.

Background—Th2 Cells and Inflammatory Disease

Th2 cells express high levels of CCR4 and are clinically validated drivers of many inflammatory diseases, including AD, asthma, COPD, CSU, CRSwNP, alopecia areata, prurigo nodularis and eosinophilic esophagitis. When a pathogen comes into contact with the skin or mucosal lining of the nose or lungs, innate immune cells and antibodies that recognize the pathogen initiate a release of inflammatory cytokines. 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 influx of Th2 cells, leading to highly inflammatory conditions.

Zelnecirnon Acts on a Well-Validated Th2 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. The Th2 cells secrete inflammatory cytokines, such as interleukin 4 ("IL-4"), interleukin 5 ("IL-5") and interleukin 13 ("IL-13"), which furthers the inflammation and production of CCL17 and CCL22. Patients suffering from AD and other inflammatory diseases have significantly elevated levels of both CCL17 and CCL22, and CCL17 and CCL22 levels have been found to strongly correlate with the severity of AD and many inflammatory diseases. 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 CCR4 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.

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. diagnosed prevalence of AD is approximately 19 million individuals. Over 60% of these adults have disease characterized as moderate to severe. Furthermore, an estimated seven million children have AD, of which approximately 50% experience moderate-to-severe disease.

AD 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 with AD 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, are 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.

For patients whose AD is not adequately controlled by topical steroids, a number of systemic medications have been approved. Dupilumab is an injectable biologic agent that was approved for moderate-to-severe AD in the United States and Europe in 2017. Dupilumab targets the Th2 pathway and prevents T cell activation and amplification of proinflammatory signaling pathways by blocking IL-4 receptor alpha, (“IL-4Ra”), preventing IL-4 and IL-13 binding. Approximately 36% of patients receiving weekly or biweekly injections of dupilumab achieved significant improvement in disease symptoms. Other biologic agents targeting IL-13 are also available as options as systemic medication for moderate-to-severe AD including tralokinumab, approved in the United States and Europe, and lebrikizumab, approved in Europe and seeking approval in the United States.

Two orally administered JAK inhibitors, abrocitinib and upadacitinib, have been approved in the United States and Europe for use in patients who have had an inadequate response to, or are unable to take, alternative systemic medications such as injectable biologics. 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, JAK 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 due to the potential for serious infections, malignancies, increased mortality in certain patient groups, major adverse cardiovascular events and thromboembolic events.

Despite these recent developments, we believe that there remains significant unmet medical need and market potential for a safe and efficacious oral 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 approved for use in later lines of treatment, as they are broadly immunosuppressive and therefore may not be suitable for long-term maintenance.

Overview of Other Inflammatory Diseases

In addition to AD, a number of inflammatory diseases are characterized by an inflammatory response to cytokines produced by Th2 cells. These diseases include asthma, COPD, CSU, alopecia areata, prurigo nodularis, CRSwNP, allergic rhinitis and eosinophilic esophagitis.

Asthma

Asthma is a chronic inflammatory disease of the airways characterized by intermittent airway obstruction, swelling and hyperproduction of mucus, 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 as 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 beta2-agonists for the treatment of acute symptoms and in conjunction with daily low-dose inhaled corticosteroid ("ICS") monotherapy as a first-line maintenance treatment. The anti-immunoglobin E ("Anti-IgE") monoclonal antibody omalizumab and IL-4Ra antagonist dupilumab can be prescribed for individuals with asthma who are uncontrolled on ICS therapy and demonstrate evidence of either allergic or eosinophilic asthma, respectively. In addition, other biologics targeting the IL-5 pathway, *e.g.*, mepolizumab, benralizumab and reslizumab, as well as tezepelumab, which targets the thymic stromal lymphopoietin ("TSLP"), are available for patients with severe asthma with all but tezepelumab targeting the eosinophilic asthma subtype. While these therapies are generally effective, they are administered via injection or infusion and their targets are downstream of CCR4, presenting a market opportunity for an oral, upstream alternative.

Chronic Obstructive Pulmonary Disease

COPD is a chronic inflammatory disease of the airways characterized by airflow limitation that is not fully reversible with medication, swelling and hyperproduction of mucus, which can result in coughing and shortness of breath. It is a disease typically seen in adults with an estimated prevalence of about 10% in individuals over the age of 40 in the United States. It is often associated with a history of exposure to lung irritants such as smoking or exposure to dust or fumes through work or based on local environmental conditions. However other exposures, including some lung and other infections, may contribute to an increased risk of developing COPD.

The pathophysiology of COPD is complex, but approximately a third of stable COPD patients display evidence of a contribution by uncontrolled allergic inflammation (based on increased peripheral blood eosinophil counts).

Standard treatment of COPD includes reducing exposure (such as limiting or quitting smoking) and lifestyle modifications (such as exercise). The aim of pharmacologic therapy is to decrease symptoms and exacerbations as well as improve quality of life. The first step in medications includes inhaled bronchodilators (beta2-agonists and muscarinic antagonists). As risk level for exacerbations increases, both forms of bronchodilators may be combined and ultimately, in the highest risk group, ICS may also be added as part of "triple therapy" with a beta2-agonist, muscarinic antagonist and ICS. For those with refractory COPD who do not respond to triple therapy, a PDE-4 inhibitor, roflumilast or chronic antibiotic therapy are additional steps. Limitations with this approach exist as roflumilast has common and significant gastrointestinal side effects and modest impacts on decreasing exacerbation rates. Chronic antibiotic therapy with azithromycin has shown variable evidence of effect in refractory COPD and can lead to QT prolongation and/or hearing loss. Thus, we believe there remains an unmet need for a systemic medication for patients with refractory COPD.

In 2023, two studies with dupilumab showed evidence of significant decreases in exacerbations in COPD patients. Both studies focused on COPD patients with evidence of allergic inflammation. These data suggest that targeting allergic inflammation has potential to treat a key subset of COPD patients. While dupilumab has shown evidence of effect, it is not yet approved for use in COPD and is also administered by injection. Thus, we believe COPD presents a market opportunity for an oral alternative that targets this core biology.

Chronic Spontaneous Urticaria

CSU is one of a group of skin conditions that are characterized by hives, redness, itching and swelling, lasting for greater than six weeks. The trigger for CSU is unknown. Symptoms result from the degranulation of dermal mast cells and IgE signaling likely contributes to inappropriate mast cell activation. CSU affects 1% of the general population, with women affected more often than men. Though both children and adults can be diagnosed with CSU, patients typically show initial symptoms in the third to fifth decades of life.

Current treatment guidelines for CSU 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. Dupilumab has also demonstrated clinical effects in CSU patients in Phase 3 trials, supporting a role for allergic inflammation in CSU. Given the responses observed with 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 CSU, supporting the potential use of zelnecirnon in this indication.

Alopecia Areata

Alopecia areata is an inflammatory disease of the hair follicle that results in nonscarring hair loss. Hair loss ranges from patchy to complete loss of scalp, eyebrow, eyelash and body hair. Alopecia areata affects approximately 1 in 1000 people worldwide with both children and adults affected.

Standard treatment for alopecia areata includes: topical or intralesional corticosteroids for limited to extensive hair loss or an oral JAK inhibitor, *e.g.*, baricitinib, for extensive hair loss. Based on a Phase 2a study of dupilumab, patients with evidence of dysregulated allergic inflammation (based on a high serum IgE level) showed preliminary evidence of improvement compared to placebo. Thus, allergic inflammation may play a role in driving disease in a subset of patients and zelnecirnon could provide an additional, oral, therapeutic option for these patients.

Prurigo Nodularis

Prurigo Nodularis is a chronic skin disorder that manifests as multiple, firm, pruritic nodules. Patients are typically older with a median age of approximately 60 years and a prevalence of ~5-10 per 10,000 people in the United States.

Current management of prurigo nodularis involves the use of anti-pruritics, particularly sedating anti-histamines at bedtime, as well as emollients and occlusive dressings to soothe and/or prevent scratching. Topical and intralesional corticosteroids have been used for more limited disease, but widespread or recalcitrant disease requires systemic therapies. Phototherapy has been one option for widespread disease. In terms of medical therapy, conventional immunosuppressants, including methotrexate and cyclosporin have been used with varying success. Dupilumab was recently approved for prurigo nodularis supporting a clear role for allergic inflammation and Th2 cytokines in driving prurigo nodularis. These data also support the potential utility of zelnecirnon in prurigo nodularis.

Chronic Rhinosinusitis with Nasal Polyps

CRSwNP 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 using an objective measure such as a nasal endoscopy or CT scan is required, given lack of symptom specificity. It is believed that approximately 2-5% of the general population experiences CRSwNP. There is wide belief that CRSwNP 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 CRSwNP 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 CRSwNP, 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, including mepolizumab, have been evaluated as treatment alternatives for CRS, with mepolizumab now considered a recommended treatment for CRSwNP patients. Dupilumab has also demonstrated activity in CRSwNP 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 zelnecirnon represents a potential oral treatment for this indication.

Allergic Rhinitis

Allergic rhinitis is a disease of the lining of the nasal passages and, in some cases, can also extend to include the lining of the sinus cavities (allergic rhinosinusitis) or involve the eyes (allergic rhinoconjunctivitis). Allergic rhinitis is common, affecting 10-30% of children and adults. Allergic rhinitis is associated with symptoms including fits of sneezing, runny nose, nasal obstruction and itch. Patients often also experience cough, irritation of the back of the throat, irritability and/or fatigue. Clinical manifestations are typically caused by exposure to allergens. Allergens causing symptoms can be either seasonal or perennial and, similarly, patients demonstrate different temporal patterns of symptoms according to individual allergen reactivity profiles. Patients with a perennial pattern may also have seasonal exacerbations. Symptoms can range from mild, intermittent to severe, with the latter leading to significant morbidity, including sleep disturbance, impaired school/work performance or poor quality-of-life.

The current treatment paradigm for severe forms of perennial allergic rhinitis includes topical, corticosteroid nasal sprays to minimize the inflammatory effects of continued allergen exposure. Anti-histamine nasal sprays and non-sedating, systemic anti-histamines are also used in conjunction with corticosteroid nasal sprays. A significant number of patients remain refractory to these treatments. Systemic therapy options for such patients are limited and include montelukast, a leukotriene receptor antagonist. While used more commonly in the past, neuropsychiatric changes reported with montelukast led to a black box warning. We believe there is an unmet need in the tolerability and safety profiles of patients with severe refractory cases of allergic rhinitis given the dearth of systemic options available. CCL17 and CCL22 are elevated in allergic rhinitis, supporting the potential use of zelnecirnon in this indication.

Eosinophilic Esophagitis

Eosinophilic esophagitis is a chronic inflammatory disease of the esophagus impacting both children and adults. 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 60-75% 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 was recently approved for eosinophilic esophagitis following demonstrated activity in eosinophilic esophagitis in clinical trials, supporting the potential use of zelnecirnon in this indication.

Our Inflammatory Disease Solution: Zelnecirnon

While there are marketed injectable biologics and oral JAK inhibitors, as well as oral drug candidates and injectable biologics in clinical development, we believe there is an unmet need in the treatment landscape for a safe and efficacious oral therapy for the long-term treatment of AD. We believe zelnecirnon, our oral, small molecule CCR4 antagonist designed to block the migration of inflammatory Th2 cells into inflamed tissues, can, if approved, fill this unmet need.

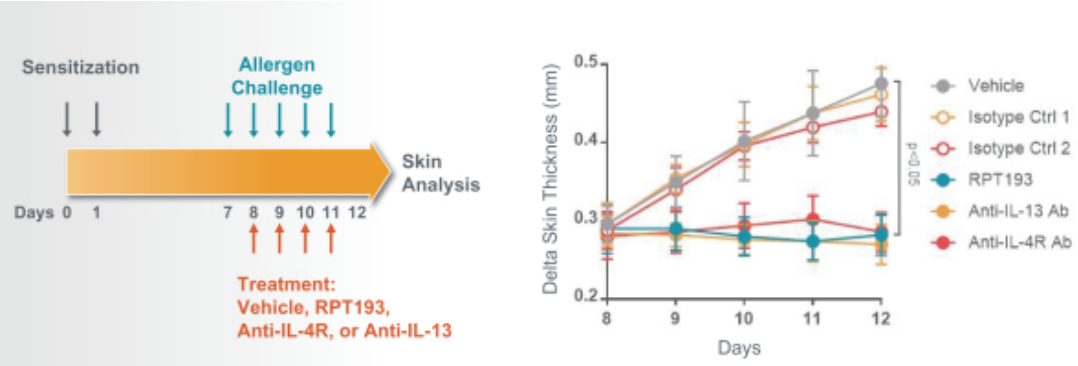
Zelnecirnon has demonstrated the ability to block the migration of mouse and human Th2 cells in vitro and in vivo and has demonstrated activity in multiple preclinical mouse models of AD and asthma. The observed activity in preclinical mouse models was similar to that of commercially available anti-mouse IL-13 and anti-IL-4 receptor antibodies, which we believe are representative of the class of biologics such as dupilumab, lebrikizumab and others targeting Th2-derived cytokines such as IL-4 and IL-13. We believe that the results observed in these models demonstrate the clinical potential to treat a number of Th2-driven inflammatory diseases.

Zelnecirnon for Atopic Dermatitis

Preclinical Data: Zelnecirnon Reduces Skin Inflammation in a Therapeutic Th2-Driven AD Model

In a mouse model of AD, repeated systemic sensitization to fluorescein isothiocyanate ("FITC"), which induces a strong Th2 cell-mediated response leading to increased expression of Th2 cytokines IL-4, IL-5 and IL-13. This leads to inflammation resulting in swelling that is measured as ear thickness. In this therapeutic model, mice receive treatment 24 hours following the allergen challenge when significant ear inflammation was already observed. Oral administration of zelnecirnon resulted in a statistically significant reduction in ear thickness compared to treatment control ($p < 0.05$). When comparing to the respective vehicle or isotype control, zelnecirnon, anti-IL-13 antibody and an anti-IL-4R antibody had similar effects. Therefore, the treatment effect of once daily dosing of zelnecirnon was comparable to that observed with the systemic administration anti-IL-13 and anti-IL-4R antibodies.

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

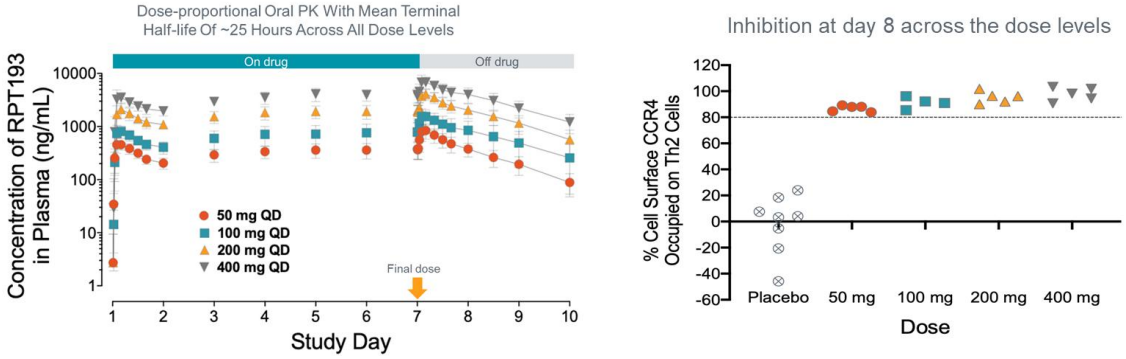


RPT193-01: Phase 1a/1b Clinical Trial in Healthy Subjects and Subjects with Atopic Dermatitis

We initiated a first-in-human Phase 1a/1b trial in August 2019. The blinded Phase 1a portion of the trial, which was conducted in healthy volunteers, focused on safety. Following successful completion of the Phase 1a portion, we progressed to Phase 1b and in June 2021, reported positive topline results from this randomized, placebo-controlled trial in patients with moderate-to-severe AD.

The blinded Phase 1a portion of the Phase 1a/1b trial was a standard single and multiple dose escalation ("SAD/MAD") study. The data from the Phase 1a study demonstrated pharmacokinetics and pharmacodynamics that support once-daily oral dosing with zelnecirnon, and blinded review of safety data supported initiation of the Phase 1b portion of the trial.

Phase 1a Data Supports Once-Daily Dose



The Phase 1b portion of the Phase 1a/1b trial was a randomized, double-blind, placebo-controlled study examining zelnecirnon as monotherapy in patients with moderate-to-severe AD. The study enrolled 31 patients who had an inadequate response to, or were intolerant of, topical corticosteroids. Of the 31 patients enrolled, 21 were treated with 400 mg of zelnecirnon, administered orally once-daily for four weeks, while 10 patients received placebo. The Phase 1b trial was not powered to achieve statistical significance for any particular endpoint.

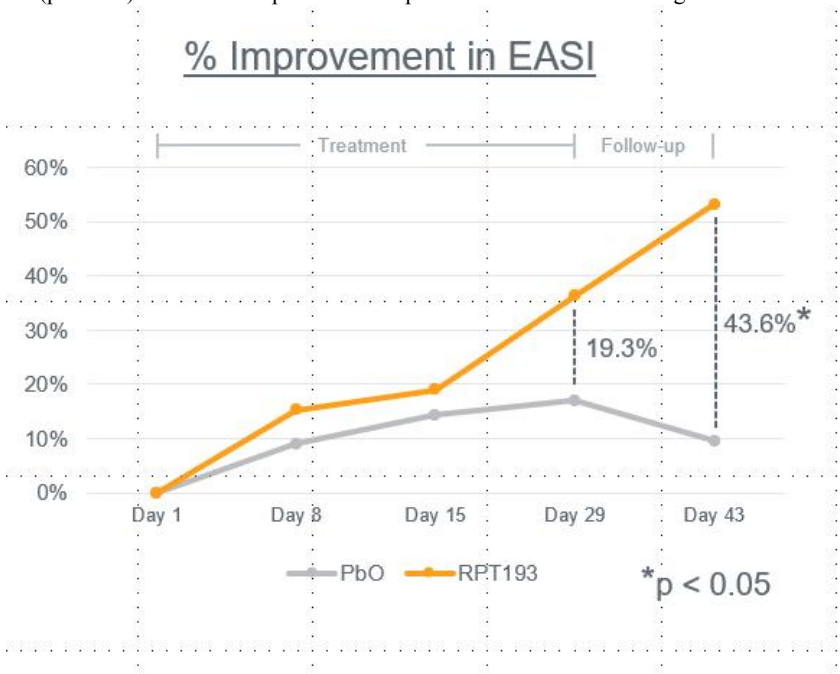
At the end of the four-week treatment period, the zelnecirnon group showed clear improvement in key exploratory efficacy measures compared to placebo, including EASI, vIGA and pruritus Numerical Rating Scale ("NRS").

- Patients treated with zelnecirnon achieved a 36.3% improvement in EASI score from baseline, compared with a 17.0% improvement in patients in the placebo group.
- 42.9% of patients treated with zelnecirnon achieved a 50% improvement in EASI score ("EASI-50"), compared with 10.0% in the placebo group.
- 4.8% of patients treated with zelnecirnon achieved a vIGA score of 0/1 and at least a two-point improvement over baseline, compared with 0.0% in the placebo group.
- 45.0% of patients treated with zelnecirnon achieved at least a four-point reduction in the pruritus NRS score, compared with 22.2% in the placebo group.

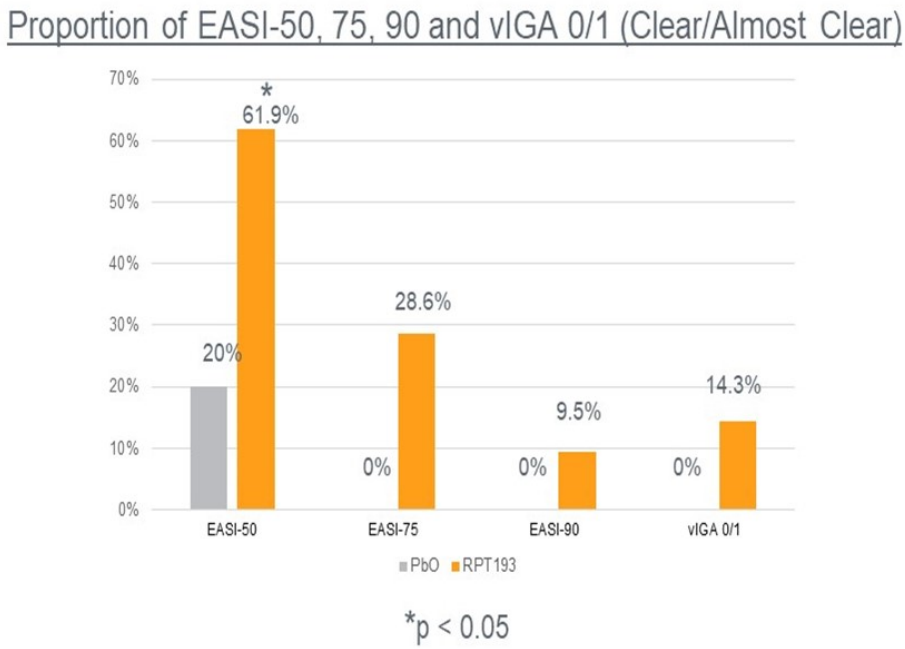
Patients were also evaluated for exploratory endpoints at six weeks, i.e., two weeks after the end of treatment. At the six-week timepoint, patients treated with zelnecirnon showed further improvement in EASI score and vIGA:

- Patients treated with zelnecirnon achieved a 53.2% improvement in EASI score from baseline, compared with a 9.6% improvement in patients in the placebo group.
- 61.9% of patients treated with zelnecirnon achieved EASI-50, compared with 20.0% in the placebo group.
- 14.3% of patients treated with zelnecirnon achieved a vIGA score of 0/1 and at least a two-point improvement over baseline, compared with 0.0% in the placebo group.

Based on exploratory statistical analyses, the difference between zelnecirnon and placebo on the percent change in EASI score was statistically significant at the six-week timepoint ($p < 0.05$). No other endpoints or timepoints achieved statistical significance.



Other measures of clinical effect commonly used in clinical trials for AD include EASI-50, EASI-75 (a 75% improvement in EASI score) and EASI-90 (a 90% improvement in EASI score) as well as vIGA 0/1 (achieving clear or almost clear skin on the vIGA). Data from the Phase 1b trial show that, at the six-week timepoint, the proportion of the zelnecirnon group who achieved EASI-50, EASI-75, EASI-90 and vIGA 0/1 were all greater than the proportion of the placebo group.

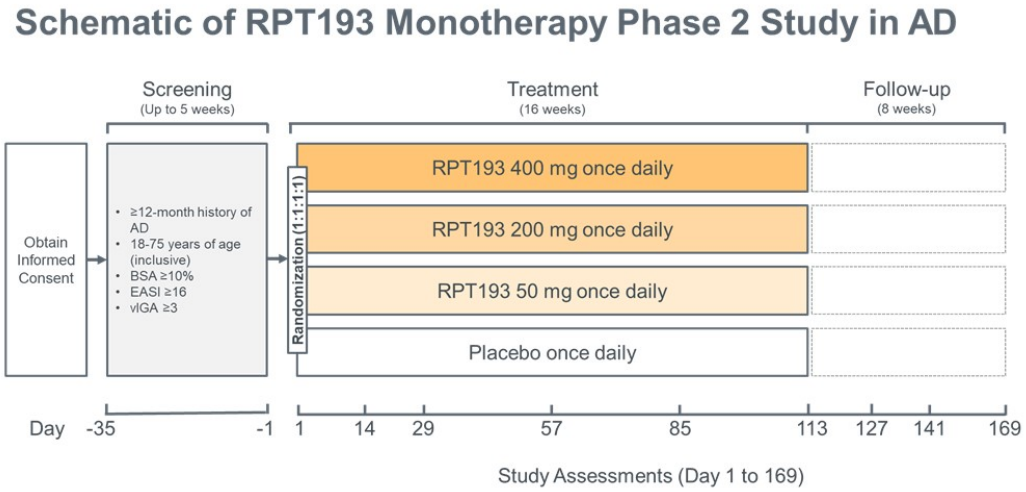


Zelnecirnon was well tolerated in the Phase 1b study. No serious adverse events were reported, and all adverse events reported were mild or moderate in intensity. The overall safety profile of zelnecirnon from the Phase 1a study in healthy volunteers and from the Phase 1b study in patients with moderate-to-severe AD suggest zelnecirnon is a well-tolerated oral drug that would not require any laboratory safety monitoring.

RPT193-02: Phase 2b Clinical Trial in *Atopic Dermatitis*

In May 2022, we initiated a 16-week randomized, double-blind, placebo-controlled Phase 2b clinical trial to further evaluate the efficacy and safety of zelnecirnon as monotherapy in patients with moderate-to-severe AD. The Phase 2b study compares three oral dose levels of zelnecirnon (50, 200 and 400 mg once daily) to placebo with a treatment duration of 16 weeks and will enroll approximately 67 patients in each of the four cohorts (three active and one placebo). The co-primary endpoints for the trial are the percent change in EASI from baseline at week 16 and incidence of treatment emergent adverse events. Key secondary endpoints include the percentage of patients achieving a vIGA score of 0 or 1 at week 16, the percentage of patients achieving EASI-75 at week 16 and the percent change from baseline in the Peak Pruritus Numerical Rating Scale (PP-NRS) from an itch daily e-diary at week 16. Furthermore, given maximum clinical benefit in the four-week Phase 1b trial was observed two weeks after cessation of treatment, patients in the Phase 2b trial will be followed for an additional eight weeks beyond the 16-week treatment period to understand whether sustained responses and/or further improvement in clinical parameters are observed beyond the treatment period.

On February 16, 2024, the FDA verbally notified us that a clinical hold has been placed on our Phase 2b trial of zelnecirnon in AD and our Phase 2a trial in asthma. The clinical hold determination was based on a serious adverse event of liver failure in one patient in the AD trial, the cause of which is currently unknown but has been characterized as potentially related to zelnecirnon. Dosing of zelnecirnon has been halted in both clinical trials, as has enrollment of new trial participants.



Zelnecirnon for Asthma

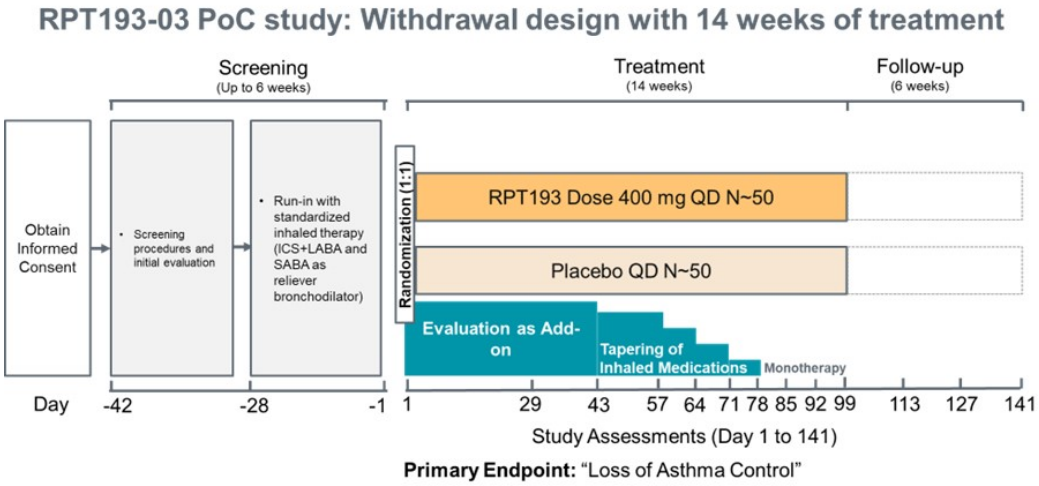
Preclinical Data: Zelnecirnon Efficacy in a Preclinical Model of Allergic Asthma

In a model of allergic asthma induced by the allergen ovalbumin ("OVA"), mice treated with zelnecirnon showed significantly reduced immune cell migration into the lungs and reduced Th2-derived cytokines such as IL-5 and IL-13, which are drivers of the disease. Analysis of bronchoalveolar lavage fluid ("BALF") taken from the lungs of the mice showed 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 zelnecirnon was effective in reducing migration of Th2 cells into the lungs as evidenced by lowered overall allergic inflammation.

We believe the overall activity of zelnecirnon in this OVA-induced asthma model suggests that zelnecirnon, if approved, could fill an unmet medical need for the treatment of allergic disorders and as an orally available therapy, could represent a significant advantage over biologics, which require regular injections.

RPT193-03: Phase 2a Clinical Trial in Asthma

We believe the results from our Phase 1b clinical trial of zelnecirnon in patients with AD provide clinical PoC in AD and potentially additional Th2-driven inflammatory diseases. Similar to patients with AD, patients with asthma are known to have elevated levels of CCL17 in the blood and sputum, and the approvals of dupilumab in both AD and asthma suggest common pathology. We believe zelnecirnon has the potential to fill an unmet need for a safe and efficacious oral therapy for patients with moderate-to-severe asthma.



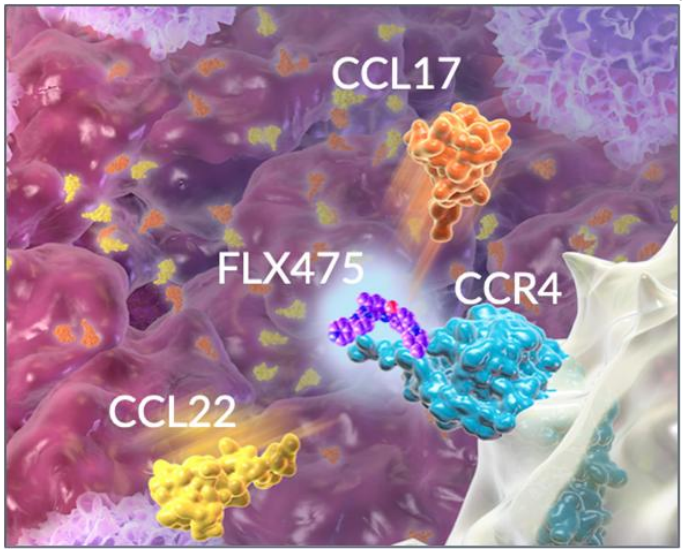
In March 2023, we initiated a 14-week randomized, double-blind, placebo-controlled Phase 2a clinical trial to evaluate the efficacy and safety of zelnecirnon in patients with moderate-to-severe asthma. The Phase 2a study compares one oral dose level of zelnecirnon (400 mg once daily) to placebo with a treatment duration of 14 weeks and will enroll approximately 50 patients in each of the two cohorts (one active and one placebo). The primary endpoint for the trial is the proportion of subjects who meet criteria for a "Loss of Asthma Control" event, defined by changes in lung function, medication usage, or significant clinical change indicating a severe exacerbation. Additional secondary endpoints include assessments of lung function, e.g., change in FEV1 or asthma control, e.g., ACQ-5. On February 16, 2024, the FDA verbally notified us that a clinical hold has been placed on our Phase 2b trial of zelnecirnon in AD and our Phase 2a trial in asthma. The clinical hold determination was based on a serious adverse event of liver failure in one patient in the AD trial, the cause of which is currently unknown but has been characterized as potentially related to zelnecirnon. Dosing of zelnecirnon has been halted in both clinical trials, as has enrollment of new trial participants.

Our Lead Oncology Drug Candidate—Tivumecirnon (FLX-475)

Our lead oncology drug candidate, tivumecirnon, 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. T_{reg} represent a dominant pathway for downregulating the immune response. We are currently focused on developing tivumecirnon in NSCLC, a tumor type that has high levels of T_{reg} and CCR4 ligands, for which we believe there remains significant unmet need.

We own an issued U.S. composition of matter patent directed to tivumecirnon 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 tivumecirnon in the Hanmi Territory.

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



The Role of CCR4 and T_{reg} in Tumors

Our proprietary drug discovery and development engine has identified certain tumors where we believe tivumecirnon has the greatest probability of demonstrating clinical benefit. Tumors with high enrichment for T_{reg} and high levels of CCR4 ligands suggest that the presence of T_{reg} may be interfering with an antitumor response. NSCLC is a tumor type that has high levels of T_{reg} and CCR4 ligands. Additionally, we have discovered that the presence of oncogenic viruses, such as Epstein Barr virus ("EBV") and the human papilloma virus ("HPV"), is associated with tumors such as head and neck squamous cell carcinoma ("HNSCC"), gastric cancer, EBV+ Hodgkin lymphoma ("HL") and non-Hodgkin lymphoma ("NHL"), which also have high levels of T_{reg} and CCR4 ligands and may have a higher probability of responding to tivumecirnon.

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 number of tumor types in which we intend to develop tivumecirnon either as single agent or in combination with anti-PD1 checkpoint inhibitors such as pembrolizumab or other agents.

Non-Small Cell Lung Cancer

NSCLC is the most common type of lung cancer, representing 81% of all lung cancer cases in the United States. Squamous cell carcinoma , adenocarcinoma and large cell carcinoma are all subtypes of NSCLC. Lung cancer is one of the leading causes of cancer death for both men and women, with an estimated 127,070 deaths in the United States from lung cancer in 2023. There are approximately 238,000 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 28%.

Standard therapies include surgery, chemotherapy and radiation therapy. Up to a third of NSCLC patients have tumors with mutations in genes, *e.g.,* epidermal growth factor receptor and anaplastic lymphoma kinase, for which molecularly targeted therapies have been approved, *e.g.,* 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). Treatment with these anti-PD1 agents in NSCLC has resulted in promising activity ranging from approximately 15-30% overall response rates (with the higher response rates in tumors expressing higher levels of PD-L1) 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.

Head and Neck Squamous Cell Carcinoma

HNSCC represents 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 3% of all cancers in the United States with an estimated 54,000 new cases and 11,580 deaths in 2023. The five-year survival rate for people with head and neck cancer is 68.5%. Most cases of HNSCC are considered to be related to use of tobacco or alcohol or to 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.

Hodgkin Lymphoma

HL, 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 8,800 people in the United States were estimated to be diagnosed with HL in 2023, with an estimated 900 deaths. EBV has been associated with approximately 30- 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 has been approved for certain adult patients with classical HL ("cHL"). Nivolumab and pembrolizumab are anti-PD1 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 80,500 patients were diagnosed with NHL in 2023 and 20,180 patients died as a result of NHL in 2023. The five-year survival rate is 74.3%. 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, anti-PD1 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 anywhere from less than 10% to greater than 90%, or approximately 12% of NHL, on average.

Our Oncology Solution: Tivumecirnon

Tivumecirnon is an oral small molecule 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. T_{reg} represent a dominant pathway for downregulating the immune response. Many current approaches to deplete T_{reg} in the tumor have resulted in systemic T_{reg} depletion, and such approaches been associated with serious safety issues, such as autoimmunity. In addition, these approaches have been associated with the depletion of effector immune cells, which has the potential to limit their efficacy.

We are currently focused on developing tivumecirnon in NSCLC, a tumor type with high levels of T_{reg} and CCR4 ligands, for which there remains significant unmet medical need.

Tivumecirnon Preclinical Data

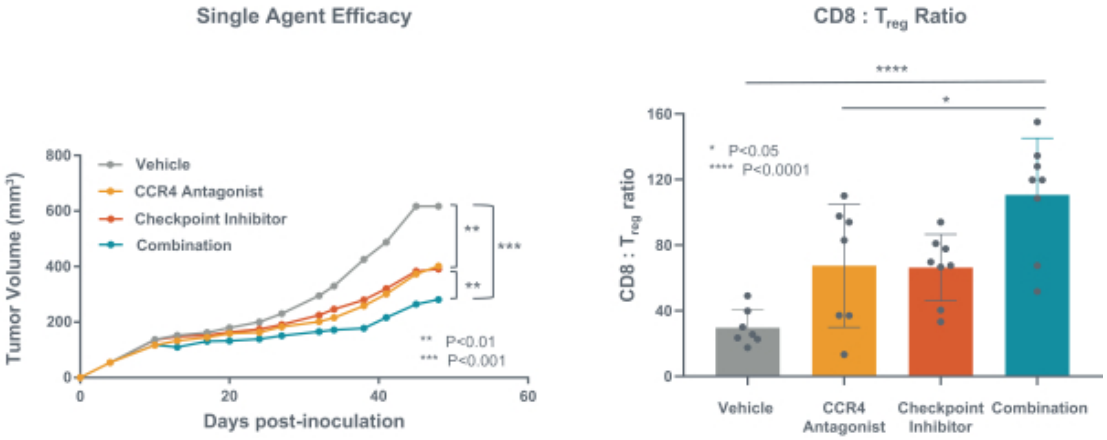
In preclinical studies, our drug candidate appears to selectively restore the immune response within the tumor microenvironment ("TME") without systemically depleting T cells. We believe tivumecirnon has attractive characteristics for use as a single agent and in combination regimens with a variety of both conventional and immune-based therapies given its favorable safety profile observed in preclinical studies and early-stage clinical studies, as well as the synergistic nature of its mechanism of action as demonstrated in preclinical mouse models.

We evaluated the mechanism of action as well as the antitumor activity of tivumecirnon (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.

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

The antitumor activity of a CCR4 antagonist closely related to tivumecirnon was assessed in the Pan02 mouse tumor model. Oral administration of the CCR4 antagonist demonstrated single agent reduction in tumor growth, which was statistically significantly different from mice who received vehicle control ($p < 0.05$) and observed antitumor activity was similar to an immune checkpoint inhibitor. Importantly, the combination of our CCR4 antagonist with the checkpoint inhibitor resulted in enhanced antitumor activity. Analysis of the TME in mice 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. As with the antitumor activity, the combination of our CCR4 antagonist with the immune checkpoint inhibitor further increased the CD8 : T_{reg} ratio. The increase of the CD8 : T_{reg} ratio demonstrates a shift from an immune-suppressive to an immune-stimulatory environment. This ratio is a well-established biomarker in human clinical trials and has been demonstrated to correlate with clinical outcome.

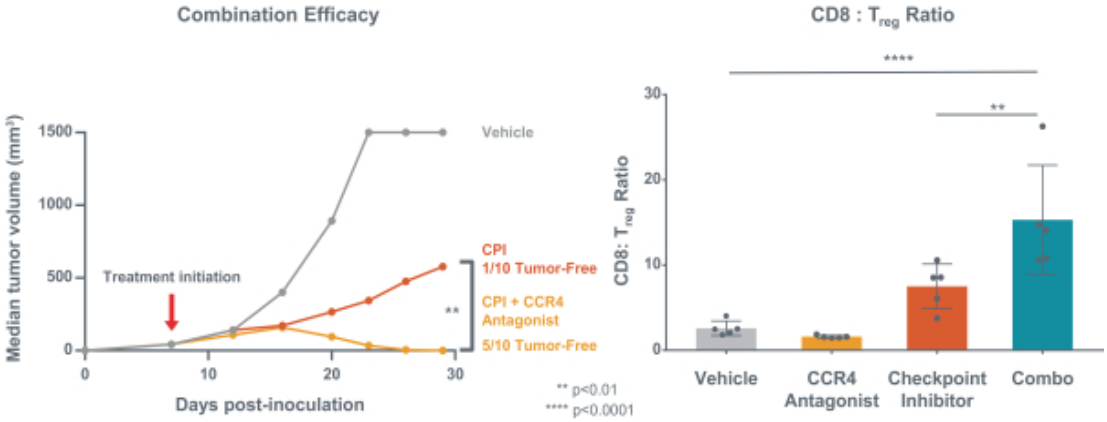
CCR4 Antagonist: Single Agent Activity in a Mouse Model of a Charged Tumor



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 tivumecirnon in combination with a checkpoint inhibitor was evaluated in the CT26 mouse tumor model. Single-agent activity of a checkpoint inhibitor resulted in modest antitumor activity and almost no cures. However, the combination of a CCR4 antagonist and a checkpoint inhibitor resulted in statistically significant ($p < 0.05$) synergistic antitumor activity with 50% of all mice showing complete tumor regression in the experiment shown. In multiple experiments, an average of 39% experienced tumor regression. 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. In our mouse studies, the combination of a CCR4 antagonist with a checkpoint inhibitor demonstrated an increase in the ratio of effector T cells to T_{reg}. Previous studies have shown that this ratio is an indicator of prognosis in many cancers, including 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 tivumecirnon 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



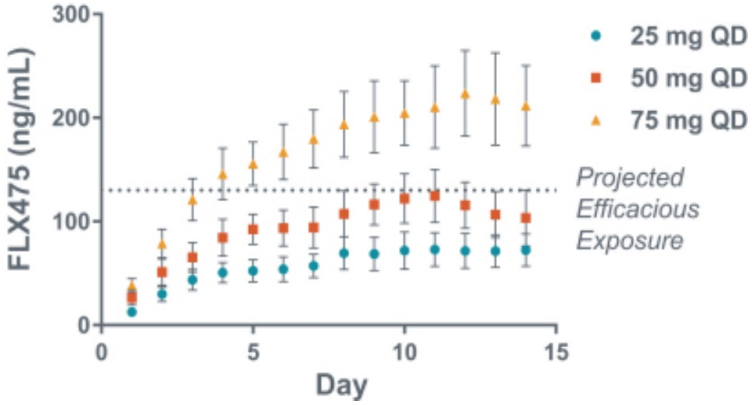
Tivumecirnon: Clinical Trials

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

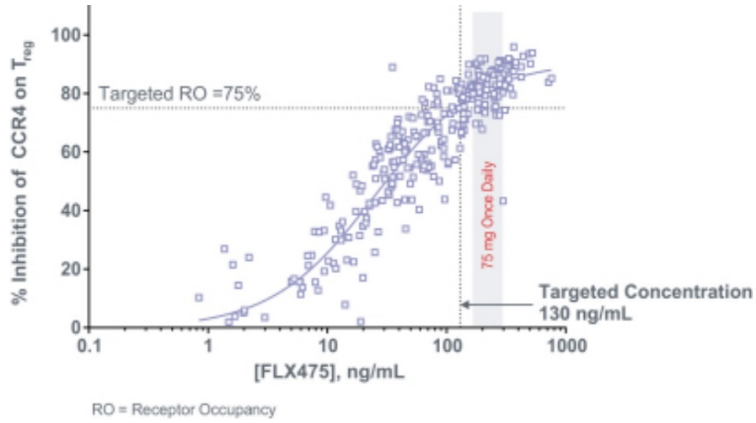
We completed a placebo-controlled, double-blind dose-escalation Phase 1 clinical trial of tivumecirnon in 104 healthy volunteers. In this Phase 1 study, tivumecirnon was well tolerated and demonstrated dose-dependent inhibition of CCR4 with no observed immune-related adverse events or significant clinical adverse events.

Oral dosing of tivumecirnon led to linear pharmacokinetics 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.

Tivumecirnon: Favorable Exposure in Healthy Volunteer Study



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



Tivumecirnon 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. 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 tivumecirnon 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 Tivumecirnon Alone and in Combination with Pembrolizumab in Advanced Cancer

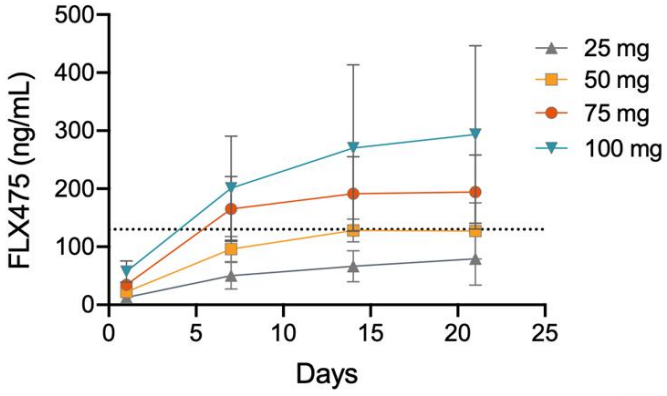
We are conducting a Phase 1/2 trial of tivumecirnon as monotherapy and in combination with pembrolizumab and are currently in the Phase 2 portion of the study.

The Phase 1 portion of the study was a standard dose escalation study intended primarily to evaluate safety, pharmacokinetics and pharmacodynamics in patients with multiple tumor types including some that may be charged.

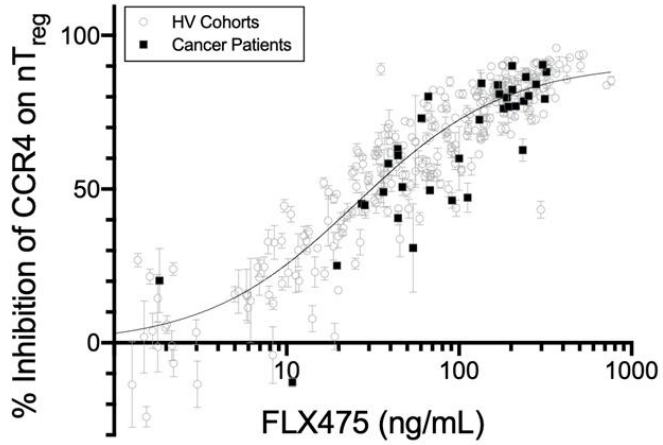
We reported results from the Phase 1 portion in November 2020. A total of 37 patients with cancers of different types were enrolled. Nineteen patients were treated with one of four doses (25 mg, 50 mg, 75 mg or 100 mg once daily) of tivumecirnon monotherapy and 18 were treated with one of three doses (50 mg, 75 mg or 100 mg once daily) of tivumecirnon in combination with the standard dose of pembrolizumab. The Phase 1 results showed tivumecirnon had a favorable safety profile, with no maximum tolerated dose reached. Two dose-limiting toxicities ("DLTs") of asymptomatic QTc prolongation were observed in the monotherapy cohorts, one in the 75 mg cohort and one in the 100 mg cohort. No DLTs were observed in the Phase 1 combination cohorts. Based on the Phase 1 data, 100 mg was selected as the recommended Phase 2 dose for both the monotherapy and combination therapy cohorts.

Drug exposures were roughly dose-proportional and consistent with the previous Phase 1 study in healthy volunteers. The majority of patients on the 75 mg daily dose reached the targeted exposure level. Receptor occupancy of CCR4 on T_{reg} was also proportional to tivumecirnon exposure levels and consistent with that previously observed in healthy volunteers.

Tivumecirnon Phase 1 Pharmacokinetic Data



Tivumecirnon Phase 1 Receptor Occupancy Data



In the Phase 1 portion of the trial, of 17 evaluable monotherapy patients, there was one unconfirmed partial response in a patient with relapsed metastatic cervical cancer. Of 14 evaluable patients in the combination cohorts, there were two confirmed partial responses: a patient with NSCLC who had progressed on prior anti-PD1 checkpoint treatment (atezolizumab) and who at the time of disclosure was on study for 18 months of treatment, and a patient with checkpoint inhibitor-naïve urothelial cancer who at the time of disclosure was on study for over nine months of treatment.

The Phase 2 portion of the Phase 1/2 trial is designed to evaluate tivumecirnon as monotherapy and in combination with pembrolizumab in patients with several cancer types we believe are most likely to respond to tivumecirnon. The Phase 2 study is a gated two-stage design. In Stage 1, cohorts of at least ten patients each were dosed with tivumecirnon as monotherapy (100 mg once daily) or in combination with pembrolizumab (100 mg once daily and a standard regimen of pembrolizumab). Cohorts in which promising activity is observed would then proceed to Stage 2 to enroll an additional 19 patients. The Phase 2 portion of the trial originally started with eight cohorts in total: four monotherapy cohorts with patients with either NPC, lymphoma confirmed to be EBV+, cervical cancer that is HPV^+ or HNSCC that is naïve to checkpoint therapy, and four combination cohorts with NSCLC or HNSCC patients who have been previously treated with checkpoint inhibitors or patients with TNBC or HNSCC that is naïve to checkpoint inhibitors. We subsequently added a Stage 1 combination cohort in patients with NSCLC that is naïve to checkpoint therapy.

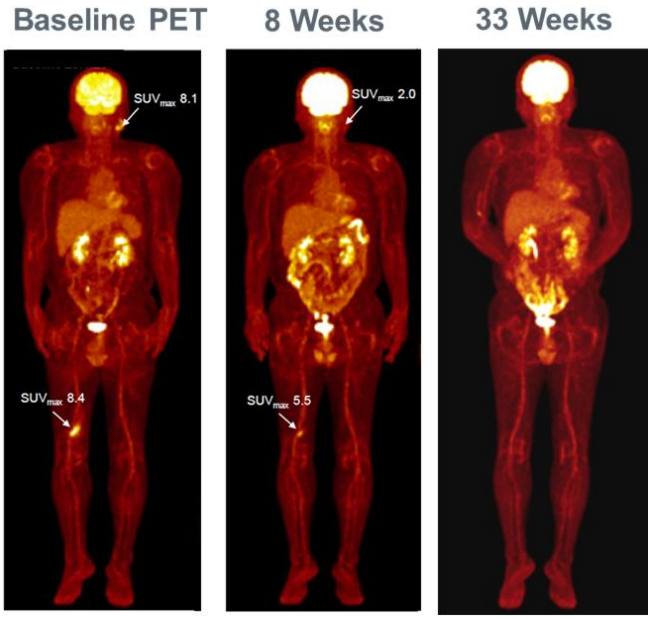
As of February 2024, we have three ongoing expanded Stage 2 cohorts: EBV+ lymphoma (monotherapy), CPI-naïve NSCLC (combination) and CPI-experienced HNSCC (combination).

EBV+ Lymphoma

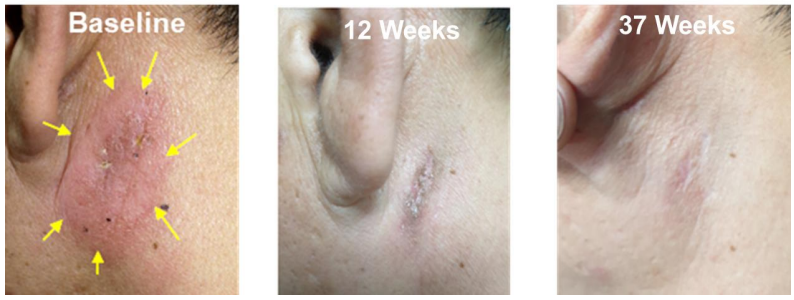
In November 2020, we reported that early data from the first two patients with EBV+ lymphoma treated with tivumecirnon monotherapy show significant target tumor reduction, including one patient who achieved a durable complete metabolic response and was on study for more than nine months as of November 2020. We decided to expand the EBV+ lymphoma monotherapy cohort to Stage 2.

Below are images of the screening and on-study positron emission tomography ("PET") scans from the patient who achieved a complete metabolic response. The patient is a 53-year-old with EBV+ NK/T cell lymphoma, previously treated with chemotherapy followed by progression of disease. Primary lesions noted behind the left ear and in the right thigh (bright signals in brain, kidneys and bladder are normal background) showed significant decrease in signal by 8 weeks of treatment with tivumecirnon, consistent with complete metabolic response, which continued to improve by scan shown at 33 weeks on study. Photographs of the subcutaneous lesion behind the left ear also show significant clinical improvement and visible resolution over the course of treatment.

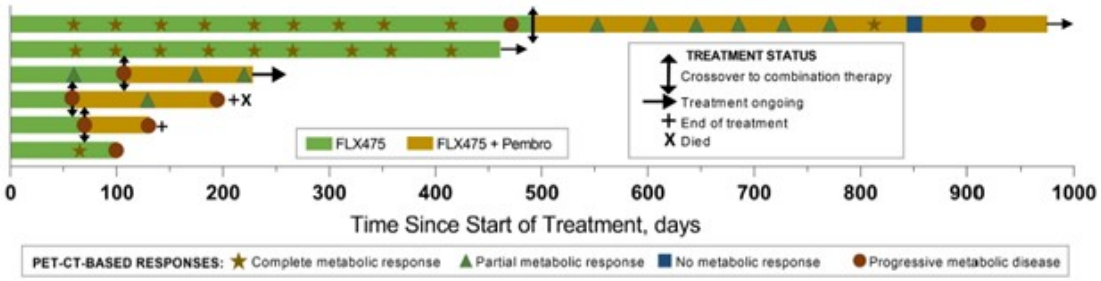
Tivumecirnon Phase 2 EBV+ Lymphoma Patient PET Scans



Tivumecirnon Phase 2 EBV+ Lymphoma Patient: Change in Subcutaneous Lesion



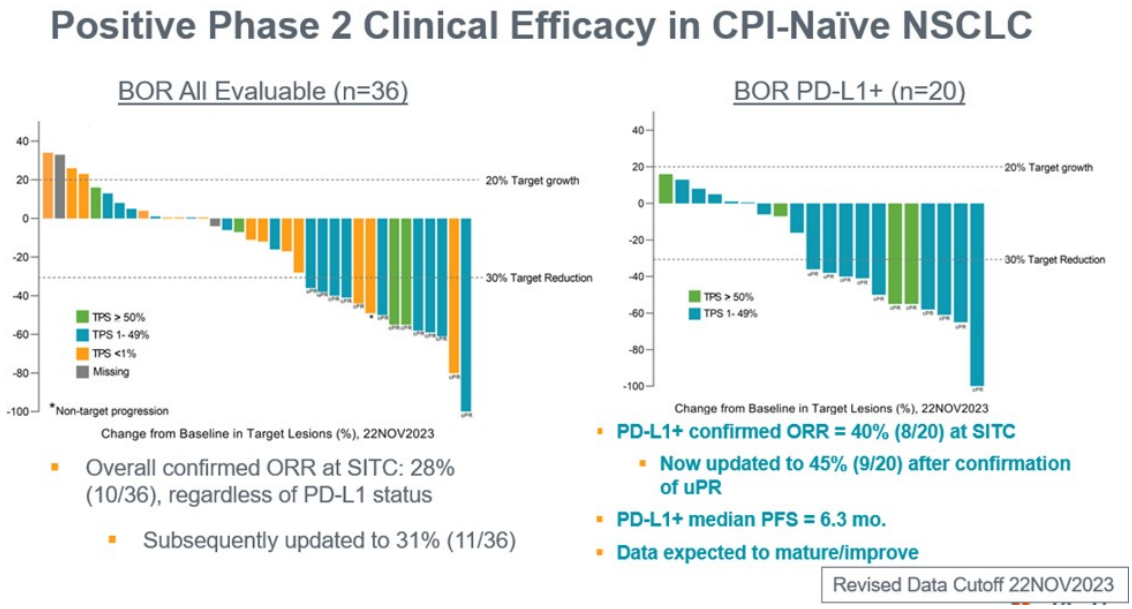
In December 2022, we reported updated data from the six patients with EBV+ NK/T cell lymphoma treated with tivumecirnon monotherapy in the EBV+ lymphoma cohort. Of these six patients, there were four responses, with two durable complete metabolic responses (CMR), one unconfirmed CMR and one unconfirmed partial metabolic response. As of February 2024, this cohort is still ongoing.



Checkpoint Inhibitor-Naive Non-Small Cell Lung Cancer

In November 2023, we reported data from the combined Stage 1 and 2 cohort of patients with CPI-naïve NSCLC treated with the combination of tivumecirnon and the anti-PD1 checkpoint-inhibitor pembrolizumab. In this cohort of NSCLC patients, 36 patients were evaluable for efficacy, of which 20 were PD-L1 positive. In these PD-L1 positive patients, the combination of tivumecirnon and pembrolizumab showed a 45% (9/20) confirmed ORR and a median PFS of 6.3 months as of the data cutoff date, with seven patients continuing on study. For comparison, historical pembrolizumab monotherapy activity in checkpoint inhibitor-naïve and previously treated NSCLC patients showed a confirmed ORR of 18% and a median PFS of 4.0 months. The confirmed ORRs for the combination of tivumecirnon and pembrolizumab in the PD-L1 low and high subsets were 44% (7/16) and 50% (2/4), respectively. For comparison, the ORR for pembrolizumab monotherapy in the PD-L1 low and high subsets has been previously reported as 10% and 30%, respectively.

The combination of tivumecirnon and pembrolizumab was well tolerated in this Phase 2 NSCLC cohort. The most common treatment-emergent adverse event deemed related to study treatment was QT prolongation that was asymptomatic and reversible.



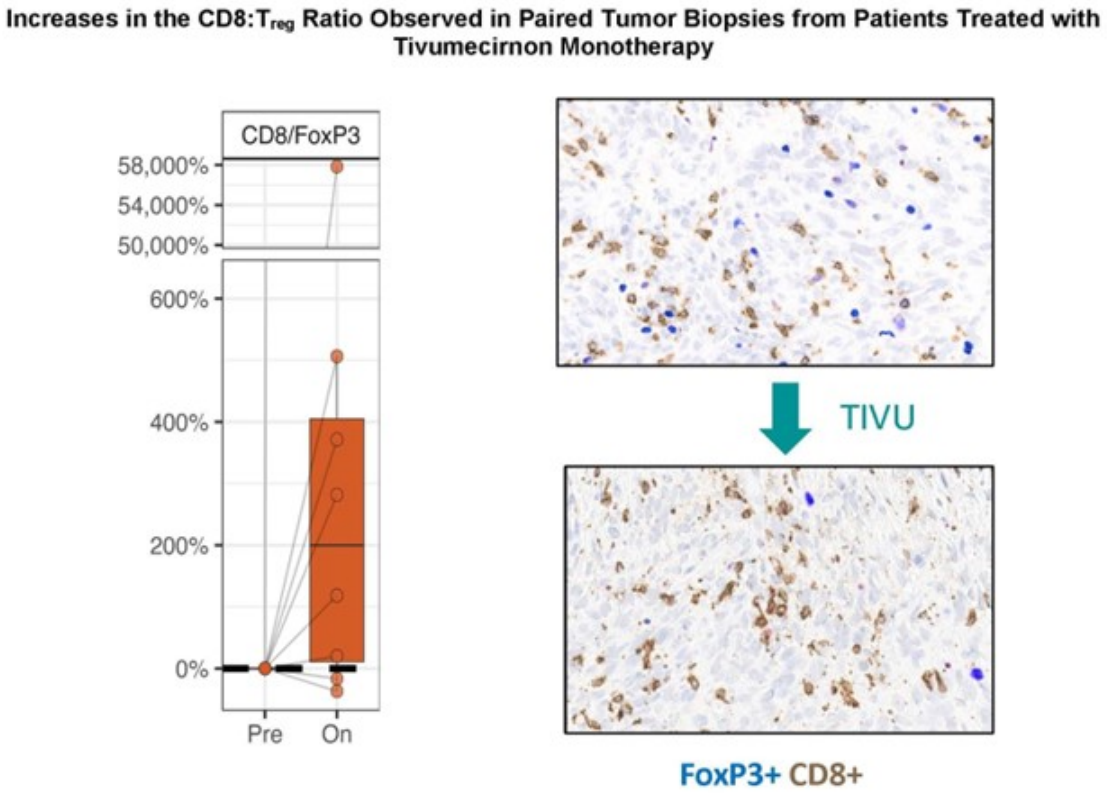
Safety Data from Phase 1/2 Study

As of December 2023, we have reported cumulative safety data on all Phase 1 patients and the Phase 2 NK/T cell lymphoma and CPI-naïve NSCLC patients reported above, which include a total of 25 patients treated with tivumecirnon monotherapy and 40 patients treated with tivumecirnon in combination with pembrolizumab. Tivumecirnon demonstrated a favorable safety profile with once-daily oral dosing both as monotherapy and in combination with pembrolizumab, with no new significant safety findings compared to those previously reported in healthy volunteers and in patients from the Phase 1 portion of the trial. As of February 2024, tivumecirnon has been dosed in more than 300 patients with various advanced cancers and has been generally well tolerated, and the combination with pembrolizumab has not increased immune-related toxicity beyond that expected with pembrolizumab alone. For more information regarding the risks associated with our Phase 1/2 clinical trial for tivumecirnon, please see "Risk Factors—Risks Related to Our Business—zelnecirnon and tivumecirnon are in clinical development, which may fail or suffer delays that materially and adversely affect their commercial viability."

Biomarker Data from Phase 1/2 Study

Biomarker data obtained from the patients in the ongoing 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 tivumecirnon 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 the CD8:T_{reg} ratio as detected by immunohistochemistry or transcriptomics, and exploratory analyses including immune phenotyping, T cell clonality and peripheral blood analysis for CCL17 and CCL22. Preliminary data from our measure of CD8 and T_{reg} by IHC indicate an increase in the CD8:T_{reg} ratio in the majority of monotherapy patients with paired tumor biopsies from both the Phase 1 and Phase 2 portions of the ongoing Phase 1/2 trial. This suggests activity consistent with our intended mechanism of action and potentially beneficial changes in the TME. Analysis of transcriptomic data from biopsies obtained from CPI-naïve patients prior to treatment suggest that higher levels of T_{reg} at baseline correlate with improved response. Analysis of T_{reg} in peripheral blood of patients prior to treatment indicate that subjects with lower levels had better progression-free survival than those with higher levels. Both of these findings are consistent with our T_{reg}-focused mechanism of action and contrasted with reported data for pembrolizumab, suggesting specificity for tivumecirnon. These observations will require further validation in subsequent studies. For more information regarding the risks

associated with our Phase 1/2 clinical trial for tivumecirnon, please see "Risk Factors—Risks Related to Our Business."



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, 2023, our patent portfolio includes ten patent families directed to CCR4 inhibiting compounds and their therapeutic uses, three of which are directed to tivumecirnon and three of which are directed to zelnecirnon, as discussed in more depth below.

Tivumecirnon

As of December 31, 2023, we own two issued U.S. patents directed to tivumecirnon 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 patent application in the U.S. and four corresponding pending patent applications in Brazil, Canada, Israel and Japan; and 35 corresponding issued patents in Australia, China, Hong Kong, 23 countries through the European Patent Convention, India, Japan, South Korea, Macao, Mexico, New Zealand, Singapore, South Africa and Taiwan. Our issued U.S. patents, 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 U.S. patent application, one corresponding issued patent in South Africa and 14 corresponding pending patent applications in Australia, Brazil, Canada, China, Hong Kong, the European Patent Convention, India, Israel, Japan, South Korea, Mexico, New Zealand, Singapore and Taiwan directed to polymorphic forms of tivumecirnon and formulations thereof. Any patents that may issue from these pending applications, in the United States and worldwide, are scheduled to expire in 2040, excluding any additional term for patent term adjustment(s) or extension(s).

In addition to the composition of matter patents and patent applications described above, as of December 31, 2023, we own one issued U.S. patent, two corresponding patents issued in New Zealand and South Africa, and 13 corresponding pending patent applications in Australia, Brazil, Canada, China, Hong Kong, the European Patent Convention, Israel, Japan, South Korea, Mexico, New Zealand, Singapore, and Taiwan, all directed to the use of CCR4 antagonists generally, including tivumecirnon 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.)

All of the above-mentioned patents and applications remain in force subject to us making timely payment of all applicable maintenance and annuity fees.

Zelnecirnon

As of December 31, 2023, we own three granted U.S. patents, four corresponding patents issued in Australia, India, Israel and South Africa, one corresponding pending patent application in the U.S. and 11 corresponding pending patent applications in Brazil, Canada, China, the European Patent Convention, Hong Kong, Japan, South Korea, Mexico, New Zealand, Singapore and Taiwan, all directed to zelnecirnon 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 payment of all applicable maintenance and annuity fees.

We also own one pending U.S. patent application and 13 corresponding pending patent applications in Australia, Brazil, Canada, China, the European Patent Convention, Japan, Israel, India, South Korea, Mexico, New Zealand, South Africa and Taiwan directed to methods of making trans isomeric forms of zelnecirnon and its analogs. Any patents that may issue from these pending applications, in the United States and worldwide, are scheduled to expire in 2042, excluding any additional term for patent term adjustment(s) or extension(s), and assuming payment of all applicable maintenance and annuity fees

We also own one pending U.S. provisional patent application directed to polymorphic forms of zelnecirnon. Any patents that may issue from this pending application, should it be timely converted to a non-provisional application in the United States and/or filed worldwide, would be scheduled to expire in 2044, excluding any additional term for patent term adjustment(s) or extension(s), and assuming payment of all applicable maintenance and annuity fees.

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 tivumecirnon 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 received $10.0 million in an upfront payment and milestone payment, 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 tivumecirnon 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 tivumecirnon 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 tivumecirnon for human cancers, Hanmi will have the right to participate in such trials in the Hanmi Territory. We will supply tivumecirnon 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 tivumecirnon 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 tivumecirnon and related products, if we do not consent to Hanmi's use of tivumecirnon 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 tivumecirnon and related products, material breach or insolvency, Hanmi will retain a perpetual license to certain our intellectual property related to tivumecirnon.

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 tivumecirnon as monotherapy and in combination with pembrolizumab (KEYTRUDA®), Merck's anti-PD-1 therapy, in patients with advanced cancers. In March 2022 and February 2024, we and Merck amended the agreement to provide for additional supply of pembrolizumab. We are the sponsor of the clinical trial and are responsible for the costs of conducting it, and Merck will supply pembrolizumab 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 tivumecirnon used in the clinical trial and we will own the quantities of pembrolizumab 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 pembrolizumab 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 tivumecirnon, clinical data resulting from the use of tivumecirnon as 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 pembrolizumab that are reasonably requested by Merck to address any concern raised by Merck that pembrolizumab 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.

Zelnecirnon is a CCR4 antagonist intended to treat inflammatory disease, including AD and other inflammatory diseases. If approved for AD, we will face branded competition from dupilumab, a biologic approved in 2017, as well as tralokinumab and lebrikizumab. In addition, there are several companies developing treatments that may be approved for AD including large pharmaceutical and biotechnology companies such as Pfizer, Sanofi, Amgen, GSK, Lilly, Incyte, AbbVie and LEO Pharma.

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

If approved, tivumecirnon 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 Tusk/Roche and Agenus/Gilead.

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

Our business activities are subject to various laws, rules and regulations of the United States as well as of foreign governments. Compliance with existing or future governmental regulations, including, but not limited to, those pertaining to product development and approval, business acquisitions, healthcare, consumer and data protection, employee health and safety and taxes, could have a material impact on our business. Refer to the sections captioned “Risk Factors” under Part I, Item IA and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” under Part II, Item 7 for a discussion of these potential impacts.

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 Investigational New Drug application ("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 a New Drug Application ("NDA") after completion of all pivotal clinical trials;
- 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 Advisory Committee review, if applicable;
- 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 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 the 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 several 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 a 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 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, which 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 a 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. Clinical Trials Regulation 536/2014 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 27 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.

Data Privacy and Security

In the ordinary course of business, we collect, receive, store, process, generate, use, transfer, disclose, make accessible, protect, secure, dispose of, transmit and share (collectively, process) personal data, such as clinical trial data and other health data. Accordingly, we may be subject to numerous data privacy and security obligations, including federal, state, local and foreign laws, regulations, guidance, industry standards, external and internal privacy and security policies, contractual requirements and other obligations related to data privacy and security.

These frameworks are evolving and may impose potentially conflicting obligations. Such obligations may include, without limitation, the Federal Trade Commission Act, the California Consumer Privacy Act of 2018, as amended by the California Privacy Rights Act of 2020 ("CPRA") (collectively, "CCPA"), the European Union's General Data Protection Regulation ("EU GDPR") and the United Kingdom's GDPR ("UK GDPR") (collectively, GDPR), Australia's Privacy Act, data breach notification laws and other similar laws (e.g., wiretapping laws). Further, the federal Health Insurance Portability and Accountability Act of 1996 ("HIPAA"), as amended by the Health Information Technology for Economic and Clinical Health Act ("HITECH"), imposes specific requirements relating to the privacy, security and transmission of individually identifiable health information. In addition, several U.S. states, such as Virginia, Colorado, Connecticut and Utah, have enacted comprehensive data privacy laws, and similar laws are being considered at the federal, state and local levels.

We may also be subject to privacy regimes in other jurisdictions in Asia, including the Personal Information Protection Act ("PIPA") in the Republic of Korea, Taiwan's Personal Data Protection Act ("PDPA"), Thailand's Personal Data Protection Act ("TPDPA") and Hong Kong's Personal Data Privacy Ordinance ("PDPO").

The GDPR and CCPA are examples of the increasingly stringent and evolving regulatory frameworks related to personal data processing that may increase our compliance obligations and exposure for any noncompliance. European data privacy and security laws (including the GDPR) impose significant and complex compliance obligations on companies that are subject to those laws, notably with respect to the processing of health-related data from EEA or UK-based individuals. Additionally, the CCPA applies to personal data of consumers, business representatives and employees who are California residents, and requires businesses to provide specific disclosures in privacy notices and honor requests of such individuals to exercise certain privacy rights. The CCPA provides for fines of up to $7,500 per intentional violation and allows private litigants affected by certain data breaches to recover significant statutory damages.

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. Even if favorable coverage and reimbursement status is attained for our drug candidates, once approved, less favorable coverage policies and reimbursement rates may be implemented in the future.

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 there have been, and continue to be, proposals by the federal government, state governments, regulators and third-party payors to control or manage the increased costs of healthcare and, more generally, to reform the U.S. healthcare system. The biopharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives For example, in March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act (“ACA”) was enacted, which was intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, enhance remedies against fraud and abuse, add new transparency requirements for the healthcare and health insurance industries, impose new taxes and fees on the health industry and impose additional health policy reforms, and substantially changed the way healthcare is financed by both governmental and private insurers and significantly impacts the U.S. pharmaceutical industry.

There have been executive, judicial and Congressional efforts to modify, repeal or otherwise invalidate all, or certain provisions of, the ACA. For example, on June 17, 2021 the U.S. Supreme Court dismissed a challenge on procedural grounds that argued the ACA is unconstitutional in its entirety because the "individual mandate" was repealed by Congress. Further, prior to the U.S. Supreme Court ruling, on January 28, 2021, President Biden issued an executive order to initiate a special enrollment for purposes of obtaining health insurance coverage through the ACA marketplace. The executive order also instructs certain governmental agencies to review and reconsider their existing policies and rules that limit access to healthcare, including among others, reexamining Medicaid demonstration projects and waiver programs that include work requirements, and policies that create unnecessary barriers to obtaining access to health insurance coverage through Medicaid or the ACA. On August 16, 2022, President Biden signed the Inflation Reduction Act of 2022 ("IRA"), into law, which, among other things, extends enhanced subsidies for individuals purchasing health insurance coverage in ACA marketplaces through plan year 2025. The IRA also eliminates the "donut hole" under the Medicare Part D program beginning in 2025 by significantly lowering the beneficiary maximum out-of-pocket cost and creating a new manufacturer discount program. It is unclear how any future challenges and the healthcare reform measures of the Biden administration will impact the ACA.

In addition, other legislative changes have been proposed and adopted in the United States since the ACA was enacted to reduce healthcare expenditures. The Budget Control Act of 2011 among other things, created measures for spending reductions by Congress, including aggregate reductions of Medicare payments to providers of 2% per fiscal year. These reductions went into effect on April 1, 2013 and will remain in effect until 2031 unless additional Congressional action is taken. Moreover, on January 2, 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, further reduced Medicare payments to several types of providers, including hospitals, imaging centers and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

Recently there has been heightened governmental scrutiny over the manner in which biopharmaceutical 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. At the federal level, in July 2021, the Biden administration released an executive order, "Promoting Competition in the American Economy," with multiple provisions aimed at prescription drugs. In response to Biden's executive order, on September 9, 2021, the U.S. Department of Health and Human Services ("HHS"), released a Comprehensive Plan for Addressing High Drug Prices that outlines principles for drug pricing reform and sets out a variety of potential legislative policies that Congress could pursue to advance these principles. In addition, the IRA, among other things, (i) directs HHS to negotiate the price of certain high-expenditure, single-source drugs and biologics covered under Medicare, and subjects drug manufacturers to civil monetary penalties and a potential excise tax by offering a price that is not equal to or less than the negotiated "maximum fair price" for such drugs and biologics under the law, and (ii) imposes rebates with respect to certain drugs and biologics covered under Medicare Part B or Medicare Part D to penalize price increases that outpace inflation. The IRA permits HHS to implement many of these provisions through guidance, as opposed to regulation, for the initial years. These provisions take effect progressively starting in fiscal year 2023. On August 29, 2023, HHS announced the list of the first ten drugs that will be subject to price negotiations, although the Medicare drug price negotiation program is currently subject to legal challenges. It is unclear how the IRA will be implemented but is likely to have a significant impact on the pharmaceutical industry. In response to the Biden administration's October 2022 executive order, on February 14, 2023, HHS released a report outlining three new models for testing by the Centers for Medicare & Medicaid Services ("CMS") Innovation Center which will be evaluated on their ability to lower the cost of drugs, promote accessibility and improve quality of care. It is unclear whether the models will be utilized in any health reform measures in the future. Further, on December 7, 2023, the Biden administration announced an initiative to control the price of prescription drugs through the use of march-in rights under the Bayh-Dole Act. On December 8, 2023, the National Institute of Standards and Technology published for comment a Draft Interagency Guidance Framework for Considering the Exercise of March-In Rights that, for the first time includes the price of a product as one factor an agency can use when deciding to exercise march-in rights. While the government has not previously exercised march-in rights, it is uncertain if that will change under the new framework. At the state level, legislatures are increasingly passing legislation and implementing regulations designed (i) 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 (ii) to encourage importation from other countries and bulk purchasing. For example, on January 5, 2024, the FDA approved Florida's Section 804 Importation Program ("SIP") proposal to import certain drugs from Canada for specific state healthcare programs. It is unclear how this program will be implemented, including which drugs will be chosen, and whether it will be subject to legal challenges in the United States or Canada. Other states have also submitted SIP proposals that are pending review by the FDA. Any such approved importation plans, when implemented, may result in lower drug prices for products covered by those programs.

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.

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.

HIPAA, as amended by HITECH, imposes obligations on certain covered entity healthcare providers, health plans and healthcare clearinghouses as well as their business associates and subcontractors 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. It also requires notification to affected individuals and regulatory authorities of certain breaches of security of individually identifiable health information

There has also been a recent trend of increased federal and state regulation of payments and other transfers of value made to physicians and other healthcare providers. The ACA, through the Physician Payments Sunshine Act, imposed new reporting requirements on drug manufacturers for payments and other transfers of value made by them to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors), other healthcare professionals (such as physicians assistants and nurse practitioners) 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.

If our operations are found to be in violation of any of the federal and state laws described above or any other governmental regulations that apply to us, we may be subject to significant civil, criminal, and administrative penalties, including, without limitation, damages, fines, imprisonment, disgorgement, exclusion from participation in government healthcare programs, additional reporting obligations and oversight obligations, and the curtailment or restructuring of our operations.

Human Capital Resources

In order to achieve our goals and expectations, it is crucial that we continue to attract and retain top talent. To facilitate talent attraction and retention, we strive to make our Company a safe and rewarding workplace, with opportunities for our employees to grow and develop in their careers, supported by strong compensation, benefits and health and wellness programs, and by programs that build connections among our employees.

As of December 31, 2023, we had 131 employees, including 101 in research and development and 30 in general and administrative functions. As of December 31, 2023, 42 of our full-time employees had completed a Ph.D. or other advanced science or medical degree. We believe our employee relations are good.

The success of our business is fundamentally connected to the well-being of our employees. Accordingly, we are committed to their health, safety and wellness. We provide our employees and their families with access to a variety of innovative, flexible and convenient health and wellness programs, including benefits that provide protection and security so they can have peace of mind concerning events that may require time away from work or that impact their financial well-being; that support their physical and mental health by providing tools and resources to help them improve or maintain their health status and encourage engagement in healthy behaviors; and that offer choice where possible so they can customize their benefits to meet their needs and the needs of their families.

We provide robust compensation and benefits programs to help meet the needs of our employees. In addition to salaries, these programs include competitive compensation packages, a 401(k) plan, healthcare and insurance benefits and family leave, among others.

Corporate Information

We were incorporated under the laws of the state of Delaware in March 2015 under the name FLX Bio, Inc. In May 2019, we changed our name to RAPT Therapeutics, Inc. Our principal executive offices are located at 561 Eccles Avenue, South San Francisco, CA 94080. Our website address is www.rapt.com. Information contained on, or that can be accessed through, our website is not incorporated by reference into this report.

Item 1A. Risk Factors.

Our business and investing in our common stock involve 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 a case, the market price of our common stock could decline and you may lose all or part of your original investment. 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 therapeutics 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.

Since our inception, we have devoted substantially all of our resources to research and development, including our drug discovery and development engine, preclinical studies and clinical trials; raising capital; building our management team; and developing and maintaining our intellectual property portfolio. Our net loss was $116.8 million and $83.8 million for the years ended December 31, 2023 and 2022, respectively. As of December 31, 2023, we had an accumulated deficit of $484.7 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. 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, zelnecirnon and tivumecirnon. 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.

Zelnecirnon and tivumecirnon 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 zelnecirnon and tivumecirnon, 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 (i) have successfully completed preclinical studies for zelnecirnon and tivumecirnon, (ii) have successfully completed a Phase 1a/1b trial of zelnecirnon in healthy volunteers and patients with AD and a Phase 1 clinical trial with healthy volunteers for tivumecirnon and (iii) are conducting a Phase 2b trial of zelnecirnon in patients with AD, a Phase 2a trial of zelnecirnon in patients with asthma and a Phase 1/2 clinical trial investigating tivumecirnon as a single agent and in combination with pembrolizumab in a range of tumors, more clinical trials are needed and there is no guarantee that the FDA will permit us to conduct additional clinical trials for zelnecirnon, tivumecirnon 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 zelnecirnon, tivumecirnon or any other potential drug candidates. For example, on February 16, 2024, the FDA verbally notified us that a clinical hold has been placed on our Phase 2b trial of zelnecirnon in AD and our Phase 2a trial in asthma. The clinical hold determination was based on a serious adverse event of liver failure in one patient in the AD trial, the cause of which is currently unknown but has been characterized as potentially related to zelnecirnon. Dosing of zelnecirnon has been halted in both clinical trials, as has enrollment of new trial participants. We are actively engaged in discussions with FDA as part of our efforts to lift the clinical hold. However, there can be no assurance that we can address the issues resulting in the clinical hold in a timely manner or at all, and we may incur additional expenses in connection with our efforts to advance zelnecirnon.

Zelnecirnon and tivumecirnon 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 zelnecirnon has shown activity in several preclinical models and in the placebo-controlled Phase 1b portion of the Phase 1a/1b trial in a small number of patients with AD, there is no guarantee that this effect will be shown to benefit patients in the larger and longer Phase 2b trial or in the Phase 2a trial in patients with asthma. Additionally, while tivumecirnon is currently in a Phase 1/2 clinical trial and has shown activity in a small number of patients with non-small cell lung cancer, there is no guarantee that tivumecirnon will ultimately prove to benefit patients. In the ongoing Phase 1/2 clinical trial of tivumecirnon, drug responses have been observed in a small number of patients. It is possible that no further responses will be observed in other patients or that the observed responses in patients who received tivumecirnon and pembrolizumab were caused solely by the pembrolizumab administered to the patient and not by tivumecirnon, or that the responses were spontaneous and unrelated to either tivumecirnon or pembrolizumab. We have discontinued, and may elect in the future to discontinue, development of tivumecirnon in certain indications if, among other reasons, data does not warrant moving forward. For example, in 2022, we made the decision not to move forward with development of tivumecirnon in nasopharyngeal cancer and checkpoint-naïve head and neck squamous cell carcinoma. Additionally, we may be unable to enroll the trial or complete the dosing interval due to the impact of unexpected world events. There can be no assurance that the intended effects of our drug candidates 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 therapeutics companies such as ours.

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

We may not have the financial resources to continue development of, or to enter into new collaborations or partnerships for, zelnecirnon, tivumecirnon 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 Investigational New Drug Applications ("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;
- suspension or termination of our clinical trials for various reasons, including a clinical hold based on a finding that our drug candidates have undesirable side effects or other unexpected characteristics, or that the participants are being exposed to unacceptable health risks, such as the clinical hold described above;
- 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's 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 obtain 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.

Zelnecirnon, tivumecirnon or other future drug candidates may not demonstrate the safety and efficacy necessary to support further clinical development or commercial viability. Further, success in research and preclinical studies or early clinical trial results may not be indicative of results obtained in later trials. Likewise, preliminary, initial or interim data from clinical trials may be materially different from final data.

We have completed a Phase 1a/1b trial of zelnecirnon in healthy volunteers and in patients with AD. We are conducting a Phase 2b trial of zelnecirnon in patients with AD and a Phase 2a trial in asthma. In addition, we have completed a Phase 1 clinical trial with healthy volunteers for tivumecirnon. We are conducting a Phase 1/2 clinical trial investigating tivumecirnon as a single agent and in combination with pembrolizumab. We may ultimately discover that neither zelnecirnon nor tivumecirnon meet criteria to be determined to be therapeutically effective or safe. For example, although zelnecirnon has exhibited encouraging results in preclinical models of AD and allergic asthma and showed improvement compared to placebo in a common measure of disease severity in a small number of patients with AD, it may not demonstrate the same properties in larger numbers of humans and may interact with human biological systems in unforeseen, ineffective or harmful ways. Additionally, on February 16, 2024, the FDA verbally notified us that a clinical hold has been placed on our Phase 2b trial of zelnecirnon in AD and our Phase 2a trial in asthma. The clinical hold determination was based on a serious adverse event of liver failure in one patient in the AD trial, the cause of which is currently unknown but has been characterized as potentially related to zelnecirnon. Dosing of zelnecirnon has been halted in both clinical trials, as has enrollment of new trial participants. As a result, we may never succeed in developing a marketable product based on zelnecirnon. If zelnecirnon, tivumecirnon 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.

Additionally, results from research and preclinical studies or early clinical trials are not necessarily predictive of future clinical trial results, and preliminary, initial and interim results of a clinical trial are not necessarily indicative of final results. From time to time, we have and may in the future publish or report preliminary, initial or interim data. Preliminary, initial or interim data from our clinical trials and those of our collaborators may not be indicative of the final results of the trial and are subject to the risk that one or more of the clinical outcomes may materially change as patient enrollment continues and/or more patient data become available. In this regard, such data may show initial evidence of clinical benefit, but as patients continue to be followed and more patient data becomes available, there is a risk that any therapeutic effects will not be durable in patients and/or will decrease over time, or cease entirely. Preliminary, initial or interim data also remain subject to audit and verification procedures that may result in the final data being materially different from such preliminary, initial or interim data. As a result, preliminary, initial or interim data should be considered carefully and with caution until the final data are available.

In addition, there is a high failure rate for product candidates proceeding through clinical trials. Many companies in the biopharmaceutical industry have suffered significant setbacks in late-stage clinical trials even after achieving promising results in preclinical testing and earlier-stage clinical trials. Data obtained from preclinical and clinical activities are subject to varying interpretations, which may delay, limit or prevent regulatory approval. Any such setbacks could adversely affect our business, financial condition, results of operations and prospects.

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 zelnecirnon, tivumecirnon 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 zelnecirnon or tivumecirnon, 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 proof of concept 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 zelnecirnon or tivumecirnon, our ability to market and derive revenue from the drug candidate could be compromised.

Undesirable side effects caused by zelnecirnon, tivumecirnon 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. For example, on February 16, 2024, the FDA verbally notified us that a clinical hold has been placed on our Phase 2b trial of zelnecirnon in AD and our Phase 2a trial in asthma. The clinical hold determination was based on a serious adverse event of liver failure in one patient in the AD trial, the cause of which is currently unknown but has been characterized as potentially related to zelnecirnon. Dosing of zelnecirnon has been halted in both clinical trials, as has enrollment of new trial participants. While we have not discovered any adverse side effects of tivumecirnon in healthy subjects that have limited our ability to test tivumecirnon in humans, it is possible that there will be undesirable side effects associated with its 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 revenue.

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 inflammatory diseases, 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 continue to incur 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, 2023, we had $158.9 million in cash and cash equivalents and marketable securities. Based on current business plans, we believe that our current cash and cash equivalents and marketable securities will provide sufficient funds to enable us to meet our obligations for at least the next 12 months from the date of this report. 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, including our ability to address the issues resulting in the clinical hold in a timely manner or at all;
- 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. While the long-term economic impact of ongoing overseas conflicts and potential future disruptions in access to bank deposits or lending commitments due to bank failures are difficult to assess or predict, each of these events has caused significant disruptions to the global financial markets and contributed to a general global economic slowdown. Furthermore, inflation rates, particularly in the United States and the U.K., have increased to levels not seen in decades. Increased inflation may result in increased operating costs (including labor costs) and may affect our operating budgets. In addition, the U.S. Federal Reserve has raised, and may further raise, interest rates in response to concerns about inflation. Increases in interest rates, especially if coupled with reduced government spending and volatility in financial markets, may further increase economic uncertainty and heighten these risks. Moreover, the failures of Silicon Valley Bank, Signature Bank and First Republic Bank have resulted in broader financial institution liquidity risk and concerns. If the equity and credit markets deteriorate, including as a result of macroeconomic or other global conditions such as inflation, rising interest rates, prospects of a recession, government shutdowns, bank failures and other disruptions to financial systems, civil or political unrest, military conflicts, pandemics or other health crises and supply chain and resource issues, it may make any necessary debt or equity financing more difficult to obtain in a timely manner or on favorable terms, more costly or more dilutive. In any event, if the disruptions and slowdown deepen or persist, we may not be able to access additional capital on favorable terms, or at all, which could in the future negatively affect our financial condition and our ability to pursue our business strategy.

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 zelnecirnon, tivumecirnon 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 expenses.

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 tivumecirnon 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 necessary capital 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 or 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, CROs, clinical data management organizations ("CDMOs") 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, CDMOs 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 on anticipated timelines. For example, in March 2020 we temporarily paused enrollment for a few months in the Phase 1b portion of our Phase 1a/1b trial to evaluate zelnecirnon in patients with AD due to circumstances and uncertainties created by the COVID-19 pandemic. Additionally, we have experienced, and may continue to experience, enrollment volumes that were lower than we had projected in our Phase 2b trial of zelnecirnon in AD, which has delayed and may further delay the expected timing of topline results from such trial. For example, as a result of the clinical hold that the FDA placed on our Phase 2b trial of zelnecirnon in AD and our Phase 2a trial in asthma, we have stopped dosing zelnecirnon in both trials and halted enrollment of new trial participants. We cannot predict how difficult it will be to enroll patients for our clinical trials or whether we will be able to meet our anticipated timelines to provide initial data. 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;
- ramifications of the clinical hold, including the reluctance of patients to participate in a trial involving zelnecirnon; 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, some of which are or may be sole source vendors, for manufacturing and supply of our drug candidates 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 zelnecirnon and tivumecirnon. 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 are 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 zelnecirnon, tivumecirnon 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 zelnecirnon and tivumecirnon, 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 zelnecirnon and tivumecirnon, are smaller than we believe they are, our ability to generate product revenue may be adversely affected and our business may suffer.

Our understanding of the number of people who suffer from certain types of inflammatory disease and cancers that zelnecirnon and tivumecirnon, 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 zelnecirnon or tivumecirnon.

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 numerous companies that are developing biologics and small molecule drugs for the treatment of inflammatory diseases and cancer. 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 Agenus/Gilead, Amgen and Tusk/Roche for oncology, and AnaptysBio and Dermira/Lilly 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 inflammatory diseases and cancer such as AbbVie, Amgen, AstraZeneca, Bristol-Myers Squibb, GlaxoSmithKline, Incyte, Kyowa Hakko Kirin, Merck, Novartis, Pfizer, Roche/Genentech and Sanofi/Regeneron. If zelnecirnon, tivumecirnon or any 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, 2023 we had 131 full-time employees. Our focus on the development of zelnecirnon, tivumecirnon 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 to 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 are party to 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, including as a result of ongoing overseas conflicts; outbreak of disease; boycotts, curtailment of trade and other business restrictions and 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 could be materially and adversely affected in the future by the effects of disease outbreaks, epidemics and pandemics.

Disease outbreaks, epidemics and pandemics in regions where we have concentrations of clinical trial sites and other business operations, could adversely affect our business, including by causing significant disruptions in our operations and/or in the operations of manufacturers and CROs we rely on. Disease outbreaks, epidemics and pandemics may have negative impacts on our ability to initiate new clinical trial sites, enroll new patients and to maintain existing patients who are participating in clinical trials, which may result in increased clinical trial costs, longer timelines and delay in our ability to obtain regulatory approvals of our product candidates, if at all. For example, in March 2020, we temporarily paused enrollment for a few months in the Phase 1b portion of our Phase 1a/1b trial to evaluate zelnecirnon in patients with AD due to circumstances and uncertainties created by the COVID-19 pandemic, including vulnerability of our studied patient populations, site staff shortages, clinical trial site suspensions, reallocation of medical resources and the challenges of working remotely due to shelter-in-place and similar government orders and guidelines, among other factors.

General supply chain issues may be exacerbated during disease outbreaks, epidemics or pandemics and may also impact the ability of our clinical trial sites to obtain basic medical supplies used in our trials in a timely fashion, if at all.

Moreover, the extent to which disease outbreaks, epidemics and pandemics may impact our business, results of operations and financial position will depend on future developments, which are highly uncertain and cannot be predicted with confidence. New health epidemics or pandemics may emerge that result in similar or more severe disruptions to our business. To the extent any future disease outbreak, epidemic or pandemic adversely affects our business, financial condition, results of operations and growth prospects, it could also have the effect of heightening many of the other risks and uncertainties described in this “Risk Factors” section.

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. Such an event would 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 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 zelnecirnon, tivumecirnon 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. Despite 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 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 they 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 or that 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.

As is the case with other therapeutics companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biopharmaceutical industry involves both technological and legal complexity, and is therefore costly, time-consuming and inherently uncertain. Changes in either the patent laws or interpretation of the patent laws in the United States could increase the uncertainties and costs of, and may diminish our ability to protect, our inventions, obtaining, maintaining, and enforcing our intellectual property rights and, more generally, could affect the value of our intellectual property or narrow the scope of our owned and licensed patents. On September 16, 2011, the Leahy-Smith America Invents Act (the "Leahy-Smith Act") was signed into law, which increased uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents. The Leahy-Smith Act included a number of significant changes to U.S. patent law. These provisions affected the way patent applications are prosecuted, redefined prior art and provided more efficient and cost-effective avenues for competitors to challenge the validity of patents. This included allowing third-party submission of prior art to the USPTO during patent prosecution and additional procedures that attacked the validity of a patent by USPTO administered post-grant proceedings, including post-grant review, inter partes review and derivation proceedings. In March 2013, under the Leahy-Smith Act, the United States transitioned to a first-to-file system in which, assuming that the other statutory requirements are met, the first inventor to file a patent application would be entitled to the patent on an invention regardless of whether a third-party was the first to invent the claimed invention. This required us to be cognizant of the time from invention to filing of a patent application. The Leahy-Smith Act and its implementation resulted in uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could have a material adverse impact on our business prospects, financial condition and results of operations.

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 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.

In Europe, a new unitary patent system took effect in June 2023, which will significantly impact European patents, including those granted before the introduction of such a system. Under the unitary patent system, European applications will have the option, upon grant of a patent, of becoming a Unitary Patent, which will be subject to the jurisdiction of the Unitary Patent Court (UPC). As the UPC is a new court system, there is no precedent for the court, increasing the uncertainty of any litigation. Patents granted before the implementation of the UPC will have the option of opting out of the jurisdiction of the UPC and remaining as national patents in the UPC countries. Patents that remain under the jurisdiction of the UPC will be potentially vulnerable to a single UPC-based revocation challenge that, if successful, could invalidate the patent in all countries who are signatories to the UPC. We cannot predict with certainty the long-term effects of any potential changes.

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, 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. 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 where 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 better able to 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 inflammation disease and immuno-oncology 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 U.S. registered trademark for RAPT and a U.S. registered trademark for a design used in our corporate logo. 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.

Legal and Regulatory Risks

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, zelnecirnon and tivumecirnon, 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 tivumecirnon as a single agent and in combination with pembrolizumab in a range of tumors, a Phase 2b clinical trial of zelnecirnon in patients with AD and a Phase 2a trial of zelnecirnon in patients with asthma. We may experience delays in initiating or completing our clinical trials. For example, in March 2020, we temporarily paused enrollment for a few months in the Phase 1b portion of our Phase 1a/1b trial to evaluate zelnecirnon in patients with AD due to circumstances and uncertainties created by the COVID-19 pandemic. Additionally, we have experienced, and may continue to experience, enrollment volumes that were lower than we had projected in our Phase 2b trial of zelnecirnon in AD, which has delayed and may further delay the expected timing of topline results from such trial. For example, as a result of the clinical hold that the FDA placed on our Phase 2b trial of zelnecirnon in AD and our Phase 2a trial in asthma, we have stopped dosing zelnecirnon in both trials and halted enrollment of new trial participants. 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 or continue 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. For example, on February 16, 2024, the FDA verbally notified us that a clinical hold has been placed on our Phase 2b trial of zelnecirnon in AD and our Phase 2a trial in asthma. The clinical hold determination was based on a serious adverse event of liver failure in one patient in the AD trial, the cause of which is currently unknown but has been characterized as potentially related to zelnecirnon. Dosing of zelnecirnon has been halted in both clinical trials, as has enrollment of new trial participants. We are actively engaged in discussions with FDA as part of our efforts to lift the clinical hold. However, there can be no assurance that we can address the issues resulting in the clinical hold in a timely manner or at all. 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 zelnecirnon, tivumecirnon or other future drug candidates.

Zelnecirnon, tivumecirnon 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 and other companies developing drugs 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 zelnecirnon, tivumecirnon 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 zelnecirnon, tivumecirnon 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 zelnecirnon, tivumecirnon or other future drug candidates, 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 and 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, as amended by the Health Care and Education Reconciliation Act (collectively, 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. The ACA was intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, enhance remedies against fraud and abuse, add new transparency requirements for the healthcare and health insurance industries, impose new taxes and fees on the health industry and impose additional health policy reforms.

There have been executive, judicial and Congressional challenges to certain aspects of the ACA. For example, in June 2021, the U.S. Supreme Court dismissed a challenge on procedural grounds that argued the ACA is unconstitutional in its entirety because the "individual mandate" was repealed by Congress. Moreover, prior to the U.S. Supreme Court ruling, on January 28, 2021, President Biden issued an executive order that initiated a special enrollment period for purposes of obtaining health insurance coverage through the ACA marketplace. The executive order also instructed certain governmental agencies to review and reconsider their existing policies and rules that limit access to healthcare, including among others, reexamining Medicaid demonstration projects and waiver programs that include work requirements, and policies that create unnecessary barriers to obtaining access to health insurance coverage through Medicaid or the ACA. In August 2022, President Biden signed the Inflation Reduction Act of 2022 (the "IRA") into law, which, among other things, extends enhanced subsidies for individuals purchasing health insurance coverage in ACA marketplaces through plan year 2025. The IRA also eliminates the "donut hole" under the Medicare Part D program beginning in 2025 by significantly lowering the beneficiary maximum out-of-pocket cost through a newly established manufacturer discount program. It is possible that the ACA will be subject to judicial or Congressional challenges in the future. It is unclear how any such challenges and the healthcare reform measures of the Biden administration 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, includes aggregate reductions of Medicare payments to providers of 2% per fiscal year. These reductions went into effect in April 2013 and, due to subsequent legislative amendments, will remain in effect until 2032. In January 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 over the manner in which manufacturers set prices for their marketed products. For example, there have been several Congressional inquiries, Presidential executive orders 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, in July 2021, the Biden administration released an executive order that included multiple provisions aimed at prescription drugs. In response to President Biden's executive order, in September 2021, the U.S. Department of Health and Human Services ("HHS") released a Comprehensive Plan for Addressing High Drug Prices that outlines principles for drug pricing reform. The plan sets out a variety of potential legislative policies that Congress could pursue as well as potential administrative actions HHS can take to advance these principles. In addition, the IRA, among other things, (1) directs HHS to negotiate the price of certain single-source drugs and biologics covered under Medicare and (2) imposes rebates under Medicare Part B and Medicare Part D to penalize price increases that outpace inflation. These provisions take effect progressively starting in fiscal year 2023. On August 29, 2023, HHS announced the list of the first ten drugs that will be subject to price negotiations, although the Medicare drug price negotiation program is currently subject to legal challenges. It is currently unclear how the IRA will be implemented, but it is likely to have a significant impact on the pharmaceutical industry. In response to the Biden administration's October 2022 executive order, on February 14, 2023, HHS released a report outlining three new models for testing by the Centers for Medicare & Medicaid Services ("CMS") Innovation Center that will be evaluated on their ability to lower the cost of drugs, promote accessibility and improve quality of care. It is unclear whether the models will be utilized in any health reform measures in the future. Further, on December 7, 2023, the Biden administration announced an initiative to control the price of prescription drugs through the use of march-in rights under the Bayh-Dole Act. On December 8, 2023, the National Institute of Standards and Technology published for comment a Draft Interagency Guidance Framework for Considering the Exercise of March-In Rights that, for the first time includes the price of a product as one factor an agency can use when deciding to exercise march-in rights. While the government has not previously exercised march-in rights, it is uncertain if that will change under the new framework. At the state level, legislatures have increasingly passed legislation and implemented regulations designed to (i) 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 (ii) encourage importation from other countries and bulk purchasing. For example, on January 5, 2024, the FDA approved Florida's Section 804 Importation Program ("SIP") proposal to import certain drugs from Canada for specific state healthcare programs. It is unclear how this program will be implemented, including which drugs will be chosen, and whether it will be subject to legal challenges in the United States or Canada. Other states have also submitted SIP proposals that are pending review by the FDA. Any such approved importation plans, when implemented, may result in lower drug prices for products covered by those programs. 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 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 research, 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;
- the Health Insurance Portability and Accountability 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. As amended by the Health Information Technology for Economic and Clinical Health Act ("HITECH"), HIPAA also imposes obligations on certain covered entity healthcare providers, health plans and healthcare clearinghouses as well as their business associates and subcontractors 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 the CMS information related to payments and other transfers of value made by that entity to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors), other healthcare professionals (such as physicians assistants and nurse practitioners) 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 significant 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. 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. The failure to obtain coverage reimbursement for the companion diagnostic tests may hinder our ability to commercialize our product candidates, once approved.

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. Further, coverage policies and third-party reimbursement rates may change at any time. Thus, even if favorable coverage and reimbursement status is attained, less favorable coverage policies and reimbursement rates may be implemented in the future. 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 revenue 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.

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 zelnecirnon and tivumecirnon, we will be exposed to significant product liability risks inherent in the development, testing, manufacturing and marketing of inflammatory disease and cancer 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, 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 comply 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.

We are subject to stringent and evolving U.S. and foreign laws, regulations and rules, contractual obligations, industry standards, policies and other obligations related to data privacy and security. Our actual or perceived failure to comply with such obligations could lead to government investigations or enforcement actions (which could include civil or criminal penalties), litigation (including class claims) and mass arbitration demands; fines or penalties; or disruptions of our business operations, reputational harm, loss of revenue or profits, adverse publicity and other adverse business consequences, which could negatively affect our operating results and business.

In the ordinary course of business, we collect, receive, store, process, generate, use, transfer, disclose, make accessible, protect, secure, dispose of, transmit and share (collectively, “process”) personal data and other sensitive information, including proprietary and confidential business data, trade secrets, intellectual property, sensitive third-party data, business plans, transactions, financial information and clinical trial and other health data (collectively, “sensitive data”).

Our data processing activities may subject us to numerous data privacy and security obligations, such as various federal, state, local and foreign data protection laws, regulations, guidance, industry standards, external and internal privacy and security policies, contractual requirements and other obligations relating to data privacy and security. In the United States, federal, state and local governments have enacted numerous data privacy and security laws, including data breach notification laws, personal data privacy laws, consumer protection laws (*e.g.*, Section 5 of the Federal Trade Commission Act) and other similar laws (*e.g.*, wiretapping laws). For example, HIPAA, as amended by HITECH, imposes specific requirements relating to the privacy, security and transmission of protected health information. In the past few years, numerous U.S. states—including California, Virginia, Colorado, Connecticut and Utah—have enacted comprehensive privacy laws that impose certain obligations on covered businesses, including providing specific disclosures in privacy notices and affording residents with certain rights concerning their personal data. As applicable, such rights may include the right to access, correct or delete certain personal data and to opt-out of certain data processing activities, such as targeted advertising, profiling and automated decision-making. The exercise of these rights may impact our business and ability to provide our products and services. Certain states also impose stricter requirements for processing certain personal data, including sensitive information, such as conducting data privacy impact assessments. These state laws allow for statutory fines for noncompliance. For example, the California Consumer Privacy Act of 2018, as amended by the California Privacy Rights Act of 2020 ("CPRA") (collectively, "CCPA"), applies to personal data of consumers, business representatives and employees who are California residents, and requires businesses to provide specific disclosures in privacy notices and honor requests of such individuals to exercise certain privacy rights. The CCPA provides for fines of up to $7,500 per intentional violation and allows private litigants affected by certain data breaches to recover significant statutory damages. Similar laws are being considered in several other states, as well as at the federal and local levels, and we expect more states to pass similar laws in the future. While these laws also exempt some data processed in the context of clinical trials, these developments further complicate our compliance efforts and increase compliance costs for us, the third parties we rely on and our future customers.

Outside the United States, an increasing number of laws, regulations and industry standards govern data privacy and security. For example, the European Union's General Data Protection Regulation ("EU GDPR") and the United Kingdom's GDPR ("UK GDPR") (collectively, "GDPR") and Australia's Privacy Act impose strict requirements for processing personal data. For example, under the GDPR, companies may face temporary or definitive bans on data processing and other corrective actions; fines of up to €20 million under the EU GDPR, £17.5 million under the UK GDPR or, in each case, 4% of annual global revenue, whichever is greater; or private litigation related to processing of personal data brought by classes of data subjects or consumer protection organizations authorized at law to represent their interests. In addition, we conduct and may conduct in the future clinical trials in Asia and may therefore be subject to new and emerging data privacy regimes in Asia, including South Korea's Personal Information Protection Act, Taiwan's Personal Data Protection Act, Thailand's Personal Data Protection Act and Hong Kong's Personal Data (Privacy) Ordinance.

In addition, we may be unable to transfer personal data from Europe and other jurisdictions to the United States or other countries due to data localization requirements or limitations on cross-border data flows. Europe and other jurisdictions have enacted laws requiring data to be localized or limiting the transfer of personal data to other countries. In particular, the European Economic Area ("EEA") and the United Kingdom ("UK") have significantly restricted the transfer of personal data to the United States and other countries whose privacy laws they generally believe are inadequate. Other jurisdictions may adopt similarly stringent interpretations of their data localization and cross-border data transfer laws. Although there are currently various mechanisms that may be used to transfer personal data from the EEA and UK to the United States in compliance with law, such as the EEA's standard contractual clauses, the UK's International Data Transfer Agreement / Addendum, and the EU-U.S. Data Privacy Framework and the UK extension thereto (which allows for transfers to relevant U.S.-based organizations who self-certify compliance and participate in the Framework), these mechanisms are subject to legal challenges and there is no assurance that we can satisfy or rely on these measures to lawfully transfer personal data to the United States. If there is no lawful manner for us to transfer personal data from the EEA, the UK or other jurisdictions to the United States, or if the requirements for a legally compliant transfer are too onerous, we could face significant adverse consequences, including the interruption or degradation of our operations, the need to relocate part of or all of our business or data processing activities to other jurisdictions (such as Europe) at significant expense, increased exposure to regulatory actions, substantial fines and penalties, the inability to transfer data and work with partners, vendors and other third parties and injunctions against our processing or transferring of personal data necessary to operate our business. Additionally, companies that transfer personal data out of the EEA and UK to other jurisdictions, particularly to the United States, are subject to increased scrutiny from regulators, individual litigants and activities groups. Some European regulators have ordered certain companies to suspend or permanently cease certain transfers of personal data out of Europe for allegedly violating the GDPR's cross-border data transfer limitations.

In addition to data privacy and security laws, we are contractually subject to data privacy and security obligations and may become subject to such obligations in the future. We are also bound by other contractual obligations related to data privacy and security and our efforts to comply with such obligations may not be successful. For example, 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.

We publish privacy policies, marketing materials and other statements regarding data privacy and security. If these policies, materials or statements are found to be deceptive, unfair, deficient, lacking in transparency or misrepresentative of our practices, we may be subject to investigation, enforcement actions by regulators or other adverse consequences.

Obligations related to data privacy and security (and consumers' data privacy expectations) are quickly changing, becoming increasingly stringent and creating uncertainty. Additionally, these obligations may be subject to differing applications and interpretations, which may be inconsistent or conflict among jurisdictions. Preparing for and complying with these obligations requires us to devote significant resources and may necessitate changes to our services, information technologies, systems and practices and to those of any third parties that process personal data on our behalf.

We may at times fail, or be perceived to have failed, in our efforts to comply with our data privacy and security obligations. Moreover, despite our efforts, our personnel or third parties on whom we rely may fail to comply with such obligations, which could negatively impact our business operations. In the event of failure (or perceived failure) of us or the third parties we rely on to address or comply with applicable data privacy and security obligations, we could face significant consequences, including but not limited to: government enforcement actions (*e.g.*, investigations, fines, civil or criminal penalties, audits, inspections, and similar); litigation (including class claims) and mass arbitration demands, additional reporting requirements and/or oversight, bans on processing personal data, orders to destroy or not use personal data, adverse publicity or imprisonment of company officials. In particular, plaintiffs have become increasingly more active in bringing privacy-related claims against companies, including class action claims and mass arbitration demands. Some of these claims allow for the recovery of statutory damages on a per violation basis and, if viable, carry the potential for monumental statutory damages, depending on the volume of data and the number of violations. Any of these events could have a material adverse effect on our reputation, business or financial condition, including but not limited to: loss of customers, inability to process personal data or to operate in certain jurisdictions, limited ability to develop or commercialize our products, expenditure of time and resources to defend any claim or inquiry, adverse publicity or substantial changes to our business model or operations.

If our information technology systems (or those of the third parties we rely on) or our data are or were compromised, we could experience adverse consequences resulting from such compromise, including but not limited to regulatory investigations or actions, litigation, fines and penalties, disruptions of our business operations, reputational harm, loss of revenue or profits and other adverse consequences.

In the ordinary course of business, we and the third parties we rely on process sensitive data. As a result, we and the third parties we rely on face a variety of evolving threats, including but not limited to ransomware attacks, which could cause security incidents. Cyber-attacks, malicious internet-based activity, online and offline fraud and other similar activities threaten the confidentiality, integrity and availability of our sensitive data and information technology systems, and those of the third parties we rely on. Such threats are prevalent and continue to rise, are increasingly difficult to detect and come from a variety of sources, including traditional computer “hackers,” threat actors, “hacktivists,” organized criminal threat actors, personnel (such as through theft or misuse), sophisticated nation states and nation-state-supported actors.

Some actors now engage and are expected to continue to engage in cyber-attacks, including without limitation nation-state actors for geopolitical reasons and in conjunction with military conflicts and defense activities. During times of war and other major conflicts, we and the third parties we on rely may be vulnerable to a heightened risk of these attacks, including retaliatory cyber-attacks, that could materially disrupt our systems and operations, supply chain and ability to produce, sell and distribute our services.

We and the third parties we rely on are subject to a variety of evolving threats, including but not limited to social-engineering attacks (including through deep fakes, which may be increasingly more difficult to identify as fake, and phishing attacks), malicious code (such as viruses and worms), malware (including as a result of advanced persistent threat intrusions), denial-of-service attacks, credential stuffing attacks, credential harvesting, personnel misconduct or error, ransomware attacks, supply-chain attacks, software bugs, server malfunctions, software or hardware failures, loss of data or other information technology assets, adware, telecommunications failures, earthquakes, fires, floods, attacks enhanced or facilitated by artificial intelligence ("AI") and other similar threats.

In particular, severe ransomware attacks are becoming increasingly prevalent and can lead to significant interruptions in our operations, ability to provide our products or services, loss of sensitive data and income, reputational harm and diversion of funds. Extortion payments may alleviate the negative impact of a ransomware attack, but we may be unwilling or unable to make such payments due to, for example, applicable laws or regulations prohibiting such payments.

Remote work has become more common and has increased risks to our information technology systems and data, as more of our employees utilize network connections, computers and devices outside our premises or network, including working at home, while in transit and in public locations. Additionally, future or past business transactions, such as acquisitions or integrations, could expose us to additional cybersecurity risks and vulnerabilities, as our systems could be negatively affected by vulnerabilities present in acquired or integrated entities' systems and technologies. Furthermore, we may discover security issues that were not found during due diligence of such acquired or integrated entities, and it may be difficult to integrate companies into our information technology environment and security program.

In addition, our reliance on third parties, such as our CROs or other vendors, contractors or consultants, could introduce new cybersecurity risks and vulnerabilities, including supply-chain attacks and other threats to our business operations. We rely on third parties and technologies to operate critical business systems to process sensitive data in a variety of contexts, including, without limitation, cloud-based infrastructure, data center facilities, clinical trials, drug discovery and development, encryption and authentication technology, employee email and other functions. We also rely on third parties to provide other products, services, parts or otherwise to operate our business. Our ability to monitor these third parties' information security practices is limited, and these third parties may not have adequate information security measures in place. If the third parties we rely on experience a security incident or other interruption, we could experience adverse consequences. While we may be entitled to damages if the third parties we rely on fail to satisfy their privacy or security-related obligations to us, any award may be insufficient to cover our damages or we may be unable to recover such award. In addition, supply-chain attacks have increased in frequency and severity, and we cannot guarantee that third parties' infrastructure in our supply chain or the supply chain of third parties we rely on have not been compromised.

While we have implemented security measures designed to protect against security incidents, including measures designed to prevent the sharing and loss of patient data in our sample collection process associated with our drug discovery and development efforts, there can be no assurance that these measures will be effective. We have taken steps designed to detect and remediate vulnerabilities in our information systems (such as our hardware and/or software, including that of third parties we rely on). We may not, however, be able to detect and remediate all such vulnerabilities including on a timely basis. Further, we may experience delays in developing and deploying remedial measures and patches designed to address identified vulnerabilities. Vulnerabilities could be exploited and result in a security incident.

Any of the previously identified or similar threats could cause a security incident or other interruption that could result in unauthorized, unlawful or accidental acquisition, modification, destruction, loss, alteration, encryption, disclosure of, or access to, our sensitive data or our information technology systems or those of the third parties we rely on. A security incident or other interruption could disrupt our ability (and that of the third parties we rely on) to provide our services.

We may expend significant resources or modify our business activities to try to protect against security incidents. Additionally, certain data privacy and security obligations may require us to implement and maintain specific security measures or industry-standard or reasonable security measures to protect our information technology systems and sensitive data.

Applicable data privacy and security obligations may require us to notify relevant stakeholders, including affected individuals, customers, regulators and investors, of security incidents. Such disclosures are costly, and the disclosure or the failure to comply with such requirements could lead to adverse consequences.

If we or a third party we rely on experiences a security incident or is perceived to have experienced a security incident, we may experience adverse consequences such as: government enforcement actions (for example, investigations, fines, penalties, audits and inspections); additional reporting requirements and/or oversight; restrictions on processing sensitive data (including personal data); litigation (including class claims); indemnification obligations; negative publicity; reputational harm; disputes with physicians, patients and our partners; monetary fund diversions; interruptions in our operations (including availability of data and interruptions and delays in our research and development work; financial loss and other similar harms. Security incidents and attendant consequences may negatively impact our ability to grow and operate our business.

Our contracts may not contain limitations of liability, and even where they do, there can be no assurance that limitations of liability in our contracts are sufficient to protect us from liabilities, damages, or claims related to our data privacy and security obligations. We cannot be sure that our insurance coverage will be adequate or sufficient to protect us from or to mitigate liabilities arising out of our privacy and security practices, that such coverage will continue to be available on commercially reasonable terms or at all, or that such coverage will pay future claims.

In addition to experiencing a security incident, third parties may gather, collect or infer sensitive data about us from public sources, data brokers or other means that reveals competitively sensitive details about our organization and could be used to undermine our competitive advantage or market position. Additionally, sensitive data of the Company could be leaked, disclosed or revealed as a result of or in connection with the use of generative AI technologies by our personnel or our vendors.

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.

Risks Related to Ownership of 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, delay 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 highly volatile. 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 zelnecirnon, tivumecirnon or other potential future drug candidates through clinical development;
- 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 securities analyst recommendations regarding our common stock, other comparable companies or our industry generally;
- our failure or the failure of our competitors to meet securities 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, including as a result of ongoing overseas conflicts;
- 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, therapeutics, biopharmaceutical and biotechnology stocks in particular, have experienced extreme volatility that has been often unrelated to the operating performance of the issuer, including in connection with ongoing overseas conflicts and potential future bank failures, each of which has resulted in decreased stock prices for many companies notwithstanding the lack of a fundamental change in their underlying business models or prospects. Broad market and industry factors, including worsening economic or financial conditions, macroeconomic factors including inflation and rising interest rates and geopolitical instability, including instability resulting from ongoing overseas conflicts, may negatively affect the market price of our common stock, regardless of our actual operating performance. 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 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 revenue, 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 clinical 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.

Our executive officers and directors, together with holders of 5% or more of our capital stock and their respective affiliates, beneficially own a significant percentage of our common stock. 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.

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

We are an "emerging growth company" as defined in the 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, ("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. 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 are also a smaller reporting company as defined in the Exchange Act. We may continue to be a smaller reporting company even after we are no longer an emerging growth company. We may take advantage of certain of the scaled disclosures available to smaller reporting companies and will be able to take advantage of these scaled disclosures for so long as (i) our voting and non-voting common stock held by nonaffiliates is less than $250.0 million measured on the last business day of our second fiscal quarter or (ii) our annual revenue is less than $100.0 million during the most recently completed fiscal year and our voting and non-voting common stock held by non-affiliates is less than $700.0 million measured on the last business day of our second fiscal quarter.

Our ability to use net operating loss carryforwards and certain other tax attributes to offset future taxable income may be subject to certain limitations.

Our ability to use our net operating loss carryforwards ("NOLs") and certain other tax attributes is conditioned upon our attaining profitability and generating U.S. federal and state taxable income. As described above under "—Risks Related to Our 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 and certain other tax attributes. Our NOLs could expire unused and be unavailable to offset future income tax liabilities because of their limited duration or because of restrictions under U.S. tax law. Federal NOLs generated in tax years beginning before January 1, 2018, are only permitted to be carried forward for 20 taxable years under applicable U.S. federal tax law. Under the Tax Cuts and Jobs Act (the "Tax Act"), as modified by the Coronavirus Aid, Relief, and Economic Security Act (the "CARES Act") signed into law in March 2020, federal NOLs arising in tax years beginning after December 31, 2017 may be carried forward indefinitely, but the deductibility of such federal NOLs may be limited to 80% of current year taxable income. It is uncertain if and to what extent various states will conform to the Tax Act or the CARES Act.

In general, under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended (the "Code"), a corporation that undergoes an "ownership change," generally defined as a greater than 50% change, by value, in its equity ownership over a three-year period, is subject to limitations on its ability to utilize its pre-change NOLs and certain other pre-change tax attributes (such as research and development tax credits) to offset post-change taxable income. Our existing NOLs and certain other tax attributes may be subject to substantial limitations arising from previous ownership changes, if any, and if we undergo an ownership change, our ability to utilize NOLs and certain other tax attributes could be further limited by Sections 382 and 383 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. Our NOLs and certain other tax attributes may also be impaired under state law. Accordingly, we may not be able to utilize a material portion of our NOLs and certain other tax attributes.

Changes in tax laws or regulations that are applied adversely to us or our customers may have a material adverse effect on our business, cash flow, financial condition or results of operations.

New tax laws, statutes, rules, regulations or ordinances could be enacted at any time. Further, existing tax laws, statutes, rules, regulations or ordinances could be interpreted differently, changed, repealed or modified at any time. Any such enactment, interpretation, change, repeal or modification could adversely affect us, possibly with retroactive effect. For instance, the recently enacted IRA imposes, among other rules, a 15% minimum tax on the book income of certain large corporations and a 1% excise tax on certain corporate stock repurchases. In addition, for certain research and experimental expenses incurred in tax years beginning after December 31, 2021, the Tax Act requires the capitalization and amortization of such expenses over five years if incurred in the United States and fifteen years if incurred outside the United States, rather than deducting such expenses currently. There have been legislative proposals to repeal or defer the capitalization requirement, including legislation recently passed by the U.S. House of Representatives that would restore the deductibility of research and experimental expenses incurred in the United States (but not research and experimental expenses incurred outside the United States); however, there can be no assurance that such requirement will be repealed, deferred or otherwise modified. Changes in corporate tax rates, the realization of our net deferred tax assets, the taxation of foreign earnings and the deductibility of expenses under the Tax Act, as amended by the CARES Act or any future tax reform legislation, could have a material impact on the value of our deferred tax assets, result in significant one-time charges and increase our future tax expenses.

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 drug discovery and development efforts 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. For the avoidance of doubt, this provision is intended to benefit, and may be enforced by, us, our officers and directors, the underwriters to any offering giving rise to such complaint and any other professional entity whose profession gives authority to a statement made by that person or entity and who has prepared or certified any part of the documents underlying the offering. 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. While the Delaware courts have determined that such choice of forum provisions are facially valid, a stockholder may nevertheless seek to bring a claim in a venue other than those designated in the exclusive forum provisions. In such instance, we would expect to vigorously assert the validity and enforceability of the exclusive forum provisions of our amended and restated certificate of incorporation. This may require significant additional costs associated with resolving such action in other jurisdictions and the provisions may not be enforced by a court in those other jurisdictions.

Item 1B. Unresolved Staff Comments.

None.

Item 1C. Cybersecurity

Risk management and strategy

We have implemented and maintain various information security processes designed to identify, assess and manage material risks from cybersecurity threats to our critical computer networks, third-party hosted services, communications systems, hardware, software and critical data, including intellectual property, clinical trial data, and other confidential information that is proprietary, strategic or competitive in nature ("Information Systems and Data").

Our information security function, led by our Director of Information Technology, helps identify, assess and manage the Company's cybersecurity threats and risks, including through the use of the Company's risk register. Our Director of Information Technology helps to identify and assess risks from cybersecurity threats by monitoring and evaluating our threat environment using various methods including, for example, monitoring provided by a third-party security operations center, deploying manual and third-party service provider automated tools in certain environments, subscribing to reports and services that identify cybersecurity threats (and analyzing such reports), conducting scans of certain environments, evaluating our industry's risk profile and threats reported to us, conducting internal audits and threat assessments for certain threats, conducting vulnerability assessments using third-party tools to identify vulnerabilities, engaging third parties to conduct threat assessments, using external intelligence feeds and monitoring the dark web.

Depending on the environment and system, we implement and maintain various technical, physical and organizational measures, processes, standards and policies designed to manage and mitigate material risks from cybersecurity threats to our Information Systems and Data including, for example: incident response plans and policies; vulnerability management policy; disaster recovery and business continuity plans; risk assessments; encryption of certain data; network security controls and data segregation for certain systems; access controls; physical security controls; asset management, tracking, and disposal; systems monitoring for certain systems; employee training; penetration testing of certain environments and cybersecurity insurance.

Our assessment and management of material risks from cybersecurity threats are taken into account as part of the Company's risk management processes. For example, our Director of Information Technology works with management to help mitigate cybersecurity threats that are more likely to lead to a material impact to our business.

We use third-party service providers to assist us from time to time to identify, assess and manage material risks from cybersecurity threats, including for example professional services firms (including legal counsel), threat intelligence service providers, cybersecurity consultants and software providers, managed cybersecurity service providers, penetration testing firms, dark web monitoring services, forensic investigators and endpoint detection and response vendors.

We use third-party service providers to perform a variety of functions throughout our business, such as application providers, hosting companies, contract research organizations, contract manufacturing organizations, distributors and supply chain resources. Depending on the nature of the services provided, the sensitivity of the Information Systems and Data at issue, and the identity of the provider, we may utilize various vendor management processes that may include reviews of security assessments or certifications and contractual measures.

For a description of the risks from cybersecurity threats that may materially affect the Company and how they may do so, see our risk factors under Part 1. Item 1A. Risk Factors in this Annual Report on Form 10-K, including "*If our information technology systems or those of third parties we rely on, or our data are or were compromised, we could experience adverse consequences resulting from such compromise, including but not limited to regulatory investigations or actions, litigation, fines and penalties, disruptions of our business operations, reputational harm, loss of revenue or profits and other adverse consequences."*

Governance

Our board of directors addresses the Company's cybersecurity risk management as part of its general oversight function. The board of directors' audit committee is responsible for overseeing the Company's cybersecurity risk management processes, including oversight and mitigation of risks from cybersecurity threats.

We also have a Corporate Information Security Steering Committee ("CISSC"), which includes several members of senior management, including the Chief Financial Officer ("CFO") and General Counsel. The CISSC oversees corporate information security initiatives and the Company's responses to cybersecurity incidents, and reports to the board of directors on certain of the Company's corporate security programs and investments.

Our cybersecurity risk assessment and management processes are implemented and maintained by certain Company management, including our Director of Information Technology, Gio Hernandez, who has over 15 years of experience in information security. Mr. Hernandez reports to our CFO, Rodney Young, who has approximately 20 years of experience supervising the information technology function.

Mr. Hernandez is responsible for hiring appropriate personnel, helping to develop the Company's cybersecurity risk management strategy and communicating key priorities to relevant personnel. Mr. Hernandez is also responsible for helping prepare for cybersecurity incidents, approving cybersecurity processes and reviewing security assessments and other security-related reports. Mr. Young is responsible for approving cybersecurity-related budgets.

Our cybersecurity incident response and vulnerability management policies are designed to escalate certain cybersecurity incidents to members of senior management depending on the circumstances, including our CFO and Chief Executive Officer. Senior management through the CISSC works with the Company's incident response team to help the Company mitigate and remediate cybersecurity incidents of which they are notified. In addition, the Company's incident response and vulnerability management policies include reporting to the audit committee of the board of directors for certain cybersecurity incidents.

The audit committee receives periodic reports from management concerning the Company's significant cybersecurity threats and risk and the processes the Company has implemented to address them. The audit committee also has access to various reports, summaries or presentations related to cybersecurity threats, risk and mitigation.

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.

In November 2022, we entered into an operating lease for an additional 13,232 square feet of office facilities in South San Francisco, California, which expires in July 2025. The lease agreement contains an option to extend the lease for an additional six-month term.

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.

Holders of Record

As of the close of business on March 4, 2024, there were 33 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 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.

Unregistered Sales of Equity Securities

None.

Issuer Purchases of Equity Securities

None.

Item 6. [Reserved]

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 therapeutics company focused on discovering, developing and commercializing oral small molecule therapies for patients with significant unmet needs in inflammatory diseases and oncology. 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. Our two lead drug candidates, zelnecirnon (RPT193) and tivumecirnon (FLX475), each target C-C motif chemokine receptor 4 ("CCR4"), a drug target that potentially has broad applicability in inflammatory diseases and oncology.

We are conducting a 16-week randomized, double-blind, placebo-controlled Phase 2b clinical trial to further evaluate the efficacy and safety of zelnecirnon as monotherapy in patients with moderate-to-severe atopic dermatitis ("AD"). The Phase 2b study will compare three oral dose levels of zelnecirnon (50, 200 and 400 mg once daily) to placebo with a treatment duration of 16 weeks and will enroll approximately 67 patients in each of the four cohorts (three active and one placebo). That study continued to enroll throughout 2023.

In March 2023, we initiated a global 14-week randomized, double-blind, placebo-controlled Phase 2a clinical trial to evaluate the efficacy and safety of zelnecirnon as an oral, once-daily monotherapy in patients with moderate-to-severe asthma. The global multicenter Phase 2a trial will assess the efficacy and safety of zelnecirnon in adult patients with moderate-to-severe Type 2-high asthma whose disease is partially controlled by standard medications. The double-blind, placebo-controlled study will compare 400 mg once-daily zelnecirnon to placebo in approximately 100 patients randomized 1:1. The primary endpoint is the proportion of patients who meet criteria for a "Loss of Asthma Control" event, defined by changes in lung function, medication usage or significant clinical change indicating a severe exacerbation.

On February 16, 2024, the U.S. Food and Drug Administration ("FDA") verbally notified us that a clinical hold has been placed on our Phase 2b trial of zelnecirnon in AD and its Phase 2a trial in asthma. The clinical hold determination was based on a serious adverse event of liver failure in one patient in the AD trial, the cause of which is currently unknown but has been characterized as potentially related to zelnecirnon. Dosing of zelnecirnon has been halted in both clinical trials, as has enrollment of new trial participants.

In November 2023, we announced safety and efficacy data from our Phase 2 trial of tivumecirnon in patients with advanced checkpoint-naïve non-small lung cancer ("NSCLC"). The trial evaluated tivumecirnon in combination with the anti-PD-1 checkpoint inhibitor pembrolizumab. In this cohort of NSCLC patients, 36 patients were evaluable for efficacy, of which 20 were PD-L1 positive (TPS $\geq$1%). In this PD-L1 positive subset of patients, the combination of tivumecirnon and pembrolizumab showed a 45% (9/20) confirmed overall response rate. In addition, the median PFS for the 20 patients was 6.3 months, with several patients continuing on study. The combination of tivumecirnon and pembrolizumab was generally well tolerated in this Phase 2 NSCLC cohort. Tivumecirnon has now been dosed in more than 300 patients with various advanced cancers and has been generally well tolerated; the combination with pembrolizumab has had no signal of increased immune-related toxicity over that expected with pembrolizumab alone.

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, 2023, we had an accumulated deficit of $484.7 million.

We have incurred net losses of $116.8 million and $83.8 million for the years ended December 31, 2023 and 2022, 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 product revenue or profits.

Since inception, we have financed our operations primarily through the sale of equity securities. In December 2022, we completed an underwritten public offering (the "2022 Public Offering") of 4,338,104 shares of common stock, at a public offering price of $18.50 per share and received approximately $75.0 million in net proceeds, after deducting underwriting discounts and other offering-related costs. In May 2022, we completed a sale of pre-funded warrants to purchase 4,000,000 shares of our common stock at a price per pre-funded warrant of $12.4999 and received approximately $49.8 million in net proceeds, after deducting offering expenses. As of December 31, 2023, we had cash and cash equivalents and marketable securities of $158.9 million and working capital of $139.9 million.

In August 2023, we filed a shelf registration statement on Form S-3 with the SEC, which was later declared effective, related to the sale and issuance of up to $450 million of the Company's securities, including up to $150 million shares of common stock that may be offered and sold from time to time in one or more "at-the-market" offerings pursuant to a Controlled Equity Offering^{SM} Sales Agreement (the "ATM Sales Agreement") with Cantor Fitzgerald & Co. ("Cantor") and Leerink Partners LLC. The ATM Sales Agreement replaced the Controlled Equity Offering^{SM} Sales Agreement, entered in November 2020, with Cantor and Stifel, Nicolaus & Company, Incorporated (the "Prior ATM Sales Agreement"). As of December 31, 2023, there were up to $150.0 million shares of common stock available for future issuance under the ATM Sales Agreement. No shares were sold under the ATM Sales Agreement or the Prior ATM Sales Agreement during the year ended December 31, 2023. During the period from January 1, 2024, through the date of filing of this Annual Report on Form 10-K, we sold 365,316 shares of common stock in "at the market" offerings pursuant to the ATM Sales Agreement, for net proceeds of $9.2 million, after deducting commissions and other offering related costs. As of the date of filing of this report there were up to $140.6 million shares of common stock available for future issuance under the ATM Sales Agreement. We believe our current cash and cash equivalents and marketable securities will be sufficient to fund our planned operations for a period of at least 12 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 our drug candidates are approved, launch commercial activities. Specifically, in the near term, we expect to incur substantial expenses relating to our ongoing and planned clinical trials, including efforts to resolve the clinical hold on the Phase 2b trial of zelnecirnon in AD and our Phase 2a trial in asthma, 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 we can generate significant revenue from sales of our drug candidates, if ever, we expect to finance our operations through equity or 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

Revenue

Revenue recognized during the prior year periods presented relates to the Hanmi Agreement that we entered into with Hanmi in December 2019. Pursuant to the Hanmi Agreement, we granted Hanmi an exclusive license to develop, manufacture and commercialize tivumecirnon and related compounds and products with respect to human cancers in the Hanmi Territory, and certain sublicense rights. We did not have any revenues after the second quarter of 2022, as all performance obligations under the Hanmi Agreement were substantially completed during that period.

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 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 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 our 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:

- costs 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 zelnecirnon and tivumecirnon 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 and marketable securities are invested in money market funds, corporate debt securities, commercial paper and U.S. government agency securities. Other income, net, consists primarily of interest earned on our cash and cash equivalents and marketable securities and remeasurement gains and losses on foreign currency transactions.

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 ("U.S. 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 collaboration agreement revenue consists 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 of cumulative revenue recognized 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, 2023, there was no remaining deferred revenue related to the Hanmi Agreement, as the performance obligations were substantially complete as of June 30, 2022. For the years ended December 31, 2023 and 2022, we recognized no revenue and $1.5 million, respectively.

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, which have inherent uncertainties and involve significant judgment.

Stock-Based Compensation Expense

We account for stock-based compensation arrangements with employees and non-employees in accordance with Accounting Standards Codification ("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. The fair value of each share of common stock underlying stock option grants is based on the closing price of our common stock on the Nasdaq Global Market as reported on the date of grant.

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.

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 – Since we have only recently become a public company and have only a limited trading history for our common stock, the expected volatility was estimated based on the average historical volatility for comparable publicly traded biopharmaceutical companies as well as our historical volatility 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.

The fair value of each purchase under our employee stock purchase plan ("ESPP") is estimated at the beginning of the offering period using the Black-Scholes option pricing model.

Assumptions we used in applying the Black-Scholes option-pricing model to determine the estimated fair value of our stock options granted involve inherent uncertainties and the application of significant judgment. As a result, if factors or expected outcomes change and we use significantly different assumptions or estimates, our equity-based compensation could be materially different.

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.

In accordance with the accounting standards for uncertain tax positions, we evaluate the recognition threshold and measurement attribute criteria for the financial statement recognition and measurement of tax positions taken or expected to be taken in a tax return. 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, 2023, our total deferred tax assets were $106.7 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 loss carryforwards ("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.

Recent Accounting Pronouncements

See Note 2 to our consolidated financial statements included in Part II, Item 8, "Financial Statements and Supplementary Data," of this Annual Report on Form 10-K for a description of recent accounting pronouncements applicable to our business.

Results of Operations

Comparison of the Years Ended December 31, 2023 and 2022

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

	Year Ended December 31,			
	2023	2022	$ Change	% Change
Revenue	$ —	$ 1,527	$ (1,527)	(100)%
Operating expenses:				
Research and development	101,002	67,082	33,920	51%
General and administrative	26,060	20,240	5,820	29%
Total operating expenses	127,062	87,322	39,740	46%
Loss from operations	(127,062)	(85,795)	(41,267)	48%
Other income, net	10,264	1,957	8,307	424%
Net loss	$ (116,798)	$ (83,838)	$ (32,960)	39%

Revenue

We did not recognize any revenue for the year ended December 31, 2023 and recognized $1.5 million for the year ended December 31, 2022, pursuant to the Hanmi Agreement as the performance obligations were substantially completed during the second quarter of 2022.

Research and Development Expenses

Research and development expenses increased $33.9 million, or 51%, to $101.0 million for the year ended December 31, 2023 from $67.1 million for the year ended December 31, 2022. The increase in research and development expenses was primarily due to an increase of $23.6 million in development expenses relating to zelnecirnon, an increase of $7.0 million in personnel and other costs, an increase of $2.7 million in stock-based compensation expense, an increase of $2.0 million in laboratory supplies and other expenses, an increase of $1.8 million in facilities costs and an increase of $1.4 million in consulting expenses, partially offset by a decrease of $4.1 million in development expenses relating to tivumecirnon and a decrease of $0.4 million in development expenses relating to other early stage programs. 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 zelnecirnon and tivumecirnon and advance other programs into the clinic.

The following is a comparison of research and development expenses for the years ended December 31, 2023 and 2022 (in thousands):

	Year Ended December 31,	
	2023	2022
External development expenses:		
Zelnecirnon (RPT193)	$ 38,410	$ 14,816
Tivumecirnon (FLX475)	10,123	14,179
Other programs	2,575	3,007
Internal research and development expenses	49,894	35,080
Total research and development expenses	$ 101,002	$ 67,082

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 and programs.

General and Administrative Expenses

General and administrative expenses increased $5.8 million, or 29%, to $26.1 million for the year ended December 31, 2023 from $20.2 million for the year ended December 31, 2022. The increase was primarily due to an increase of $2.8 million in higher personnel and other costs, an increase of $3.0 million in stock-based compensation expense and an increase of $0.3 million in professional fees, partially offset by a decrease of $0.3 million in facilities costs and other expenses. 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 $8.2 million to $10.2 million for the year ended December 31, 2023 from $2.0 million for the year ended December 31, 2022. The increase was driven primarily by higher interest income due to higher interest rates from invested cash balances for the year ended December 31, 2023.

Liquidity and Capital Resources; Plan of Operations

Since inception, we have financed our operations primarily through the sale of equity securities. In December 2022, we completed the 2022 Public Offering of 4,338,104 shares of common stock at a public offering price of $18.50 per share and received approximately $75.0 million in net proceeds, after deducting underwriting discounts and other offering-related costs. In May 2022, we completed the sale of pre-funded warrants to purchase 4,000,000 shares of our common stock at a price per pre-funded warrant of $12.4999 and received approximately $49.8 million in net proceeds, after deducting offering expenses. During the year ended December 31, 2022, we sold 209,349 shares of our common stock in “at the market” offerings pursuant to the Prior ATM Sales Agreement, for net proceeds of $5.0 million, after deducting commissions and other offering related costs. No shares were sold under the Prior ATM Sales Agreement or the ATM Sales Agreement during the year ended December 31, 2023. As of December 31, 2023, there was up to $150 million in shares of common stock available for future issuance under the ATM Sales Agreement. We had cash and cash equivalents and marketable securities of $158.9 million and working capital of $139.9 million as of December 31, 2023. Our cash equivalents and marketable securities consist of commercial paper, corporate bonds and U.S. government agency securities. Cash in excess of immediate requirements is invested in accordance with our investment policy, primarily with a view towards liquidity and capital preservation. Since inception, we have incurred net losses and negative cash flows from operations.

As of December 31, 2023, we had an accumulated deficit of $484.7 million. In addition, we expect to incur substantial additional costs in order to conduct research and development activities necessary to develop and commercialize our drug candidates. Additional capital will be needed to undertake these activities and we intend to raise such capital through the issuance of additional equity or debt, strategic alliances with other companies or other sources of financing. 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 and marketable securities 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 drug 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.

Additionally, the global financial markets have experienced significant disruptions due to various macroeconomic factors, including among other things, the impact of ongoing overseas conflicts, resulting in a general global economic slowdown. Furthermore, inflation rates, particularly in the United States and the United Kingdom, have increased to levels not seen in decades. In addition, the U.S. Federal Reserve has raised, and may further raise, interest rates in response to concerns about inflation. Increases in interest rates, especially if coupled with reduced government spending and volatility in financial markets, may further increase economic uncertainty and heighten these risks. Moreover, the failures of Silicon Valley Bank, Signature Bank and First Republic Bank have resulted in broader financial institution liquidity risk and concerns. If other banks and financial institutions fail or become insolvent in the future in response to financial conditions affecting the banking system and financial markets, our ability to access our cash and cash equivalents and marketable securities may be threatened and our ability to raise additional capital could be substantially impaired. If the disruptions and slowdown deepen or persist, we may not be able to access additional capital on favorable terms, or at all, which could in the future negatively affect our ability to pursue our business strategy. See “Risk Factors—Risks Related to Our Business” 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 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,	
	2023	2022
Net cash (used in) provided by:		
Operating activities	$ (97,048)	$ (70,771)
Investing activities	104,133	(45,490)
Financing activities	1,447	131,180
Net increase in cash and cash equivalents	$ 8,532	$ 14,919

Operating Activities

Net cash used in operating activities was $97.0 million for the year ended December 31, 2023, reflecting a net loss of $116.8 million, partially offset by net cash used by changes in operating assets and liabilities of $5.5 million and non-cash charges for primarily depreciation, amortization, stock-based compensation expense and non-cash lease expense totaling $14.3 million.

Net cash used in operating activities was $70.8 million for the year ended December 31, 2022, reflecting a net loss of $83.8 million and net cash used by changes in operating assets and liabilities of $1.4 million partially offset by non-cash charges for primarily depreciation, amortization, stock-based compensation expense and non-cash lease expense totaling $14.4 million.

Investing Activities

Cash provided by investing activities was $104.1 million for the year ended December 31, 2023, primarily from the proceeds from maturities of marketable securities of $266.7 million, partially offset by the purchase of marketable securities for $161.5 million and purchase of property and equipment of $1.1 million.

Cash used in investing activities was $45.5 million for the year ended December 31, 2022, primarily for the purchase of marketable securities for $190.9 million and purchase of property and equipment of $0.8 million, offset by the proceeds from maturities of marketable securities of $146.2 million.

Financing Activities

Net cash provided by financing activities was $1.4 million for the year ended December 31, 2023, from $1.4 million in net proceeds from our employee stock plans.

Net cash provided by financing activities was $131.2 million for the year ended December 31, 2022, primarily from the $75.0 million in net proceeds from our 2022 Public Offering, $49.8 million from our sale of pre-funded warrants, $5.0 million in net proceeds from the sale of shares under the Prior ATM Sales Agreement and $1.4 million in net proceeds from our employee stock plans.

Material Cash Requirements

Our material cash requirements in the short- and long-term consist of the following operational expenditures, a portion of which contain contractual or other obligations.

Operating expenditures. Our primary uses of cash and operating expenses relate to paying employees and consultants, administering clinical trials and providing technology and facility infrastructure to support our operations. Our research and development expenses in 2023 were $101.0 million and we expect to increase our investment in research and development expenses in 2024. Our general and administrative expenses were $26.1 million in 2023 and we expect to increase our general and administrative expenses to support our business growth in 2024. On a long-term basis, we manage future cash requirements relative to our long-term business plans.

Operating costs also relate to our building leases for our office and laboratory facilities expiring in 2025 through 2026 that contain rate escalations and options for us to extend the leases. Our future minimum lease payments as of December 31, 2023 were $7.7 million. Refer to Note 6 in the Notes to Financial Statements in Item 8 for further detail of our lease obligations.

Emerging Growth Company Status and Smaller Reporting Company Status

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 may take advantage of these provisions until December 31, 2024.

In addition, we are also a smaller reporting company as defined in the Exchange Act. We may continue to be a smaller reporting company even after we are no longer an emerging growth company. We may take advantage of certain of the scaled disclosures available to smaller reporting companies and will be able to take advantage of these scaled disclosures for so long as (i) our voting and non-voting common stock held by non-affiliates is less than $250.0 million measured on the last business day of our second fiscal quarter or (ii) our annual revenue is less than $100.0 million during the most recently completed fiscal year and our voting and non-voting common stock held by non-affiliates is less than $700.0 million measured on the last business day of our second fiscal quarter.

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

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. (the Company) as of December 31, 2023 and 2022, the related consolidated statements of operations and comprehensive loss, stockholders' equity and cash flows for each of the two years in the period ended December 31, 2023, 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, 2023 and 2022, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2023, 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.

San Mateo, California
March 7, 2024

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

	December 31, 2023	December 31, 2022
Assets		
Current assets:		
Cash and cash equivalents	$ 47,478	$ 38,946
Marketable securities	111,384	210,122
Prepaid expenses and other current assets	2,920	3,626
Total current assets	161,782	252,694
Property and equipment, net	2,448	2,539
Operating lease right-of-use assets	5,228	6,940
Other assets	3,871	4,036
Total assets	$ 173,329	$ 266,209
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 5,176	$ 3,365
Accrued expenses	14,103	8,656
Operating lease liabilities, current	2,448	2,171
Other current liabilities	109	32
Total current liabilities	21,836	14,224
Operating lease liabilities, non-current	4,458	6,819
Total liabilities	26,294	21,043
Commitments *(see note 6)*		
Stockholders' equity:		
Preferred stock, $0.0001 par value: 50,000,000 shares authorized; no shares issued and outstanding at December 31, 2023 and 2022	—	—
Common stock, $0.0001 par value; 500,000,000 shares authorized; 34,398,312 and 34,254,314 shares issued and outstanding at December 31, 2023 and 2022, respectively	3	3
Additional paid-in capital	631,611	613,073
Accumulated other comprehensive gain (loss)	103	(26)
Accumulated deficit	(484,682)	(367,884)
Total stockholders' equity	147,035	245,166
Total liabilities and stockholders' equity	$ 173,329	$ 266,209

See accompanying notes to consolidated financial statements.

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

	Year Ended December 31,	
	2023	2022
Revenue	$ —	$ 1,527
Operating expenses:		
Research and development	101,002	67,082
General and administrative	26,060	20,240
Total operating expenses	127,062	87,322
Loss from operations	(127,062)	(85,795)
Other income, net	10,264	1,957
Net loss	$ (116,798)	$ (83,838)
Other comprehensive income (loss):		
Foreign currency translation gain (loss)	(655)	627
Unrealized gain (loss) on marketable securities	784	(447)
Total comprehensive loss	$ (116,669)	$ (83,658)
Net loss per share, basic and diluted	$ (3.05)	$ (2.58)
Weighted average number of shares used in computing net loss per share, basic and diluted	38,338,161	32,540,406

See accompanying notes to consolidated financial statements.

RAPT THERAPEUTICS, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In thousands, except share amounts)

	Common Stock		Additional Paid-In Capital	Accumulated Deficit	Accumulated Other Comprehensive Income (Loss)	Total Stockholders' Equity
	Shares	Amount				
Balance at December 31, 2021	29,555,119	$ 3	$ 470,629	$ (284,046)	$ (206)	$ 186,380
Proceeds from sale of pre-funded warrants in private placement, net of issuance costs	—	—	49,785	—	—	49,785
Issuance of common stock from public offering, net of issuance costs	4,338,104		75,025			75,025
Issuances of common stock in "at the market" offerings, net of issuance costs	209,349	—	4,978	—	—	4,978
Issuances of common stock from employee stock plans	151,742	—	1,392	—	—	1,392
Stock-based compensation	—	—	11,264	—	—	11,264
Foreign currency translation gain	—	—	—	—	627	627
Unrealized loss on marketable securities	—	—	—	—	(447)	(447)
Net loss	—	—	—	(83,838)	—	(83,838)
Balance at December 31, 2022	34,254,314	3	613,073	(367,884)	(26)	245,166
Issuances of common stock from employee stock plans	143,998	—	1,447	—	—	1,447
Stock-based compensation	—	—	17,091	—	—	17,091
Foreign currency translation loss	—	—	—	—	(655)	(655)
Unrealized gain on marketable securities	—	—	—	—	784	784
Net loss	—	—	—	(116,798)	—	(116,798)
Balance at December 31, 2023	34,398,312	$ 3	$ 631,611	$ (484,682)	$ 103	$ 147,035

See accompanying notes to consolidated financial statements.

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

	Year Ended December 31,	
	2023	**2022**
Operating activities		
Net loss	$ (116,798)	$ (83,838)
Adjustments to reconcile net loss to net cash used in operating activities:		
Accretion of discounts on marketable securities	(5,736)	(296)
Depreciation and amortization	1,216	1,047
Stock-based compensation expense	17,091	11,264
Gain (loss) on foreign currency translation	(655)	627
Non-cash operating lease expense	2,335	1,760
Changes in operating assets and liabilities:		
Prepaid expenses and other assets	871	(1,421)
Accounts payable, accrued expenses and other current liabilities	7,335	3,710
Deferred revenue	—	(1,527)
Operating lease liabilities	(2,707)	(2,097)
Net cash used in operating activities	(97,048)	(70,771)
Investing activities		
Purchase of marketable securities	(161,497)	(190,856)
Proceeds from maturities of marketable securities	266,755	146,211
Purchase of property and equipment	(1,125)	(845)
Net cash provided by (used in) investing activities	104,133	(45,490)
Financing activities		
Proceeds from equity offerings, net of issuance costs	—	124,810
Proceeds from issuances of common stock in “at the market” offerings, net of issuance costs	—	4,978
Proceeds from issuance of common stock under employee stock plans	1,447	1,392
Net cash provided by financing activities	1,447	131,180
Net increase in cash and cash equivalents	8,532	14,919
Cash and cash equivalents at beginning of period	38,946	24,027
Cash and cash equivalents at end of period	$ 47,478	$ 38,946
Supplemental disclosures of non-cash investing information		
Right-of-use asset obtained in exchange for lease obligation	$ —	$ 8,063

See accompanying notes to consolidated financial statements.

RAPT THERAPEUTICS, INC.
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 inflammatory diseases and oncology. 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. The Company is located in South San Francisco, California.

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, 2023, the Company incurred a net loss of $116.8 million and used $97.0 million of cash in operations. At December 31, 2023, the Company had cash and cash equivalents and marketable securities of $158.9 million and working capital of $139.9 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 and marketable securities will provide sufficient funds to enable the Company to meet its obligations for at least 12 months from the filing date of this report.

Management's evaluation was based on the facts known as of the date of filing of this Annual Report on Form 10-K, including the impacts of the clinical hold that FDA has placed on the Phase 2b trial of zelnecirnon in AD and the Phase 2a trial in asthma.

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 and deregistered during the quarter ended June 30, 2023. All intercompany balances and transactions have been eliminated in consolidation.

Use of Estimates

The preparation of the consolidated 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. On an ongoing basis, management evaluates its critical accounting policies or estimates related to revenue recognition, clinical trial accruals, fair value of assets and liabilities and stock-based compensation. 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 amounts of expenses and revenue reported for each of the periods presented are affected by estimates and assumptions. 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 and marketable securities. Substantially all the Company's cash is held by two financial institutions. Such deposits may, at times, exceed federally insured limits. The Company invests its cash equivalents in highly rated money market funds and short-term marketable securities comprising commercial paper, corporate bonds and U.S. government agency securities.

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.

Marketable Securities

Marketable securities primarily consist of commercial paper, corporate debt securities and U.S. government agency securities. The Company has classified its marketable securities as available-for-sale and may sell these securities prior to their stated maturities. The Company views these marketable securities as available to support current operations and classifies marketable securities with maturities beyond 12 months as current assets. The Company's marketable securities are carried at estimated fair value, which is derived from independent pricing sources based on quoted prices in active markets for similar securities. Unrealized gains and losses are reported as a component of accumulated other comprehensive income (loss). The cost of marketable securities is adjusted for amortization of premiums and accretion of discounts to maturity, which is included in other income, net on the consolidated statements of operations.

All of the Company's available-for-sale investments are subject to a periodic impairment review. For each available-for-sale investment whose fair value is below its amortized cost, the Company determines if the impairment is a result of a credit-related loss or other factors using both quantitative and qualitative factors, including the length of time and extent to which the market value has been less than amortized cost, the financial condition and near-term prospects of the issuer and the Company's intent and ability to retain its investment in the issuer for a period of time sufficient to allow for any anticipated recovery in market value. If the impairment is a result of a credit-related loss, the Company recognizes an allowance for credit losses. If the impairment is not a result of a credit loss, the Company recognizes the loss in other comprehensive loss.

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, 2023 and 2022, the Company did not record any impairment losses on long-lived assets.

Leases

The Company adopted ASU No. 2016-02, *Leases (Topic 842)* on January 1, 2022 using the modified retrospective approach. The Company elected to apply the modified retrospective approach that allowed it to continue applying the guidance in effect, at the time of adoption, in the comparative periods presented in the Consolidated Balance Sheets and recognize a cumulative-effect adjustment to the opening balance of accumulated deficit on the date of adoption. The Company elected the package of practical expedients, which permits it not to reassess under the new standard the prior conclusions about lease identification, lease classification and initial direct costs. The Company also elected to combine lease components (for example, fixed rent payments) with non-lease components (for example, common-area maintenance costs) on the facilities asset class. Lastly, the Company elected the short-term lease practical expedients allowed under the standard and the practical expedient to use hindsight in determining the lease term for all its operating leases.

At inception of a contract, the Company determines whether an arrangement is or contains a lease. For all leases, the Company determines the classification as either operating leases or financing leases. Operating leases are included in operating lease right-of-use (“ROU”) assets and operating lease liabilities in the Company’s consolidated balance sheets.

Lease recognition occurs at the commencement date and lease liability amounts are based on the present value of lease payments over the lease term. The lease term may include options to extend or terminate the lease when it is reasonably certain that the Company will exercise that option. The Company uses an implicit rate when readily available, or its incremental borrowing rate based on the information available at lease commencement date, in determining the present value of lease payments. ROU assets represent the Company's right to use underlying assets for the lease term and operating lease liabilities represent the Company's obligation to make lease payments under the lease. ROU assets also include any lease payments made prior to the commencement date and exclude lease incentives received. Operating lease expense is recognized on a straight-line basis over the lease term. Lease agreements with both lease and nonlease components are generally accounted for together as a single lease component.

Revenue

License and collaborative agreements revenue consists 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 of cumulative revenue recognized 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.

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 determines employee, nonemployee 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. Forfeitures are recognized as they occur.

The fair value of restricted stock awards granted 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, was the Australian dollar. Accordingly, all monetary assets and liabilities of the subsidiary were translated into U.S. dollars at the current period-end exchange rates and non-monetary assets were translated using historical exchange rates. Income and expense elements were 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), net.

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. The cumulative adjustment resulting from the translation of financial statements to the reporting currency is recorded in other comprehensive income (loss).

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 gains and losses from marketable securities and 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

In November 2023, the FASB issued ASU No. 2023-07, Segment Reporting (Topic 280): Improvements to Reportable Segment Disclosures, which provides updates to qualitative and quantitative reportable segment disclosure requirements, including enhanced disclosures about significant segment expenses and increased interim disclosure requirements, among others. ASU No. 2023-07 is effective for fiscal years beginning after December 15, 2023, and interim periods in fiscal years beginning after December 15, 2024. Early adoption is permitted, and the amendments should be applied retrospectively. The Company believes the adoption of this standard will not have a material impact on its consolidated financial statement disclosures.

In December 2023, the FASB issued ASU No. 2023-09, Improvements to Income Tax Disclosures, which requires disclosure of disaggregated income taxes paid, prescribes standard categories for the components of the effective tax rate reconciliation, and modifies other income tax-related disclosures. ASU No. 2023-09 is effective for fiscal years beginning

after December 15, 2024 and allows for adoption on a prospective basis, with a retrospective option. Early adoption is permitted. The Company is currently evaluating the impact of this standard on the income tax disclosures within the 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, marketable securities, accounts payable and accrued expenses that approximate fair value due to their relatively short maturities.

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.

The Company estimates the fair values of investments in corporate debt securities, commercial paper and U.S. government agency securities using valuations obtained from third-party pricing services. The pricing services utilize industry standard valuation models, including both income and market-based approaches, for which all significant inputs are observable, either directly or indirectly, to estimate fair value. These inputs include reported trades of and broker/dealer quotes on the same or similar securities, issuer credit spreads, benchmark securities, prepayment/default projections based on historical data and other observable inputs.

Cash equivalents and marketable securities, all of which are classified as available-for-sale securities and measured at fair value on a recurring basis, consisted of the following (in thousands):

		As of December 31, 2023			
	Fair Value Hierarchy Level	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
Financial assets:					
Money market funds	Level 1	$ 10,869	$ —	$ —	$ 10,869
Corporate debt	Level 2	19,531	37	(9)	19,559
Asset-backed securities	Level 2	5,242	7	(4)	5,245
Commercial paper	Level 2	59,828	7	(8)	59,827
U.S. government agency securities	Level 2	63,206	91	(18)	63,279
Subtotal		158,676	142	(39)	158,779
Less: Cash equivalents		(47,395)	—	—	(47,395)
Marketable securities		$ 111,281	$ 142	$ (39)	$ 111,384

	Fair Value Hierarchy Level	As of December 31, 2022			
		Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
Financial assets:					
Money market funds	Level 1	$ 38,658	$ —	$ —	$ 38,658
Corporate debt	Level 2	71,149	30	(284)	70,895
Asset-backed securities	Level 2	105	—	(1)	104
Commercial paper	Level 2	71,328	—	—	71,328
U.S. government agency securities	Level 2	68,221	15	(441)	67,795
Subtotal		249,461	45	(726)	248,780
Less: Cash equivalents		(38,658)	—	—	(38,658)
Marketable securities		$ 210,803	$ 45	$ (726)	$ 210,122

As of December 31, 2023, the unrealized losses on the Company's securities that were in an unrealized loss position were caused by interest rate changes and were not attributable to credit losses. The Company does not intend to sell the securities that are in an unrealized loss position and the Company believes it is more likely than not that the investments will be held until recovery of the amortized cost bases. The Company did not record an allowance for credit losses or other impairment charges related to its marketable securities as of December 31, 2023 and 2022.

The following table presents the remaining contractual maturities of the Company's marketable securities as of December 31, 2023 (in thousands):

	December 31, 2023
Maturing in one year or less	$ 97,039
Maturing after one year through five years	14,345
Total	$ 111,384

4. Property and Equipment

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

	As of December 31,	
	2023	2022
Laboratory equipment	$ 7,399	$ 6,558
Leasehold improvements	3,295	3,295
Computer equipment	727	578
Furniture and fixtures	394	357
Total property and equipment	11,815	10,788
Less accumulated depreciation and amortization	(9,367)	(8,249)
Property and equipment, net	$ 2,448	$ 2,539

Depreciation and amortization expenses were $1.2 million and $1.0 million for the years ended December 31, 2023 and 2022, respectively.

5. Accrued Expenses

Accrued expenses consisted of the following (in thousands):

	As of December 31,	
	2023	2022
Accrued research and development expenses	$ 7,281	$ 3,473
Accrued compensation	6,303	4,618
Accrued professional and consulting services	341	327
Other	178	238
Total accrued expenses	$ 14,103	$ 8,656

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.

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 losses were accrued at either December 31, 2023 and 2022.

Leases

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. 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 contained scheduled rent increases over the lease term and an option for the Company to extend the lease for an additional five-year term.

In November 2022, the Company entered into an operating lease for 13,232 square feet of office facilities in South San Francisco, California, which expires in July 2025. The lease agreement contained an option to extend the lease for an additional six-month term.

Cash paid for amounts included in the measurement of operating lease liabilities for the year ended December 31, 2023 was $2.7 million and was included in net cash used in operating activities in the Company's consolidated statements of cash flows.

As of December 31, 2023, the weighted-average remaining lease term and discount rate for the Company's operating leases was 2.65 years and 8.21%, respectively.

The following table summarizes maturities of operating lease liabilities as of December 31, 2023 (in thousands):

2024	$ 2,855
2025	2,662
2026	2,137
Thereafter	—
Total future undiscounted lease payments	7,654
Less: Imputed interest	(748)
Total lease liabilities	$ 6,906

The following table summarizes the supplemental balance sheet information related to operating leases at December 31, 2023 (in thousands):

Operating leases	
Operating lease right-of-use assets	$ 5,228
Operating lease liabilities, current	2,448
Operating lease liabilities, non-current	4,458
Total operating lease liabilities	$ 6,906

For the years ended December 31, 2023 and 2022, the Company incurred $2.3 million and $1.7 million, respectively, of lease expense included in operating expenses in the consolidated statement of operations in relation to the operating lease. Variable lease expense was insignificant for the years ended December 31, 2023 and 2022. Rent expense was $2.9 million and $2.2 million in the years ended December 31, 2023 and 2022, respectively. The Company does not have any financing lease agreements as of December 31, 2023.

7. Collaboration Agreements

Collaboration and License Agreement with Hanmi

In December 2019, the Company entered into a Collaboration and License Agreement (the “Hanmi Agreement”), with Hanmi Pharmaceutical Ltd. ("Hanmi"), pursuant to which the Company granted Hanmi an exclusive license to develop, manufacture and commercialize tivumecirnon 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.

In consideration of such rights, under the Hanmi Agreement, the Company was entitled to $10.0 million, which consisted of an upfront payment of $4.0 million and a development milestone payment of $6.0 million that were received in December 2019 and April 2020, respectively. Additionally, the Company is eligible to receive contingent payments of up to $108.0 million upon the achievement of specified milestones, as well as double-digit royalties on future net sales of tivumecirnon in the Hanmi Territory.

The Company identified the following promised goods and services 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 certain Phase 2 clinical trials; and (5) the supply of tivumecirnon for use in Hanmi’s Phase 2 clinical trials for which Hanmi will reimburse the Company for the supply of tivumecirnon.

The Company determined that the identified performance obligations, except for the supply of tivumecirnon, 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 was $10.4 million, which consisted of the upfront fee of $4.0 million and an unconstrained development milestone payment of $6.0 million. In addition, Hanmi requested the Company to supply tivumecirnon, and as a result, the Company increased the transaction price by $0.4 million. Other future development milestones were constrained as their achievement was highly dependent on factors outside the Company’s control. 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 tivumecirnon in the Hanmi Territory.

The Company did not recognize revenue for the year ended December 31, 2023, and recognized revenue of $1.5 million for the year ended December 31, 2022 , pursuant to the Hanmi Agreement. As of December 31, 2023, there was no remaining deferred revenue related to the Hanmi Agreement, as the performance obligation of providing Hanmi with the necessary know-how to develop tivumecirnon in the Hanmi Territory was substantially complete as of the second quarter of 2022.

Clinical Trial Collaboration and Supply Agreement with Merck

In November 2018, the Company entered into a clinical trial collaboration and supply agreement with an affiliate of Merck (known as MSD outside the United States and Canada) under which the Company will conduct a clinical trial evaluating tivumecirnon in combination with pembrolizumab (KEYTRUDA®), Merck's anti-PD-1 therapy, in patients with advanced cancers. The Company is the sponsor of the clinical trial, and Merck will supply pembrolizumab for use in the clinical trial. In March 2022 and February 2024, the Company and Merck amended the agreement to provide for additional supply of pembrolizumab.

8. Common Stock

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, 2023 or December 31, 2022.

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

	Year Ended December 31,	
	2023	2022
Options issued and outstanding under the 2019 Equity Incentive Plan and 2015 Stock Plan	4,099,947	2,993,280
Restricted stock units issued and outstanding under the 2019 Equity Incentive Plan	13,500	27,000
Options available for future grants	3,032,820	2,820,341
Pre-funded warrants issued and outstanding	4,000,000	4,000,000
Shares reserved under the 2019 Employee Stock Purchase Plan	410,522	498,193
Total	11,556,789	10,338,814

In August 2023, the Company filed a shelf registration statement on Form S-3 with the SEC, which was later declared effective, related to the sale and issuance of up to $450 million of the Company's securities, including up to $150 million of shares of common stock that may be offered and sold from time to time in one or more "at-the-market" offerings pursuant to a Controlled Equity Offering℠ Sales Agreement (the "ATM Sales Agreement") with Cantor Fitzgerald & Co. ("Cantor") and Leerink Partners LLC. The ATM Sales Agreement replaced the Controlled Equity Offering℠ Sales Agreement, entered in November 2020, with Cantor and Stifel, Nicolaus & Company, Incorporated (the "Prior ATM Sales Agreement"). The ATM Sales Agreement provides for the sale and issuance of shares of common stock having an aggregate offering price of up to $150.0 million. As of December 31, 2023, there were up to $150 million of shares of common stock available for future issuance under the ATM Sales Agreement. No shares were sold under the ATM Sales Agreement or the Prior ATM Sales Agreement during the year ended December 31, 2023. During the year ended December 31, 2022, the Company sold 209,349 shares of common stock in "at the market" offerings pursuant to the Prior ATM Sales Agreement, for net proceeds of $5.0 million, after deducting commissions and other offering related costs. During the period from January 1, 2024 through the date of filing of this Annual Report on Form 10-K, the Company sold 365,316 shares of common stock in "at the market" offerings pursuant to the ATM Sales Agreement, for net proceeds of $9.2 million, after deducting commissions and other offering related costs. As of the date of filing of this report there were up to $140.6 million shares of common stock available for future issuance under the ATM Sales Agreement.

In December 2022, the Company completed an underwritten public offering ("2022 Public Offering") of 4,338,104 shares of common stock, including 284,049 shares of common stock issued in connection with the exercise of the over-allotment option by the underwriters, at a public offering price of $18.50 per share. The Company received approximately $75.0 million in net proceeds from the 2022 Public Offering, after deducting underwriting discounts and other offering-related costs.

In May 2022, through a private placement financing, the Company issued pre-funded warrants to purchase an aggregate of 4,000,000 shares of the Company's common stock. Each pre-funded warrant has an exercise price of $0.0001 per share. The purchase price per pre-funded warrant was $12.4999 (representing the $12.50 per share closing price of the common stock on May 24, 2022, less the exercise price of $0.0001 per pre-funded warrant). The private placement financing of the pre-funded warrants resulted in net proceeds of $49.8 million, after deducting $0.2 million of offering expenses. As of December 31, 2023, all the pre-funded warrants issued in the private placement were outstanding.

The pre-funded warrants provide that the holder will not have the right to exercise any portion of the pre-funded warrants if such holder, together with its affiliates, would beneficially own in excess of 9.99% of the number of shares of the Company's common stock outstanding immediately after giving effect to such exercise (the "Beneficial Ownership Limitation"); provided, however, that the holder may increase or decrease the Beneficial Ownership Limitation by giving 61 days' notice to the Company, but not to any percentage in excess of 19.99%.

The pre-funded warrants were classified as a component of permanent equity in the Company's consolidated balance sheet as they are freestanding financial instruments that are immediately exercisable, do not embody an obligation for the Company to repurchase its shares and permit the holders to receive a fixed number of shares of common stock upon exercise.

9. Stock-Based Compensation

Stock Option Plan

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

In November 2019, the Company's board of directors adopted the 2019 Equity Incentive Plan (the "2019 Plan" and collectively with the 2015 Plan, the "Option Plans"). Upon the effectiveness of the 2019 Plan, the 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, 2023, the Company had 3,032,820 shares of common stock available for grant under the Option Plans. In addition, the number of shares reserved for issuance under the 2019 Plan automatically increases 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 Option Plans provide 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. The fair value of the Company's common stock is based on the closing price of its common stock on the date of grant. As of January 1, 2023, an additional 1,370,173 shares of common stock were reserved for issuance pursuant to the automatic increase to the authorized shares under the 2019 Plan.

Employee Stock Purchase Plan

In October 2019, the Company adopted the 2019 Employee Stock Purchase Plan (the "2019 ESPP"). The Company reserved 240,336 shares of common stock pursuant to purchase rights to be granted to the Company's employees. The 2019 ESPP provides that the number of shares reserved and available for issuance automatically increases on January 1 of each calendar year, beginning January 1, 2020, by the lesser of (1) 1.0% of the total number of shares of common stock outstanding on December 31 of the preceding calendar year, (2) 240,336 shares or (3) a number determined by the board of

directors that is less than (1) and (2). As of January 1, 2023, no additional shares of common stock were authorized for issuance pursuant to the annual automatic increase to the authorized shares under the 2019 ESPP.

Under the 2019 ESPP, eligible employees are granted rights to purchase shares of common stock, which can be funded through payroll deductions that cannot exceed 15% of each employee's compensation. The 2019 ESPP generally provides for a 24-month offering period, which includes four six-month purchase periods. At the end of each purchase period, eligible employees are permitted to purchase shares of common stock at 85% of the lower of fair market value at the beginning of the offering period or fair market value at the end of the purchase period. During the years ended December 31, 2023 and 2022, employees purchased 87,671 shares at weighted average price of $12.34 and 59,066 shares at a weighted average exercise price of $12.86, respectively. The 2019 ESPP is considered a compensatory plan and the Company recorded stock-based compensation expense of $1.3 million and $0.9 million for the years ended December 31, 2023 and 2022, respectively.

Stock Options

Stock option activity under the 2019 Plan is set forth below for the year ended December 31, 2023:

	Number of Shares Outstanding	Weighted Average Exercise Price Per Share	Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value (in thousands)
Balances at December 31, 2022	2,993,280	$ 18.95	7.9	$ 9,425
Stock options granted	1,218,608	25.61		
Stock options exercised	(51,027)	9.45		
Stock options cancelled	(60,914)	22.23		
Balances at December 31, 2023	4,099,947	$ 21.00	7.6	$ 23,206
Vested and expected to vest at December 31, 2023	4,099,947	21.00	7.6	$ 23,206
Exercisable at December 31, 2023	2,366,831	19.27	6.8	$ 17,598

The aggregate intrinsic values of options outstanding, exercisable, vested and expected to vest were calculated as the difference between the exercise price of the underlying awards and the quoted price of the Company's common stock for options that were in-the-money as of December 31, 2023.

The options granted in the years ended December 31, 2023 and 2022 had a weighted average per share grant-date fair value of $20.20 and $14.82, respectively, and a total grant date fair value of $24.6 million and $16.8 million, respectively.

The aggregate intrinsic value of stock options exercised in the years ended December 31, 2023 and 2022 was $0.7 million and $1.3 million, respectively. Cash received from stock option exercises were $0.5 million and $0.7 million for the years ended December 31, 2023 and 2022, respectively. The Company issues new shares of common stock upon exercise of options. In connection with these exercises, there was no tax benefit realized by the Company due to its current loss position.

The aggregate fair value of options that vested in the years ended December 31, 2023 and 2022 was $15.2 million and $9.7 million, respectively.

Restricted Stock Units

Restricted Stock Units ("RSU") activity under the 2019 Plan is set forth below for the year ended December 31, 2023:

	Number of Shares Outstanding	Weighted Average Grant Date Fair Value Per Share
Balances at December 31, 2022	27,000	$ 44.66
RSUs granted	—	—
RSUs vested and settled	(13,500)	44.66
RSUs forfeited	—	—
Balances at December 31, 2023	13,500	$ 44.66

Employee stock option valuation

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.

Expected volatility

Since the Company recently became a public company and has only a limited trading history for its common stock, the expected volatility was estimated based on the average historical volatility for comparable publicly traded biopharmaceutical companies and our historical volatility 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.

The assumptions used to value employee and non-employee stock option awards granted under the Option Plans during the years ended December 31, 2023 and 2022, using the Black-Scholes option pricing model, were as follows:

	For the Year Ended December 31,	
	2023	2022
Fair value	$11.25 - $23.70	$10.35 - $28.63
Expected term (in years)	5.87 - 6.06	5.79 - 6.08
Volatility	94.9% - 97.8%	89.8% - 94.3%
Risk-free interest rate	3.46% - 4.71%	1.42% - 4.09%
Dividend yield	—	—

Employee stock purchase plan

The fair value of the rights granted to employees under the 2019 ESPP was estimated using a Black-Scholes option-pricing model with the following valuation assumptions:

	For the Year Ended December 31,	
	2023	2022
Fair value	$4.79 - $12.12	$6.53 - $14.89
Expected term (in years)	0.50 - 2.00	0.50 - 2.00
Volatility	64.3% - 93.2%	91.0% - 101.5%
Risk-free interest rate	4.14% - 5.51%	1.49% - 4.75%
Dividend yield	—	—

Stock-based compensation expense

Total stock-based compensation expense recognized for stock options and RSUs granted to both employees and non-employees and for the employee stock purchase plan was as follows (in thousands):

	For the Year Ended December 31,	
	2023	2022
Research and development	$ 7,941	$ 5,206
General and administrative	9,150	6,058
Total stock-based compensation expense	$ 17,091	$ 11,264

As of December 31, 2023, unrecognized stock-based compensation cost related to outstanding unvested stock options and RSUs that are expected to vest was $29.2 million. This unrecognized stock-based compensation cost is expected to be recognized over 2.6 years.

10. Income Taxes

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

	December 31,	
	2023	2022
United States	$ (116,798)	$ (89,223)
Foreign	—	5,385
	$ (116,798)	$ (83,838)

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

	December 31,	
	2023	2022
Federal tax	21.0%	21.0%
Stock-based compensation	(0.9)	(0.7)
Research and development tax credit	2.4	2.5
Foreign losses not benefited	—	1.8
Global Intangible Low-taxed Income (GILTI)	—	(1.4)
Change in valuation allowance	(22.4)	(24.5)
Other	(0.1)	1.3
Income tax expense	—%	—%

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.

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

	December 31,	
	2023	2022
Deferred tax assets:		
Net operating loss carryforwards	$ 58,248	$ 52,818
Federal and state research and development tax credits	12,601	9,834
Accrued liabilities and reserves	1,234	983
Stock-based compensation	6,238	3,871
Depreciation and amortization	689	672
Lease liability	1,450	1,888
Research and development capitalized expenditures	27,290	11,834
Gross deferred tax assets	107,750	81,900
Valuation allowance	(106,652)	(80,443)
Deferred tax liabilities:		
Right of use asset	(1,098)	(1,457)
Gross deferred tax liabilities	(1,098)	(1,457)
Net deferred taxes	$ —	$ —

In accordance with the 2017 Tax Act, research and experimentation (R&E) expenses under Internal Revenue Code Section 174 are required to be capitalized beginning in 2022. R&E expenses are required to be amortized over a period of 5 years for domestic expenses and 15 years for foreign expenses. As a result of this provision of the 2017 Tax Act, deferred tax assets related to capitalized research expenses increased by $15.5 million and $11.8 million during the years ended December 31, 2023 and 2022, respectively.

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, 2023 and 2022, 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 $26.2 million and $19.0 million during the years ended December 31, 2023 and 2022, respectively. The increase in the valuation allowance is mainly related to the capitalization of research and development expenses under Internal Revenue Code Section 174 and an increase in net operating loss carryforwards incurred during the respective taxable years.

As of December 31, 2023 and 2022, the Company had federal net operating loss carryforwards of approximately $273.3 million and $247.5 million, respectively. The federal net operating loss carryforwards generated during and after fiscal 2018 are carried forward indefinitely, while all others, along with the federal tax credit carryforwards, expire in years beginning in 2035. As of December 31, 2023 and 2022, the Company had state net operating loss carryforwards of approximately $12.1 million, which begin to expire in 2035 and are available to offset future taxable income. As of December 31, 2023 and 2022, the Company had federal research and development tax credit carryforwards of approximately $10.2 million and $7.8 million, respectively. As of December 31, 2023 and 2022, the Company had state research and development tax credit carryforwards of approximately $8.4 million and $6.7 million, respectively. Moreover, as of December 31, 2023, the Company recorded federal and state reserves of approximately $2.6 million and $2.1 million, 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. On February 9, 2022, California Senate Bill 113 "SB 113" was signed into law. SB 113 lifted the limitation for California NOL and Credit utilization disallowed by California Assembly Bill 85. Given the Company's loss position, the new legislations did not impact the Company's tax provision. The Company will continue to monitor possible California net operating loss and credit limitation in future periods.

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.

A reconciliation of the beginning and ending amounts of unrecognized tax benefits for the years ended December 31, 2023 and 2022 resulting primarily from research and development tax credits claimed for both U.S. and foreign operations on the Company's annual tax returns were as follows (in thousands):

	December 31,	
	2023	2022
Balance at beginning of year	$ 3,663	$ 4,434
Additions on tax positions related to prior years	(3)	(1,530)
Additions on tax positions related to current year	1,014	759
Balance at end of year	$ 4,674	$ 3,663

The Company does not expect that its uncertain tax positions will materially change in the next 12 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, 2023.

The Company files income tax returns with varying statutes of limitations in the United States and various states. 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.

The Inflation Reduction Act of 2022 was signed into law on August 16, 2022, and contained several tax provisions to curb inflation by reducing the deficit, lowering prescription drug prices, investing into domestic energy production while promoting clean energy, and introduced the topic of corporate alternative minimum tax on applicable corporations. There is no impact to the Company's current tax provision from this new legislation.

11. 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, 2023 and 2022 (in thousands, except share and per share data):

	Year Ended December 31,	
	2023	2022
Numerator:		
Net loss	$ (116,798)	$ (83,838)
Denominator:		
Weighted-average shares used to compute net loss per share, basic and diluted	38,338,161	32,540,406
Net loss per share, basic and diluted	$ (3.05)	$ (2.58)

For the years ended December 31, 2023 and 2022, 4,000,000 pre-funded warrants to purchase the Company's shares of common stock, issued in the May 2022 private placement financing (see Note 8), were included in the basic and diluted net loss per share calculation.

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

	As of December 31,	
	2023	2022
Stock options issued and outstanding under the 2019 Equity Incentive Plan and 2015 Stock Plan	4,099,947	2,993,280
Estimated shares issuable under the 2019 ESPP	21,904	14,276
RSUs subject to future vesting	13,500	27,000
Total	4,135,351	3,034,556

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, has evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2023, the end of the period covered by this Annual Report on Form 10-K. Management's assessment of internal control over financial reporting was conducted using the criteria defined in the *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based upon such evaluation, our Principal Executive Officer and Principal Financial Officer have concluded that our disclosure controls and procedures were effective at the reasonable assurance level as of such date.

Changes in Internal Control over Financial Reporting

Management determined that, as of December 31, 2023, there were no changes in our internal control over financial reporting that occurred during the fiscal quarter then ended that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Management's Annual Report on Internal Control Over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f) and 15(d)-15(f). Our internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of the financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures are being made only in accordance with authorizations of our management and directors; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the financial statements.

Internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements prepared for external purposes in accordance with generally accepted accounting principles. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Our management, with the participation of our principal executive officer and principal financial officer, conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on our evaluation under the framework in Internal Control – Integrated Framework, management concluded that our internal control over financial reporting was effective as of December 31, 2023.

This Annual Report on Form 10-K does not include an attestation report of our independent registered public accounting firm on our internal control over financial reporting due to an exemption established by the JOBS Act for "emerging growth companies."

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.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections.

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by this item will be included in the section entitled "Election of Directors," "Executive Officers," "Corporate Governance and Board Matters" and "Delinquent Section 16(a) Reports" of our definitive Proxy Statement for the 2024 Annual Meeting of Stockholders, 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 (the "Code of Conduct") that applies to all directors, officers and employees of the Company, is available on our website at www.rapt.com. We intend to promptly disclose on our website or in a Current Report on Form 8-K in the future (i) the date and nature of any amendment (other than technical, administrative or other non-substantive amendments) to the Code of Conduct that applies to our principal executive officer, principal financial officer, principal accounting officer or controller or persons performing similar functions and relates to any element of the code of ethics definition enumerated in Item 406(b) of Regulation S-K and (ii) the nature of any waiver, including an implicit waiver, from a provision of the Code of Conduct that is granted to one of these specified individuals that relates to one or more of the elements of the code of ethics definition enumerated in Item 406(b) of Regulation S-K, the name of such person who is granted the waiver and the date of the waiver.

Item 11. Executive Compensation.

The information required by this Item will be included in the sections entitled "Executive Compensation" and "Director Compensation" 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 included in the section entitled "Security Ownership of Certain Beneficial Owners and Management" and "Executive Compensation—Equity Compensation Plan Information" 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 included in the sections entitled "Transactions with Related Persons and Indemnification" and "Corporate Governance and Board Matters—Independence of the Board of Directors" 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 Accountant Fees and Services.

The information required by this Item will be included in the section entitled "Ratification of Selection of Independent Registered Public Account Firm" 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				Filed Herewith
		Schedule Form	File Number	Exhibit	Filing Date	
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	10-K	001-38997	4.2	03/30/20	
4.3	Form of Pre-Funded Warrant	8-K	001-38997	4.1	5/31/2022	
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+	Amended and Restated Non-Employee Director Compensation Policy	10-Q	001-38997	10.1	09/30/22	
10.14+	Amended and Restated Non-Employee Director Compensation Policy	10-Q	001-38997	10.1	8/11/2023	
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^	Amendment No. 1, dated April 20, 2022, to the Clinical Trial Collaboration and Supply Agreement, dated as of November 1, 2018, by and between MSD International GmbH and RAPT Therapeutics, Inc.	10-K	001-38997	10.19	03/14/2023	
10.21^	Amendment No. 2, dated February 1, 2024, to the Clinical Trial Collaboration and Supply Agreement, dated as of November 1, 2018, by and between MSD International GmbH and RAPT Therapeutics, Inc.					X
10.22#	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	

10.23#*	Securities Purchase Agreement, dated May 24, 2022, by and between RAPT Therapeutics, Inc. and the investor party thereto	8-K	001-38997	10.1	5/31/2022	
10.24	Registration Rights Agreement, dated May 27, 2022, by and between RAPT Therapeutics, Inc. and the investor party thereto	8-K	001-38997	10.2	5/31/2022	
21.1	List of Subsidiaries					X
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
97+	Incentive Compensation Recoupment Policy					X

101.INS	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document	X
101.SCH	Inline XBRL Taxonomy Extension Schema 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	

+ 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.
#*Schedules and exhibits have been omitted pursuant to Item 601(a)(5) of Regulation S-K. A copy of any omitted schedule and/or exhibit will be furnished to the SEC upon request.
† 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.
^ Pursuant to Item 601(b)(10)(iv) of Regulation S-K promulgated by the Securities and Exchange Commission, certain portions of this exhibit have been redacted. The Registrant hereby agrees to furnish supplementally to the Securities and Exchange Commission, upon its request, an unredacted copy of this exhibit.

The agreements and other documents filed as exhibits to this Annual Report on Form 10-K are not intended to provide factual information or other disclosure other than with respect to the terms of the agreements or other documents themselves, and you should not rely on them for that purpose. In particular, any representations and warranties made by us in these agreements or other documents were made solely within the specific context of the relevant agreement or document and may not describe the actual state of affairs as of the date they were made or at any other time.

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 7, 2024

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.

Signature	Title	Date
/s/ Brian Wong, M.D., Ph.D. Brian Wong, M.D., Ph.D.	President, Chief Executive Officer and Director *(principal executive officer)*	March 7, 2024
/s/ Rodney Young Rodney Young	Chief Financial Officer and Secretary *(principal financial officer and principal accounting officer)*	March 7, 2024
/s/ William Rieflin William Rieflin	Chair of the Board of Directors	March 7, 2024
/s/ Michael F. Giordano, M.D. Michael F. Giordano, M.D.	Director	March 7, 2024
/s/ Mary Ann Gray, Ph.D. Mary Ann Gray, Ph.D.	Director	March 7, 2024
/s/ Linda Kozick Linda Kozick	Director	March 7, 2024
/s/ Lori Lyons-Williams Lori Lyons-Williams	Director	March 7, 2024
/s/ Wendye Robbins, M.D. Wendye Robbins, M.D.	Director	March 7, 2024

Exhibit 10.21

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS BOTH (I) NOT MATERIAL AND (II) THE TYPE THAT THE REGISTRANT TREATS AS PRIVATE AND CONFIDENTIAL

Rapt Therapeutics
AMENDMENT NO. 2 TO CLINICAL TRIAL COLLABORATION AND SUPPLY AGREEMENT

This Amendment No. 1 ("**Amendment No. 2**") to the Agreement (as defined below), is entered into as of the date of last signature hereunder ("**Amendment No. 2 Effective Date**"), is by and among MSD International GmbH ("**MSDIG**"), MSD International Business GmbH ("**MSDIB**" and, collectively with MSDIG, "**MSD**"), each having a place of business at Tribschenstrasse 60, 6005 Luzern, Switzerland, and Rapt Therapeutics ('RAPT") having a place of business at 561 Eccles Avenue, South San Francisco, CA, 94080 MSD and RAPT are each referred to herein individually as a "**Party**" and, collectively, the "**Parties**".

RECITALS

A. WHEREAS MSD International GmbH ("MSDIG"), MSD International Business GmbH ("MSDIB" and, collectively with MSDIG, "MSD"), and RAPT Therapeutics entered into that certain Clinical Trial Collaboration and Supply Agreement November 1, 2018 (the "**Agreement**"). This Amendment No. 2 to the Agreement (as defined below), is entered into as of the date of last signature hereunder ("Amendment No.2 Effective Date"),

B. WHEREAS, MSDIG has assigned all its rights and obligations under the Agreement to MSD, in accordance with Section 18 and MSD has accepted and assumed such rights and obligations; and

C. WHEREAS MSD and Rapt Therapeutics desire to amend the Agreement by modifying the following: (a) the address for delivery of notices of MSD; and (b) amending and restating Appendix B (Supply of Compound) of the Agreement; all on the terms and conditions set forth in the Agreement and this Amendment No. 2.

NOW, THEREFORE, in consideration of the foregoing premises and the mutual covenants herein contained, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby agree as follows:

1. Certain Definitions. Capitalized terms used in this Amendment No. 2 and not defined herein shall have the meanings given to them in the Agreement.

2. Amendments to the Agreement. The Agreement is hereby amended as follows:

2.1 Section 22 of the Agreement shall be replaced with the following to reflect the new addresses for MSDIG and MSDIB:

If to MSD, to:

If to Merck, to:

MSD International Business GmbH
Tribschenstrasse 60
6005 Luzern
Switzerland
Attention: Director

With copies (which shall not constitute notice to):

Merck Sharp & Dohme LLC
126 E. Lincoln Avenue
P.O. Box 2000
Rahway, NJ 07065-0900
Attention: Office of Secretary
Assistant General Counsel, Corporate Transactions
Email: office.secretary@merck.com

Merck Sharp & Dohme LLC
351 North Sumneytown Pike
P.O. Box 1000
Upper Gwynedd, PA 19454-2505
Attention: Senior Vice President, Research Science

and Merck's Alliance Manager, at the most recent email address provided by Merck.

2.2 Appendix B to the Agreement shall be deleted in its entirety and replaced with the new Appendix B attached to this Amendment No. 2.

3. General.

3.1 This Amendment No. 2 shall amend and is incorporated into and made part of the Agreement. The Agreement, as modified by this Amendment No. 2, together with the Appendices (which are incorporated herein by reference) attached hereto, contain the entire understanding of the Parties with respect to the subject matter hereof. Any other express or implied agreements and understandings, negotiations, writings, and commitments, either oral or written, with respect to the subject matter hereof are superseded by the terms of the Agreement, as modified by this Amendment No. 2. All other terms and conditions of the Agreement not specifically amended by this Amendment No. 2 shall remain in full force and effect.

3.2 In the event of any conflict between the terms of the Agreement and the terms of this Amendment No. 2, the terms of this Amendment No. 2 shall govern and prevail.

3.3 This Amendment No. 2 shall be governed and construed in accordance with the laws of the State of New York, without reference to any rules of conflict of laws.

3.4 On and after the Amendment No. 2 Effective Date, each reference in the Agreement to this "Agreement", "hereunder", "herein", "hereof" or words of the like import referring to the Agreement shall mean and be a reference to the Agreement as amended by this Amendment No. 2.

3.5 This Amendment No. 2 may be executed in two (2) or more counterparts (including by way of electronic transmission), each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. The Parties agree that this Amendment No. 2 can be signed using a DocuSign® electronic signature or other method of electronic signature and delivery. Such electronic signature is the legally binding equivalent to a Party's handwritten signature, and it has the same validity, enforceability and meaning as a handwritten signature, and the Parties hereby waive any objection to the contrary.

[Signature page follows]

IN WITNESS WHEREOF, the Parties have caused this Amendment No. 2 to be executed by their duly authorized representatives.

RAPT Therapeutics
By: /s/ Rodney Young

Rodney Young
Name

Chief Financial Officer
Title

January 30, 2024
Date

MSD International Business GmbH

By: /s/ Franz Escherich

Franz Escherich
Name

Director
Title

February 1, 2024
Date

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS APPENDIX, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS BOTH (I) NOT MATERIAL AND (II) THE TYPE THAT THE REGISTRANT TREATS AS PRIVATE AND CONFIDENTIAL

Amendment to SUPPLY OF COMPOUND
(MSD Tracking # [***])
(Collaborator Study Number: [***])

Schedule of Deliveries for FLX475[1,2]

Delivery Date	Quantity of Tablets			
	5 mg	25 mg	50 mg	75 mg
[***][1]	[***]	[***]	[***]	[***]
[***][1]	[***]	[***]	[***]	[***]
[***][1]	[***]	[***]	[***]	[***]
[***] (actual)	[***]	[***]	[***]	[***]
[***][1] (actual)	[***]	[***]	[***]	[***]
[***][2]*	[***]	[***]	[***]	[***]
Total	[***]	[***]	[***]	[***]

***For the year [***], RAPT anticipates shipping a total of [***] tablets to the sites**

Schedule of Deliveries for MSD Compound1,2,3

Delivery Date	Quantity of Vials (Liquid [***] vial)
[***][1]	[***]
[***][1]	[***]
[***][1]	[***]
[***][1]	[***]
[***][1]	[***]
[***][1]	[***]
[***][1]	[***]
[***][1]	[***]
[***][1]	[***]
[***][1]	[***]
[***][1]	[***]
Subtotal	[***]
[***][2,3]	[***]
Total	[***]

Notes:
1) [***]
2) [***]
3) [***]

Exhibit 21.1

SUBSIDIARIES of RAPT THERAPEUTICS, INC.

(as of December 31, 2023)

NAME OF SUBSIDIARY	COUNTRY OF FORMATION
None	

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

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

(1) Registration Statement (Form S-8 No. 333-234448) pertaining to the 2015 Stock Plan, the 2019 Equity Incentive Plan and the 2019 Employee Stock Purchase Plan of RAPT Therapeutics, Inc.,

(2) Registration Statements (Form S-8 Nos. 333-237487 and 333-270523) pertaining to the 2019 Equity Incentive Plan of RAPT Therapeutics, Inc.,

(3) Registration Statements (Form S-8 Nos. 333-254127 and 333-263426) pertaining to the 2019 Equity Incentive Plan and the 2019 Employee Stock Purchase Plan of RAPT Therapeutics, Inc.; and

(4) Registration Statements (Form S-3 Nos. 333-265812 and 333-273910) of RAPT Therapeutics, Inc.

of our report dated March 7, 2024, 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, 2023.

/s/ Ernst & Young LLP

San Mateo, California
March 7, 2024

Exhibit 31.1

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 and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 7, 2024

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

Exhibit 31.2

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 and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 7, 2024

By: /s/ Rodney Young
Rodney Young
Chief Financial Officer and Secretary
(Principal Financial Officer and Principal Accounting Officer)

Exhibit 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

I, Brian Wong, M.D. Ph.D., Chief Executive Officer of RAPT Therapeutics. Inc. (the "Company") hereby certify pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, (the "Exchange Act") and Chapter 36 of Title 18 United State Code Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

1. the Annual Report of Company on Form 10-K (the "Annual Report") for the year ended December 31, 2023 fully complies with the requirements of Section 13(a) or 15(d) of the Exchange Act; and
2. the information contained in the Annual Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 7, 2024

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

Exhibit 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

I, Rodney Young, Chief Financial Officer of RAPT Therapeutics. Inc. (the "Company") hereby certify pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, (the "Exchange Act") and Chapter 36 of Title 18 United State Code Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

1. the Annual Report of the Company on Form 10-K (the "Annual Report") for the year ended December 31, 2023 fully complies with the requirements of Section 13(a) or 15(d) of the Exchange Act; and
2. the information contained in the Annual Report fairly presents, in all material respects, the financial condition and results of operations of RAPT Therapeutics, Inc.

Date: March 7, 2024

By: /s/ Rodney Young
Rodney Young
Chief Financial Officer and Secretary
(Principal Financial Officer and Principal Accounting Officer)

Exhibit 97

RAPT Therapeutics, Inc.

Incentive Compensation Recoupment Policy

October 23, 2023

1. Introduction

The Compensation Committee (the "***Compensation Committee***") of the Board of Directors (the "***Board***") of RAPT Therapeutics, Inc., a Delaware corporation (the "***Company***"), has determined that it is in the best interests of the Company and its stockholders to adopt this Incentive Compensation Recoupment Policy (this "***Policy***") providing for the Company's recoupment of Recoverable Incentive Compensation that is received by Covered Officers of the Company under certain circumstances. Certain capitalized terms used in this Policy have the meanings given to such terms in Section 3 below.

This Policy is designed to comply with, and shall be interpreted to be consistent with, Section 10D of the Exchange Act, Rule 10D-1 promulgated thereunder ("***Rule 10D-1***") and Nasdaq Listing Rule 5608 (the "***Listing Standards***").

2. Effective Date

This Policy shall apply to all Incentive Compensation that is received by a Covered Officer on or after October 2, 2023 (the "***Effective Date***"). Incentive Compensation is deemed "***received***" in the Company's fiscal period in which the Financial Reporting Measure specified in the Incentive Compensation award is attained, even if the payment or grant of such Incentive Compensation occurs after the end of that period.

3. Definitions

"***Accounting Restatement***" means an accounting restatement that the Company is required to prepare due to the material noncompliance of the Company with any financial reporting requirement under the securities laws, including any required accounting restatement to correct an error in previously issued financial statements that is material to the previously issued financial statements, or that would result in a material misstatement if the error were corrected in the current period or left uncorrected in the current period.

"***Accounting Restatement Date***" means the earlier to occur of (a) the date that the Board, a committee of the Board authorized to take such action, or the officer or officers of the Company authorized to take such action if Board action is not required, concludes, or reasonably should have concluded, that the Company is required to prepare an Accounting Restatement, or (b) the date that a court, regulator or other legally authorized body directs the Company to prepare an Accounting Restatement.

"***Administrator***" means the Compensation Committee or, in the absence of such committee, the Board.

"***Code***" means the U.S. Internal Revenue Code of 1986, as amended, and the regulations promulgated thereunder.

"***Covered Officer***" means each current and former Executive Officer.

"***Exchange***" means the Nasdaq Stock Market.

"***Exchange Act***" means the U.S. Securities Exchange Act of 1934, as amended.

"***Executive Officer***" means the Company's president, chief executive officer, principal financial officer, principal accounting officer (or if there is no such accounting officer, the controller), any vice-president of the Company in charge of a principal business unit, division, or function (such as sales, administration, or finance), any other officer who performs a policy-making function, or any other person who performs similar policy-making functions for the Company. Executive officers of the Company's parent(s) or subsidiaries are deemed executive officers of the Company if they perform such policy-making functions for the Company. Policy-making function is not intended to include policy-making functions that are not significant. Identification of an executive officer for purposes of this Policy would include at a minimum executive officers identified pursuant to Item 401(b) of Regulation S-K promulgated under the Exchange Act.

"***Financial Reporting Measures***" means measures that are determined and presented in accordance with the accounting principles used in preparing the Company's financial statements, and any measures derived wholly or in part from such measures, including Company stock price and total stockholder return ("***TSR***"). A measure need not be presented in the Company's financial statements or included in a filing with the SEC in order to be a Financial Reporting Measure.

"***Incentive Compensation***" means any compensation that is granted, earned or vested based wholly or in part upon the attainment of a Financial Reporting Measure.

"***Lookback Period***" means the three completed fiscal years immediately preceding the Accounting Restatement Date, as well as any transition period (resulting from a change in the Company's fiscal year) within or immediately following those three completed fiscal years (except that a transition period of at least nine months shall count as a completed fiscal year). Notwithstanding the foregoing, the Lookback Period shall not include fiscal years completed prior to the Effective Date.

"***Recoverable Incentive Compensation***" means Incentive Compensation received by a Covered Officer during the Lookback Period that exceeds the amount of Incentive Compensation that would have been received had such amount been determined based on the Accounting Restatement, computed without regard to any taxes paid (*i.e.*, on a gross basis without regard to tax withholdings and other deductions). For any compensation plans or programs that take into account Incentive Compensation, the amount of Recoverable Incentive Compensation for purposes of this Policy shall include, without limitation, the amount contributed to any notional account based on Recoverable Incentive Compensation and any earnings to date on that notional amount. For any Incentive Compensation that is based on stock price or TSR, where the Recoverable Incentive Compensation is not subject to mathematical recalculation directly from the information in an Accounting Restatement, the Administrator will determine the amount of Recoverable Incentive Compensation based on a reasonable estimate of the effect of the Accounting Restatement on the stock price or TSR upon which the Incentive Compensation was received. The Company shall maintain documentation of the determination of that reasonable estimate and provide such documentation to the Exchange in accordance with the Listing Standards.

"***SEC***" means the U.S. Securities and Exchange Commission.

4. RECOUPMENT

(a) Applicability of Policy. This Policy applies to Incentive Compensation received by a Covered Officer (i) after beginning services as an Executive Officer, (ii) who served as an Executive Officer at any time during the performance period for such Incentive Compensation, (iii) while the Company had a class of securities listed on a national securities exchange or a national securities association, and (iv) during the Lookback Period.

(b) Recoupment Generally. Pursuant to the provisions of this Policy, if there is an Accounting Restatement, the Company must reasonably promptly recoup the full amount of the Recoverable Incentive Compensation, unless the conditions of one or more subsections of Section 4(c) of this Policy are met and the Compensation Committee, or, if such committee does not consist solely of independent directors, a majority of the independent directors serving on the Board, has made a determination that recoupment would be impracticable. Recoupment is required regardless of whether the Covered Officer engaged in any misconduct and regardless of fault, and the Company's obligation to recoup Recoverable Incentive Compensation is not dependent on whether or when any restated financial statements are filed.

(c) Impracticability of Recovery. Recoupment may be determined to be impracticable if, and only if:

(i) the direct expense paid to a third party to assist in enforcing this Policy would exceed the amount of the applicable Recoverable Incentive Compensation; provided that, before concluding that it would be impracticable to recover any amount of Recoverable Incentive Compensation based on expense of enforcement, the Company shall make a reasonable attempt to recover such Recoverable Incentive Compensation, document such reasonable attempt(s) to recover, and provide that documentation to the Exchange in accordance with the Listing Standards; or

(ii) recoupment of the applicable Recoverable Incentive Compensation would likely cause an otherwise tax-qualified retirement plan, under which benefits are broadly available to employees of the Company, to fail to meet the requirements of Code Section 401(a)(13) or Code Section 411(a) and regulations thereunder.

(d) Sources of Recoupment. To the extent permitted by applicable law, the Administrator shall, in its sole discretion, determine the timing and method for recouping Recoverable Incentive Compensation hereunder, provided that such recoupment is undertaken reasonably promptly. The Administrator may, in its discretion, seek recoupment from a Covered Officer from any of the following sources or a combination thereof, whether the applicable compensation was approved, awarded, granted, payable or paid to the Covered Officer prior to, on or after the Effective Date: (i) direct repayment of Recoverable Incentive Compensation previously paid to the Covered Officer; (ii) cancelling prior cash or equity-based awards (whether vested or unvested and whether paid or unpaid); (iii) cancelling or offsetting against any planned future cash or equity-based awards; (iv) forfeiture of deferred compensation, subject to compliance with Code Section 409A; and (v) any other method authorized by applicable law or contract. Subject to compliance with any applicable law, the Administrator may effectuate recoupment under this Policy from any amount otherwise payable to the Covered Officer, including amounts payable to such individual under any otherwise applicable Company plan or program, *e.g.*, base salary, bonuses or commissions and compensation previously deferred by the Covered Officer. The Administrator need not utilize the same method of recovery for all Covered Officers or with respect to all types of Recoverable Incentive Compensation.

(e) No Indemnification of Covered Officers. Notwithstanding any indemnification agreement, applicable insurance policy or any other agreement or provision of the Company's certificate of incorporation or bylaws to the contrary, no Covered Officer shall be entitled to indemnification or advancement of expenses in connection with any enforcement of this Policy by the Company, including paying or reimbursing such Covered Officer for insurance premiums to cover potential obligations to the Company under this Policy.

(f) Indemnification of Administrator. Any members of the Administrator, and any other members of the Board who assist in the administration of this Policy, shall not be personally liable for any action, determination or interpretation made with respect to this Policy and shall be indemnified by the

Company to the fullest extent under applicable law and Company policy with respect to any such action, determination or interpretation. The foregoing sentence shall not limit any other rights to indemnification of the members of the Board under applicable law or Company policy.

(g) No "Good Reason" for Covered Officers. Any action by the Company to recoup or any recoupment of Recoverable Incentive Compensation under this Policy from a Covered Officer shall not: (i) be deemed "good reason" for resignation, (ii) serve as a basis for a claim of constructive termination under any benefits or compensation arrangement applicable to such Covered Officer, or (iii) constitute a breach of a contract or other arrangement to which such Covered Officer is party.

5. Administration

Except as specifically set forth herein, this Policy shall be administered by the Administrator. The Administrator shall have full and final authority to make any and all determinations required under this Policy. Any determination by the Administrator with respect to this Policy shall be final, conclusive and binding on all interested parties and need not be uniform with respect to each individual covered by this Policy. In carrying out the administration of this Policy, the Administrator is authorized and directed to consult with the full Board or such other committees of the Board as may be necessary or appropriate as to matters within the scope of such other committee's responsibility and authority. Subject to applicable law, the Administrator may authorize and empower any officer or employee of the Company to take any and all actions that the Administrator, in its sole discretion, deems necessary or appropriate to carry out the purpose and intent of this Policy (other than with respect to any recovery under this Policy involving such officer or employee).

6. Severability

If any provision of this Policy or the application of any such provision to a Covered Officer shall be adjudicated to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provisions of this Policy, and the invalid, illegal or unenforceable provisions shall be deemed amended to the minimum extent necessary to render any such provision or application enforceable.

7. No Impairment of Other Remedies

Nothing contained in this Policy, and no recoupment or recovery as contemplated herein, shall limit any claims, damages or other legal remedies the Company or any of its affiliates may have against a Covered Officer arising out of or resulting from any actions or omissions by the Covered Officer. This Policy does not preclude the Company from taking any other action to enforce a Covered Officer's obligations to the Company, including, without limitation, termination of employment and/or institution of civil proceedings. This Policy is in addition to the requirements of Section 304 of the Sarbanes-Oxley Act of 2002 ("**SOX 304**") that are applicable to the Company's Chief Executive Officer and Chief Financial Officer and to any other compensation recoupment policy and/or similar provisions in any employment, equity plan, equity award, or other individual agreement, to which the Company is a party or which the Company has adopted or may adopt and maintain from time to time; provided, however, that compensation recouped pursuant to this Policy shall not be duplicative of compensation recouped pursuant to SOX 304 or any such compensation recoupment policy and/or similar provisions in any such employment, equity plan, equity award, or other individual agreement except as may be required by law.

8. Amendment; Termination

The Administrator may amend, terminate or replace this Policy or any portion of this Policy at any time and from time to time in its sole discretion. The Administrator shall amend this Policy as it deems necessary to comply with applicable law or any Listing Standard.

9. Successors

This Policy shall be binding and enforceable against all Covered Officers and, to the extent required by Rule 10D-1 and/or the applicable Listing Standards, their beneficiaries, heirs, executors, administrators or other legal representatives.

10. Required Filings

The Company shall make any disclosures and filings with respect to this Policy that are required by law, including as required by the SEC.

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