

Cullinan Therapeutics, Inc. 2023 Annual Report to Stockholders

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

FORM 10-K

(Mark One)

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 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: 001-39856

CULLINAN ONCOLOGY, INC.
(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

One Main Street
Suite 1350
Cambridge, MA
(Address of principal executive offices)

81-3879991
(I.R.S. Employer
Identification No.)

02142
(Zip Code)

(617) 410-4650
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:		
Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value \$0.0001 per share	CGEM	The Nasdaq Global Select Market

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

Indicate by check mark if the Registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. YES ☐ NO ☒

Indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. YES ☐ NO ☒

Indicate by check mark whether the Registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. YES ☒ NO ☐

Indicate by check mark whether the Registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the Registrant was required to submit such files). YES ☒ NO ☐

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

Large accelerated filer ☐

Non-accelerated filer ☒

Accelerated filer ☐

Smaller reporting company ☒

Emerging growth company ☒

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

Indicate by check mark whether the Registrant 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 Exchange Act). YES ☐ NO ☒

The aggregate market value of the voting and non-voting common stock held by non-affiliates of the Registrant as of June 30, 2023 was \$374.1 million based on the closing price of the Registrant's shares of common stock on the Nasdaq Global Select Market on such date.

The number of shares of the Registrant’s common stock outstanding as of March 1, 2024 was 43,065,645.

The number of shares of the Registrant's non-voting preferred stock outstanding as of March 1, 2024 was 647,500, which are excluded from the above aggregate market value. Each share of the preferred stock will be convertible into 10 shares of common stock at the option of the holder at any time, subject to certain limitations, including that the holder will be prohibited from converting preferred stock into common stock if, as a result of such conversion, the holder, together with its affiliates, would beneficially own a number of shares of common stock more than 9.99% of the total common stock then issued and outstanding immediately following the conversion of such shares of preferred stock. Shares of preferred stock will generally have no voting rights, except as required by law and except that the consent of a majority of the holders of the outstanding preferred stock will be required to amend the terms of the preferred stock. In the event of the Company's liquidation, dissolution or winding up, holders of preferred stock will participate pari passu with any distribution of proceeds to holders of common stock. The preferred stock ranks (i) senior to any class or series of capital stock of the Registrant hereafter created specifically ranking by its terms junior to the preferred stock; (ii) on parity with the common stock and any class or series of capital stock of the Registrant created specifically ranking by its terms on parity with the preferred stock; and (iii) junior to any class or series of capital stock of the Registrant created specifically ranking by its terms senior to any preferred stock, in each case, as to distributions of assets upon liquidation, dissolution or winding up of the Registrant, whether voluntarily or involuntarily.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward-looking statements which are made pursuant to the safe harbor provisions of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, that involve risks, uncertainties, and other factors that may cause actual results, levels of activity, performance, or achievements to be materially different from the information expressed or implied by these forward-looking statements. All statements, other than statements of historical facts, contained in this Annual Report on Form 10-K, including statements regarding our strategy, future operations, future financial position, future revenue, projected costs, prospects, plans and objectives of management, and expected market growth are forward-looking statements. The words “anticipate,” “believe,” “continue,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “potential,” “predict,” “project,” “should,” “target,” “would”, and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words.

Any forward-looking statements in this Annual Report on Form 10-K reflect our current views with respect to future events or to our future financial performance and involve known and unknown risks, uncertainties, and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by these forward-looking statements. Factors that may cause actual results to differ materially from current expectations include, among other things, those listed in this Annual Report on Form 10-K and other filings with the Securities Exchange Commission (the “SEC”), including the following:

- the commercial success, cost of development, and timing of the approval of our clinical-stage product candidates;
- the initiation, timing, progress, results, and cost of our research and development programs and our current and future preclinical studies and clinical trials, including statements regarding the timing of initiation and completion of studies or clinical trials and related preparatory work, and the period during which the results of the trials will become available;
- our ability to initiate, recruit, and enroll patients in and conduct our clinical trials at the pace that we project;
- our ability to obtain and maintain regulatory approval of our product candidates, and any related restrictions, limitations, or warnings in the label of any of our product candidates, if approved;
- our ability to compete with companies currently marketing therapies or developing product candidates with targets or indications similar to our product candidates’ targets or indications;
- our reliance on third parties to conduct our clinical trials and to manufacture drug substance and drug product for use in our clinical trials;
- the size and growth potential of the markets for oncology therapies and any of our current and future product candidates, and our ability to serve those markets;
- our ability to identify and advance through clinical development any additional product candidates;
- the commercialization of our current and future product candidates, if approved, including our ability to successfully build a specialty sales force and commercial infrastructure to market our current and future product candidates;
- our ability to identify research priorities and apply a risk-mitigated strategy to efficiently discover and develop current and future product candidates;
- our ability to retain and recruit key personnel;
- our ability to obtain and maintain adequate intellectual property rights;
- our expectations regarding government and third-party payor coverage, pricing, and reimbursement;
- our estimates of our expenses, ongoing losses, capital requirements, the sufficiency of our current resources, and our needs for or ability to obtain additional financing;
- the milestone payments that we may receive from Taiho Pharmaceutical Co., Ltd.;
- potential investments in our pipeline and the potential for such product candidates;
- the potential benefits of strategic collaboration agreements, our ability to enter into additional strategic collaborations or arrangements, and our ability to attract collaborators with development, regulatory, and commercialization expertise; and
- developments and projections relating to our competitors or our industry.

We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and investors should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions, and expectations disclosed in the forward-looking statements we make. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures, or investments we may make or collaborations or strategic partnerships we may enter into.

You should read this Annual Report on Form 10-K and the documents that we reference herein and have filed or incorporated by reference as exhibits hereto completely and with the understanding that our actual future results may be materially different from what we expect. We do not assume any obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

This Annual Report on Form 10-K also contains estimates, projections, and other information concerning our industry, our business, and the markets for our product candidates. Information that is based on estimates, forecasts, projections, market research, or similar methodologies is inherently subject to uncertainties, and actual events or circumstances may differ materially from events and circumstances that are assumed in this information. Unless otherwise expressly stated, we obtained this industry, business, market, and other data from our own internal estimates and research as well as from reports, research surveys, studies, and similar data prepared by market research firms and other third parties, industry, medical and general publications, government data, and similar sources. While we are not aware of any misstatements regarding any third-party information presented in this Annual Report on Form 10-K, their estimates, in particular, as they relate to projections, involve numerous assumptions, are subject to risks and uncertainties and are subject to change based on various factors, including those discussed under the section titled “Risk Factors” and elsewhere in this Annual Report on Form 10-K.

References to Cullinan in this Annual Report on Form 10-K

Unless otherwise stated or the context indicates otherwise, all references herein to “Cullinan,” “Cullinan Oncology, Inc.,” “we,” “us,” “our,” “our company,” “the Company,” and similar references refer to Cullinan Oncology, Inc. and its consolidated subsidiaries, and “our board of directors” and “the Board” refer to the board of directors of Cullinan Oncology, Inc.

Summary of the Material and Other Risks Associated with Our Business

Below is a summary of the principal factors that make an investment in our common stock speculative or risky. This summary does not address all of the risks that we face. Additional discussion of the risks summarized in this risk factor summary, and other risks that we face, are summarized in “Risk Factors” and should be carefully considered, together with other information in this Annual Report on Form 10-K and our other filings with the Securities and Exchange Commission, before making an investment decision regarding our common stock.

- We are early in our development efforts and are substantially dependent on our lead product candidates. If we are unable to advance these or any of our other current and future product candidates through clinical development, or to obtain regulatory approval and ultimately commercialize any such product candidates, either by ourselves or with or by third parties or if we experience significant delays in doing so, our business may be materially harmed.
- Difficulty in enrolling patients could delay or prevent clinical trials of our product candidates, and ultimately delay or prevent regulatory approval.
- Interim, “topline”, and preliminary data from our clinical trials that we announce or publish may change as more patient data become available and are subject to confirmation, audit, and verification procedures that could result in material changes in the final data.
- Our product candidates may cause undesirable side effects or have other properties that delay or prevent their regulatory approval, limit their commercial potential, or result in significant negative consequences following any potential marketing approval.
- Our limited operating history may make it difficult for you to evaluate the success of our business to date and to assess our future viability.
- We have incurred significant losses since inception, and we expect to incur losses over the next several years and may not be able to achieve or sustain revenues or profitability in the future.
- We will require substantial additional funding to develop and commercialize our current and future product candidates. If we are unable to raise capital when needed, we would be compelled to delay, reduce, or eliminate our product development programs or other operations.
- We may not be successful in our efforts to build a pipeline of product candidates with commercial value.
- Certain agreements provide our licensors, collaborators, or other shareholders in our development subsidiaries with rights that could delay or impact the potential sale of our development subsidiaries or could impact our ability to sell assets, or enter into strategic alliances, collaborations, or licensing arrangements with other third parties.
- Our reliance on a central team consisting of a limited number of employees presents operational challenges that may adversely affect our business.
- We face substantial competition, which may result in others discovering, developing, or commercializing products before or more successfully than we do.
- If we are unable to obtain and maintain patent and other intellectual property protection for our current and future product candidates and technology, or if the scope of intellectual property protection obtained is not sufficiently broad, our competitors could develop and commercialize products and technology similar or identical to ours, and our ability to commercialize any of our current or future product candidates or technology may be adversely affected.
- We currently rely and expect to continue to rely on the outsourcing of the majority of our development functions to third parties to conduct our preclinical studies and clinical trials. If these third parties do not properly and successfully carry out their contractual duties or meet expected deadlines, we may not be able to obtain regulatory approval of or commercialize our product candidates.
- We are highly dependent on our key personnel. If we are not successful in retaining highly qualified personnel, we may not be able to successfully implement our business strategy.

PART I

Item 1. Business.

Overview

We are a clinical-stage biopharmaceutical company focused on developing modality-agnostic targeted oncology therapies. Our mission is creating new standards of care for patients. Our strategy is to identify high-impact cancer targets, which we define as those that play key roles as either oncogenic drivers or immune system activators, and then select what we believe is the optimal therapeutic modality for those targets. We apply a rigorous and differentiated approach to drug development, which is guided by the following core elements:

- Rapidly advance only candidates that we believe have first- and/or best-in-class potential.
- Seek clear evidence of monotherapy activity early in preclinical and clinical development, which we believe will de-risk later stage drug development.
- Remain open to finding what we believe are the optimal modalities and drug candidates either through in-house discovery or through licensing and collaborations.

Using this strategy, we have built a broad and deep pipeline of targeted oncology programs that includes six distinct clinical-stage product candidates. Our current pipeline is summarized in the diagram and bullets below:

Program Modality/MOA	IND- Enabling	Phase 1	Phase 2	Phase 3	Status	Geographic Rights
CLN-619 Anti-MICA/B antibody	Solid tumors Multiple Myeloma				Initial solid tumor combo data and monotherapy update in 2Q24; Disease specific expansion data in 1H25	cullinan ONCOLOGY or its subsidiary owns worldwide rights
CLN-978 CD19xCD3 T-cell engager	B-cell NHL				Phase 1 study ongoing	cullinan ONCOLOGY owns worldwide rights
Zipalertinib (CLN-081/TAS6417) EGFRex20ins inhibitor	NSCLC with exon 20 insertion mutations 2+ line NSCLC with exon 20 insertion mutations frontline				Pivotal Phase 2b 2L+ study enrolled by YE24; Phase 3 1L study actively enrolling	cullinan ONCOLOGY holds US co-development/ commercialization rights with TAIHO ONCOLOGY
CLN-049 FLT3xCD3 T-cell engager	R/R AML, MDS				Clinical update from ongoing Phase 1 study in 2H24	cullinan ONCOLOGY or its subsidiary owns worldwide rights
CLN-418 B7H4x41BB bispecific immune activator	Multiple solid tumors				Clinical update from ongoing Phase 1 study in 2H24	cullinan ONCOLOGY owns U.S. rights
CLN-617 Collagen-binding IL-12 and IL-2 fusion protein	Pan-cancer				Phase 1 study ongoing	cullinan ONCOLOGY or its subsidiary owns worldwide rights
Early Programs	Multiple discovery stage programs					

 IND cleared, trial start pending

- Our lead unpartnered program, CLN-619, is a monoclonal antibody designed to stabilize expression of MICA/B on the tumor cell surface to promote tumor cell lysis mediated by both cytotoxic innate and adaptive immune cells. CLN-619 is being investigated as both monotherapy and in combination with checkpoint inhibitor therapy in an ongoing Phase 1 clinical trial in patients with advanced solid tumors. We intend to present initial data from the checkpoint inhibitor therapy combination dose escalation module of the clinical trial, as well as updated data from the monotherapy dose escalation module, in the second quarter of 2024. Initial data from the disease specific expansion cohorts are anticipated in the first half of 2025. Separately, in February 2024, the United States ("U.S.") Food and Drug Administration ("FDA") cleared our Investigational New Drug ("IND") application to evaluate CLN-619 in a Phase 1 clinical trial in relapsed/refractory multiple myeloma patients.

- CLN-978 is a CD19xCD3 T cell engager with extended serum half-life and, based on preclinical data, robust potency against target cells expressing low levels of CD19. In August 2023, we dosed the first patient in our Phase 1 clinical trial of CLN-978 in patients with relapsed/refractory B cell non-Hodgkin lymphoma ("B-NHL"). Recently, academic and industry groups have generated clinical data and case series demonstrating that CD19 targeted CAR T cell therapy could lead to sustained improvements in disease, including durable remission in some cases, in several B cell mediated autoimmune indications. Nonetheless, cell therapy has many limitations, including the need for lymphodepleting chemotherapy, which is associated with significant toxicities, an FDA-recognized risk of secondary malignancies, and extended manufacturing timelines due to complexity of production. Based on the emerging clinical data supporting the efficacy of CD19 directed therapy in multiple autoimmune diseases and our belief that CLN-978 may address these limitations of CAR T cell therapy, we are also exploring the development of CLN-978 in autoimmune diseases.
- Ziplertinib (CLN-081/TAS6417), which we are co-developing with an affiliate of Taiho Pharmaceutical Co., Ltd ("Taiho"), is an orally-available small-molecule, irreversible epidermal growth factor receptor ("EGFR") inhibitor that is designed to selectively target cells expressing EGFR exon 20 ("EGFRex20") insertion mutations with relative sparing of cells expressing wild-type EGFR. In collaboration with our partners at Taiho, we are evaluating ziplertinib in the pivotal Phase 2b portion of the REZILIENT1 clinical trial in patients with EGFRex20 non-small-cell lung cancer ("NSCLC") who progressed after prior systemic therapy, and in a global Phase 3 clinical trial ("REZILIENT3") in combination with chemotherapy as a potential first-line treatment for EGFRex20 NSCLC adult patients. We expect to complete enrollment in the pivotal Phase 2b portion of the REZILIENT1 clinical trial by year-end 2024. Taiho and we will each receive 50% of any future pre-tax profits from potential U.S. sales of ziplertinib. The FDA has granted Breakthrough Therapy designation to ziplertinib.
- CLN-049 is a FLT3xCD3 T cell engaging bispecific antibody being investigated in patients with relapsed/refractory ("r/r") acute myeloid leukemia ("AML") or myelodysplastic syndrome ("MDS"). CLN-049 is currently in an ongoing Phase 1 clinical trial with updated clinical data expected in the second half of 2024. In December 2023, we initiated a second Phase 1 clinical trial designed to evaluate the safety of CLN-049 in minimal residual disease-positive AML.
- CLN-418 is a B7H4x4-1BB fully human bispecific immune activator designed to achieve conditional activation of 4-1BB by targeting B7H4, a tumor-associated antigen that is highly expressed across multiple cancers with minimal expression on normal tissues. CLN-418 is being investigated in an ongoing Phase 1 clinical trial in patients with advanced solid tumors with initial clinical data expected in the second half of 2024.
- CLN-617 is a fusion protein combining two potent antitumor cytokines, interleukin-2 ("IL-2"), and interleukin-12 ("IL-12"), with tumor retention domains for the treatment of solid tumors. In December 2023, we dosed the first patient in the CLN-617 first-in-human Phase 1 clinical trial.

In addition to the product candidates described above, we are actively developing several preclinical oncology programs, all in the discovery stage, including our collaboration with Icahn School of Medicine at Mount Sinai for the development of novel hematopoietic progenitor kinase 1 ("HPK1") degraders.

Our Strategy

Our strategy is to identify high-impact cancer targets, which we define as those that play key roles as either oncogenic drivers or immune system activators, and then select what we believe is the optimal therapeutic modality for those targets. The key objectives we aim to achieve with our strategy are as follows:

- ***Continue to pursue robust clinical development of our lead unpartnered program, CLN-619.*** Given MICA/B is expressed on a wide range of solid tumors and hematological malignancies, we believe CLN-619 has broad therapeutic potential. We have initiated multiple disease specific expansion cohorts and intend to evaluate opportunities for expansion into additional indications based on clinical and biomarker data from our ongoing Phase 1 clinical trial.

- **Explore development of CLN-978 in autoimmune diseases.** Recently, academic and industry groups have generated clinical data and case series demonstrating that CD19 targeted CAR T cell therapy could lead to sustained improvements in disease, including durable remission in some cases, in several B cell mediated autoimmune indications. Nonetheless, cell therapy has many limitations, including the need for lymphodepleting chemotherapy, which is associated with significant toxicities, an FDA-recognized risk of secondary malignancies, and extended manufacturing timelines due to complexity of production. CLN-978 was designed to address these limitations of current CD19 directed therapy via off-the-shelf subcutaneous administration and the ability to redirect T cells to lyse B cells expressing very low levels of CD19. We are therefore exploring the development of CLN-978 in autoimmune diseases.
- **Advance zipalertinib, which we are co-developing with an affiliate of Taiho, toward potential regulatory approval.** In collaboration with our partners at Taiho, we are pursuing a broad, parallel development plan designed to exploit the potential of zipalertinib in multiple patient populations. Our ongoing registration directed studies include patients who have progressed following treatment with chemotherapy with or without exon 20 insertion targeted therapy in the pivotal Phase 2b portion of the REZILIENT1 clinical trial, and previously untreated patients with advanced disease in the REZILIENT3 Phase 3 clinical trial. With our partners at Taiho, we also have a separate ongoing Phase 2 clinical trial, REZILIENT2, evaluating zipalertinib as a monotherapy in several parallel cohorts, including (1) EGFRex20 NSCLC patients who have not received prior treatment for advanced disease, (2) NSCLC patients with EGFRex20 or other uncommon EGFR mutations who have received prior standard systemic therapy, and (3) NSCLC patients with EGFRex20 or other uncommon EGFR mutations who have active brain metastases (including treatment naïve and treatment-experienced).
- **Generate additional near-term clinical readouts from our pipeline.** In addition to CLN-619, CLN-978, and zipalertinib, we have three additional product candidates in clinical trials. In the second half of 2024, we expect to present clinical data from two of these candidates, CLN-049 in r/r AML and MDS patients, and CLN-418 in patients with advanced solid tumors. We continuously assess each of our programs and use rigorous go / no-go decision criteria to justify ongoing investment. We initiated ongoing Phase 1 clinical trials for our remaining two clinical-stage programs, CLN-978 and CLN-617, in 2023. When certain programs do not meet our de-risking criteria for advancement, we terminate those programs and preserve our capital and resources to invest in programs with greater potential. As a result, our pipeline will continue to evolve.
- **Evaluate internal and external opportunities to expand our pipeline.** Our management team is comprised of leaders in oncology drug discovery, clinical development, and commercial operations. Their proven track records and longstanding relationships in the life sciences industry provide us with access to programs from around the world, including externally sourced programs such as CLN-619 and zipalertinib. In addition, their experiences and deep understanding of molecular oncology and cancer immunotherapy also enable us to translate novel concepts into internally designed product candidates, such as CLN-978, or those that contain both internal and externally sourced innovation, such as CLN-617. We balance pipeline expansion with the desire to maintain ample cash runway beyond key program milestones.

Our Structure

When we were a private company, we established development subsidiaries when we acquired or licensed exclusive worldwide rights to intellectual property, including for CLN-619, CLN-049, and CLN-617. The structure of our financing arrangements with each development subsidiary enables us to increase our economic ownership when we provide additional capital. We have not established development subsidiaries for our other current product candidates and programs. In June 2022, we sold our equity interest in our development subsidiary for zipalertinib to Taiho, and in connection with the sale and pursuant to a co-development agreement, we are co-developing zipalertinib with an affiliate of Taiho. We hold the intellectual property rights for CLN-978 and CLN-418, and we hold intellectual property rights or exclusive options for worldwide intellectual property for our earlier-stage programs. The following table shows our ownership interest as of December 31, 2023 in our development subsidiaries and their product candidates:

Development Subsidiary (Product Candidate)	Ownership as of December 31, 2023
Cullinan MICA Corp. (CLN-619)	95%
Cullinan Florentine Corp. (CLN-049)	96%
Cullinan Amber Corp. (CLN-617)	94%

CLN-619

Overview

CLN-619 is a MICA/B-targeted, humanized immunoglobulin G1 ("IgG1") monoclonal antibody that we are initially developing for the treatment of solid tumors and multiple myeloma. CLN-619 was designed to promote an antitumor response through multiple mechanisms of action, including inhibition of MICA/B shedding, mediation of antibody-dependent cell-mediated cytotoxicity ("ADCC") and antibody-dependent cellular phagocytosis ("ADCP"). The MICA/B receptor, NKG2D, is expressed on both innate and adaptive immune cell populations. Although several companies have disclosed preclinical MICA/B targeting programs, we are unaware of any other clinical stage, antibody-based programs engaging this target, implying CLN-619 has first-in-class potential. In multiple *in vivo* preclinical tumor models, CLN-619 administration was associated with antitumor activity.

We believe CLN-619 has the potential to become a novel backbone agent for immuno-oncology therapy given the broad expression of MICA/B across tumor types and the biological rationale for combining CLN-619 with other agents. We are currently evaluating CLN-619 in an ongoing Phase 1 clinical trial for patients with advanced solid tumors. The clinical trial design includes parallel evaluation of CLN-619 as a monotherapy and in combination with checkpoint-inhibitor therapy.

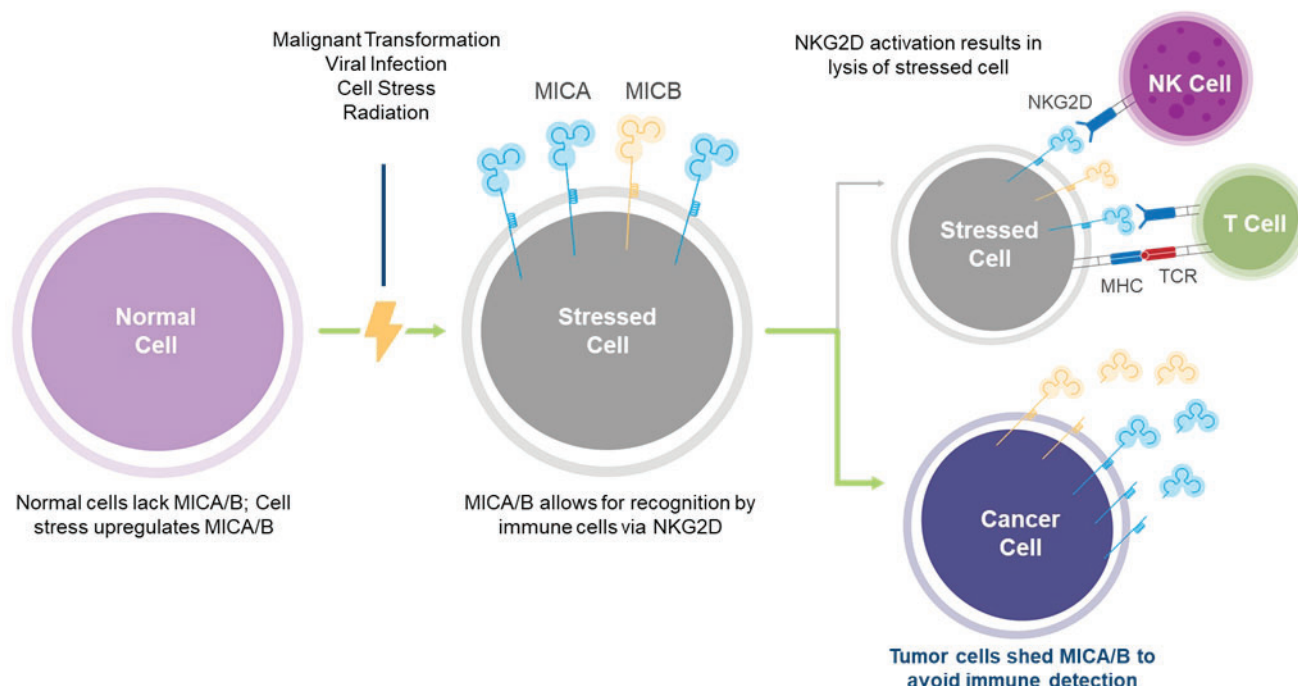
Background on NKG2D and MICA/B

NKG2D is a key activating receptor on natural killer ("NK") cells responsible for cytolysis upon binding to ligands expressed on target cells. NKG2D is also expressed on other types of immune cells, including CD8⁺ $\alpha\beta$ T cells, natural killer T cells, and $\gamma\delta$ T cells, and can prime such cells for activation and enhance their antitumor activity as a co-activating receptor. Healthy cells do not normally express ligands of NKG2D, but will do so in response to cellular stress, such as oxygen or nutrient deprivation, radiation, viral infection, or oncogenic transformation.

MICA/B proteins are broadly recognized by NK cells, $\gamma\delta$ T cells, and CD8⁺ $\alpha\beta$ T cells via the NKG2D receptor. The engagement between the NKG2D receptor and MICA/B proteins triggers the effector cytolytic responses of NK cells and $\gamma\delta$ T cells against tumor cells expressing MICA/B. In the case of CD8⁺ $\alpha\beta$ T cells, effector responses mediated by the T cell receptor are enhanced by NKG2D-MICA/B interactions. NKG2D-mediated stimulation also results in the induction of cytokines, which further promotes the recruitment and the proliferation of immune cells and bolsters the immune response.

To evade potential cytotoxic destruction by NK cells and T cells, tumor cells expressing MICA/B have adopted shedding of MICA/B from their cell surface as a key evasion mechanism. The MICA/B alpha 3 domain contains a stretch of amino acids that allows for protease cleavage of an extracellular portion of MICA/B and subsequent release from the cell surface, thereby reducing the ability of MICA/B to interact with NKG2D and resulting in decreased NKG2D-mediated killing of tumor cells. This mechanism also concomitantly increases the amount of circulating serum MICA/B ("sMICA/B") in preclinical studies. The mechanisms underlying this biology are illustrated below. The top pathway shows the normal mechanism by which tumor-associated ligands of NKG2D, such as MICA/B, can induce the killing of stressed cells. The bottom pathway shows how tumor cells, through the proteolytic cleavage of MICA/B, can escape immune surveillance and immune cell-mediated killing.

MICA/B Serves as a Warning Signal to the Immune System to Eliminate Potentially Dangerous Cells



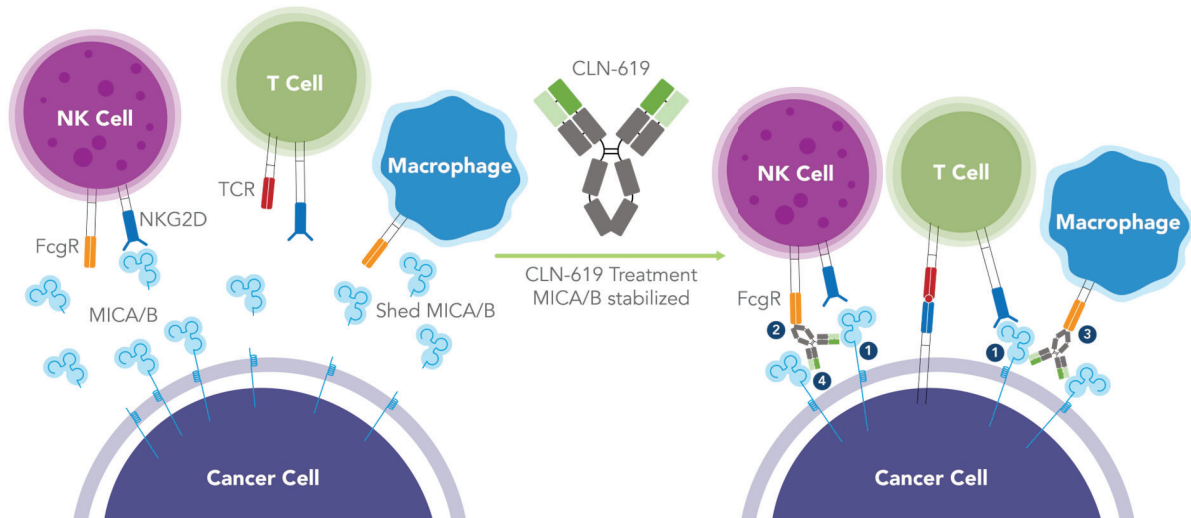
An analysis of the expression of the NKG2D ligands in The Cancer Genome Atlas, shows that MICA and MICB are the two ligands for NKG2D that are most frequently expressed across a wide range of tumor types. We believe the positive expression profile of MICA/B in many tumor types provides attractive development opportunities across a wide range of indications.

Design Properties

CLN-619 is a MICA/B-targeted humanized IgG1 monoclonal antibody with a competent Fc gamma 1 domain capable of mediating effector cell functions through binding to Fc gamma receptors on innate immune cells.

We believe CLN-619 may affect antitumor activity through a multi-pronged mechanism of action. First, we believe that CLN-619 may prevent the proteolytic cleavage of MICA and MICB on cancer cells by proteases commonly found in the tumor microenvironment (noted as “1” in the figure below). This mechanism would enable the accumulation of MICA/B on the surface of cancer cells. In preclinical studies, treatment with CLN-619 resulted in increased cell surface expression and reduced serum levels of MICA/B in various tumor cell lines, while CLN-619 treatment *in vivo* led to reduced serum levels of MICA/B. Elevated expression of MICA/B on the surface of cancer cells is expected to enhance killing of cancer cells by NK cells via binding of their NKG2D receptor to MICA/B. MICA/B also interacts with NKG2D expressed on $\gamma\delta$ T cells and natural killer T cells, where NKG2D can play the role of a co-activating receptor, lowering the threshold for T cell-mediated cancer cell lysis. Second, CLN-619 has a human IgG1 backbone with a wild-type Fc gamma domain, which allows it to engage NK cells by binding to their Fc gamma receptor IIIa, leading to ADCC (noted as “2” in the figure below). In preclinical studies, treatment with CLN-619 was shown to induce ADCC *in vitro*. Third, the wild-type Fc gamma domain of CLN-619 enables it to mediate ADCP of target tumor cells via macrophage engagement (noted as “3” in the figure below). Finally, our preliminary preclinical data suggests that CLN-619 may have the potential to enhance the binding of MICA/B to NKG2D receptors on NK cells or other immune cells to provide for improved cancer cell lysis (noted as “4” in the figure below). We believe that all of these mechanisms may be acting in a coordinated manner to engage NK cells and other immune cells, which could result in the cancer cell lysis observed in the preclinical studies described below.

CLN-619 Modes of Action

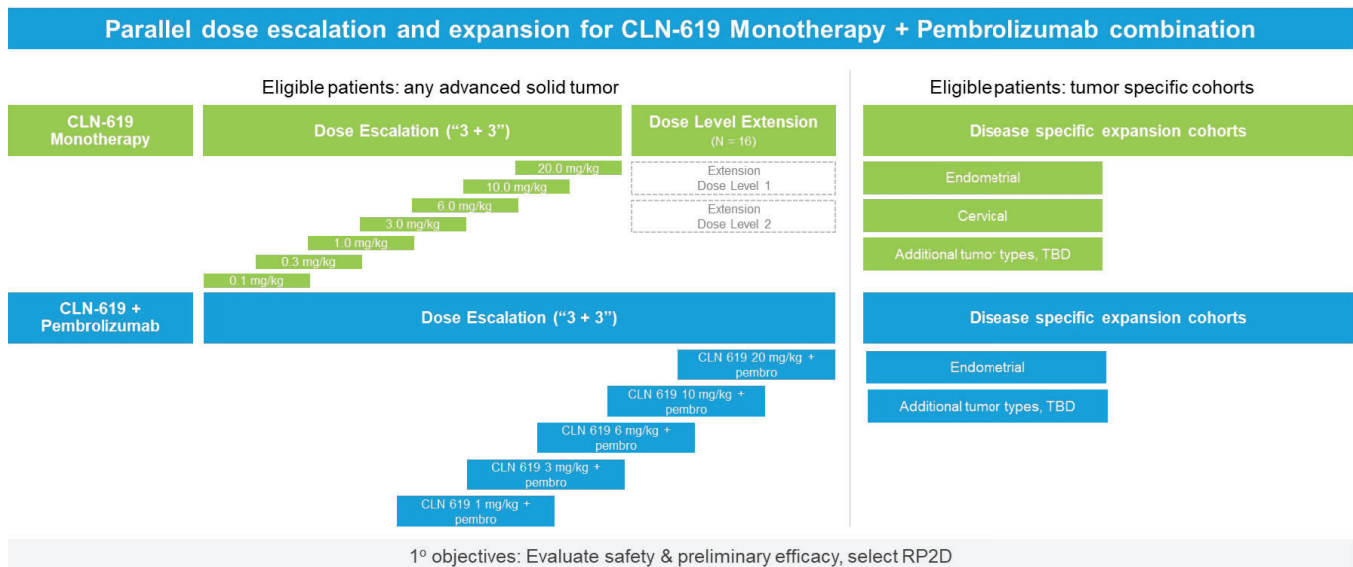


Clinical Development

Phase 1 Clinical Trial

We are currently evaluating CLN-619 in a global Phase 1 clinical trial in patients with advanced solid tumors. We have completed enrollment in parallel dose-escalation modules evaluating CLN-619 as a monotherapy and in combination with checkpoint inhibitor therapy. The dose-escalation phase incorporated a standard 3+3 escalation format, as depicted below, and allowed dose-level cohort extensions based on safety criteria. CLN-619 was administered intravenously every three weeks.

Global Phase 1 Clinical Trial Design of CLN-619



Dose Escalation Module

We presented initial data from the monotherapy module at the American Society for Clinical Oncology annual meeting in June 2023 based on a data cut off as of March 31, 2023. The data set includes 37 patients treated with CLN-619 monotherapy across dose levels, ranging from 0.1 milligrams per kilogram "(mg/kg)" to 10mg/kg. Patients were heavily pre-treated with a median of three prior systemic therapies (ranging from one to seven), and 54% had received prior immune checkpoint inhibitor therapy.

The Phase 1 monotherapy dose escalation demonstrates a favorable safety profile of CLN-619 across all tested doses in patients with solid tumors. No dose limiting toxicities were observed. Similar to other monoclonal antibodies, infusion-related reactions were limited to the first dose, and all Grade 1/2 adverse events were in patients receiving mandated corticosteroid pre-medication.

Adverse Events from CLN-619 Monotherapy in Phase 1 Study

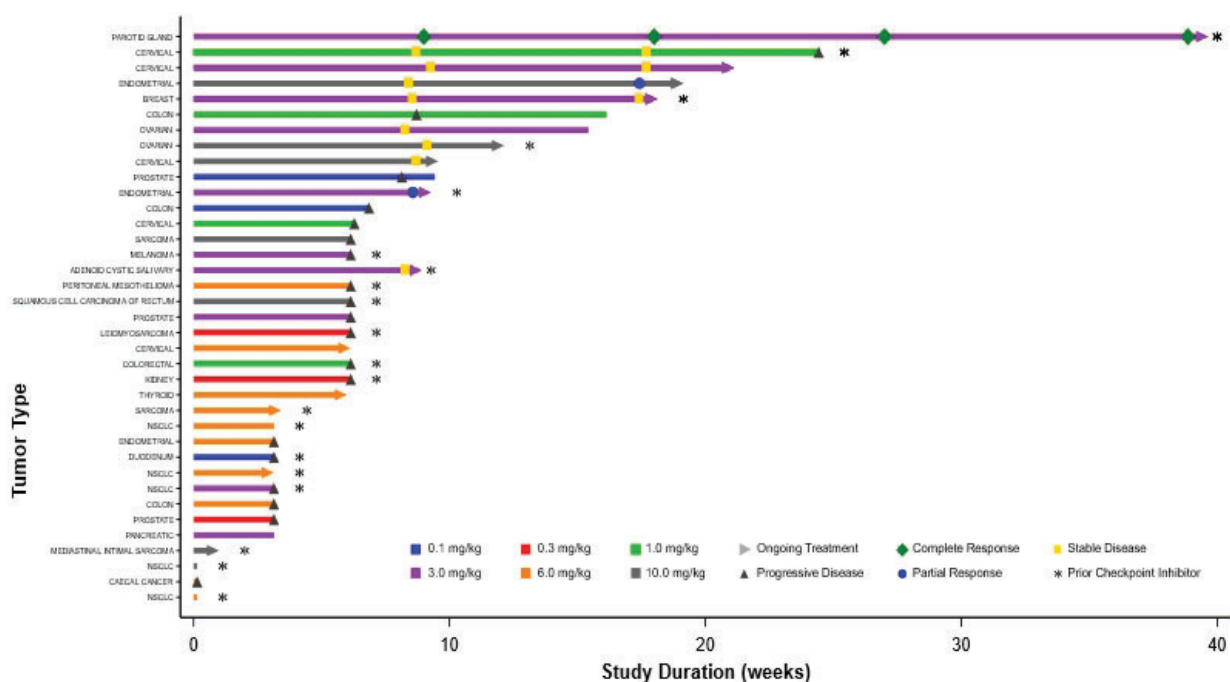
Adverse Event	Any n (%)	Grade 1/2 n (%)	Grade 3+ n (%)
Infusion Related Reaction	8 (21.6)	8 (21.6)	0 (0)
Pyrexia	8 (21.6)	8 (21.6)	0 (0)
Abdominal Pain	8 (21.6)	6 (16.2)	2 (5.4)
Decreased Appetite	6 (16.2)	6 (16.2)	0 (0)
Diarrhea	5 (13.5)	5 (13.5)	0 (0)
Fatigue	5 (13.5)	5 (13.5)	0 (0)
Nausea	5 (13.5)	5 (13.5)	0 (0)
Vomiting	4 (10.8)	4 (10.8)	0 (0)
Back Pain	4 (10.8)	4 (10.8)	0 (0)

- Patients experiencing at least one TEAE = 34 (91.9%)
- Patients experiencing at least one Grade 3 TEAE 11 (29.7%); no Grade \geq 4 TEAE
- TEAE leading to discontinuation [2, 5.4%: Grade 3 Laryngeal Edema (related), Grade 3 Dehydration (unrelated)]

In terms of efficacy, the initial clinical data demonstrate monotherapy anti-tumor activity of CLN-619 in the form of objective responses and prolonged stable disease across multiple tumors, including gynecological cancers:

- Objective responses were observed starting at doses of 3 mg/kg.
- One complete response ("CR") with greater than nine months duration (ongoing at data cut-off) was observed in a patient with parotid gland cancer whose cancer had progressed on prior checkpoint inhibitor therapy.
- Two partial responses ("PRs") (confirmed as of time of data presentation) were observed in patients with endometrial cancer, one whose cancer had progressed on prior checkpoint inhibitor therapy.
- Multiple instances of durable stable disease ("SD") were observed across a range of tumor types including cervical, ovarian, salivary gland, and breast cancers.

Time on Treatment and Clinical Activity from CLN-619 Monotherapy in Phase 1 Study



Summary of Clinical Activity from CLN-619 Monotherapy in Phase 1 Study

	All Patients (n=37)	Response Evaluable ¹ at ≥1 mg/kg (n=22)
Complete Response (CR)	1	1
Partial Response (PR)	2	2
Stable Disease (SD)	7	7
CR + PR + SD	10	10
Progressive Disease (PD)	18	12
Not Evaluable (NE)	9	NA

¹Patients who underwent at least one RECIST response assessment or who had clinically assessed PD prior to first planned response assessment

Details of Confirmed Objective Responses from CLN-619 Monotherapy in Phase 1 Study

Dose Level	Tumor Type	Prior Therapy	Confirmed Response Detail
3 mg/kg	Parotid (mucoepidermoid)	2 prior therapies Prior anti-PD1 (best response = PR)	CR at C4D1
	Endometrial (serous)	5 prior therapies Prior anti-PD1 + lenvatinib (best response = SD)	PR at C4D1
10 mg/kg	Endometrial (endometrioid)	3 prior therapies No prior anti-PD1	PR at C7D1

At the 2023 Society for Immunotherapy of Cancer Annual Meeting, we presented initial biomarker data from the ongoing Phase 1 clinical trial, which showed that CLN-619 increases MICA/B expression on the tumor cell surface, consistent with previously reported preclinical data and supporting the proposed mechanism of action. Data from patients with available biopsy data demonstrate clinical benefit, including objective response, in patients with tumors with characteristics not typically responsive to checkpoint inhibitor therapy. Specifically, tumors from the two responding endometrial cancer patients were microsatellite stable, had low tumor mutational burden, and low neoantigen presentation index. Available biopsies from patients with prolonged stable disease showed similar low mutational burden and neoantigen presentation index characteristics, as well as increased surface MICA/B expression and NK cell activation.

Cullinan expects to report initial data from the combination dose escalation module as well as an update on the monotherapy dose escalation module at a medical conference in the second quarter of 2024.

Background on Endometrial Cancer

Uterine cancer is the most common cancer of the female reproductive organs. The American Cancer Society estimated that in 2024, there will be approximately 67,880 new cases of uterine cancer and approximately 13,250 deaths from uterine cancer in the U.S. Uterine cancer is one of the few cancers with increasing mortality, and its mortality rate has risen by approximately 1.7% per year for the past 20 years. The most common subtype of uterine cancer is endometrial cancer, which represents approximately 90% of all uterine cancers.

The treatment landscape for endometrial cancer in the U.S. is evolving. Most eligible patients requiring systemic therapy receive platinum-based chemotherapy in the frontline, with or without hormonal treatment. Currently, the only approved agents in the second line or later setting are anti-PD1 therapy plus or minus the tyrosine kinase inhibitor, lenvatinib. However, the anti-PD1 therapy, dostarlimab, was approved in 2023 for certain patient groups as first-line treatment in combination with chemotherapy; in February 2023, Merck announced that a Phase 3 clinical trial evaluating the anti-PD1 therapy, pembrolizumab, in combination with chemotherapy, met its primary endpoint of progression-free survival for the treatment of patients with endometrial cancer in the first-line setting. Based on dostarlimab's approval, and pembrolizumab's Phase 3 clinical trial results, we believe anti-PD1 therapy will shift to the frontline setting, which would leave a significant unmet need in the second line or later settings.

Ongoing Clinical Development

We have initiated disease-specific expansion cohorts in endometrial cancer (monotherapy and combination therapy), and cervical cancer (monotherapy), and we may announce additional disease specific expansion cohorts for monotherapy and/or combination therapy as our data analysis continues. We anticipate announcing initial data from the disease specific expansion cohorts in the first half of 2025. Separately, in February 2024, the FDA cleared our IND to evaluate CLN-619 in a Phase 1 clinical trial in relapsed/refractory multiple myeloma patients.

CLN-978

Overview

CLN-978 is a half-life extended, humanized, single-chain bispecific antibody designed to simultaneously engage CD19 on B cells and CD3 on T cells, triggering redirected T cells to lyse the malignant B cells. In addition, CLN-978 has a human serum albumin ("HSA") binding domain designed to prolong its serum half-life. CLN-978 mediated CD19-dependent cell lysis *in vitro* of target cell lines with a range of CD19 target expression levels. In preclinical *in vivo* studies, treatment with CLN-978, at extremely low and infrequent doses, led to profound B cell depletion after a single dose in non-human primates.

Rationale for Targeting CD19 in B Cell Non-Hodgkin Lymphoma and Autoimmune Diseases

The American Cancer Society estimates that in 2024, there will be approximately 80,620 newly diagnosed patients with non-Hodgkin lymphomas and 20,140 deaths from non-Hodgkin lymphomas. The most common subtype of non-Hodgkin lymphoma is B-NHL, which represents approximately 85% of all non-Hodgkin lymphomas in the U.S. In B-NHL, CD19 is an attractive therapeutic target because it is constantly and strongly expressed in cancerous B cells, is highly disease-specific, and has a limited number of off-target effects. In the last decade, several cell therapies and antibodies have been approved for the treatment of B cell lymphomas and leukemias.

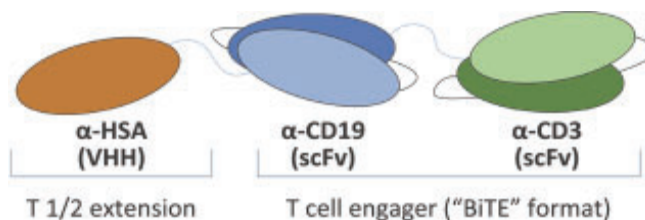
Non-malignant B cells also express the CD19 target and play a role in numerous autoimmune diseases which can affect multiple organ systems. Common to the pathophysiology of these disorders is the aberrant production of antibodies directed toward self-antigens, which are referred to as autoantibodies. Recently, academic and industry groups have generated clinical data and case series demonstrating that CD19 targeted CAR T cell therapy could lead to a sustained suppression of autoantibodies in treatment resistant lupus as well as other B cell mediated autoimmune indications. These case series show that the profound depletion of B cells by the CD19 targeted CAR T cell therapy, followed by the re-emergence of a naïve B cell repertoire, allows for a "reset" of the B cell compartment and a lasting elimination of the aberrant autoantibody producing plasmablasts. Nonetheless, there are challenges with cell therapies, which include the need for lymphodepleting chemotherapy, which is associated with significant toxicities, an FDA-recognized risk of secondary malignancies, and extended manufacturing timelines due to complexity of production.

We believe that our CD19xCD3 T cell engager, CLN-978, may address some of the limitations associated with cell therapies. CLN-978 is an off-the-shelf, subcutaneously administered molecule that has shown profound B cell depletion in the periphery and in tissues such as lymph nodes and spleen in preclinical non-human primate studies. In the U.S., there is only one FDA-approved CD19 T cell engager, which is indicated for ALL. Additionally, there is only one other CD19 T cell engager in clinical development that we are aware of, which is currently being developed only for oncology indications and is IV-administered. Other companies are developing T cell engagers for autoimmune diseases using a CD20xCD3 approach. We believe CD19 is a superior target due to its broader expression across the B cell lineage, including in the plasmablasts that produce the autoreactive antibodies.

Design Properties

We designed CLN-978 based on a bispecific T cell engager-like format using tandemly-arranged single-chain variable fragments ("scFvs") for CD19 and CD3, similar to blinatumomab. In addition, we incorporated a third domain in the form of a single-domain antibody (VHH) for binding to HSA. We believe that binding of CLN-978 to albumin has the potential to extend its serum half-life. An illustration of the CLN-978 structure is shown in the following figure.

Design of CLN-978, a CD19xCD3-bispecific T Cell Engager with Extended Serum Half-life

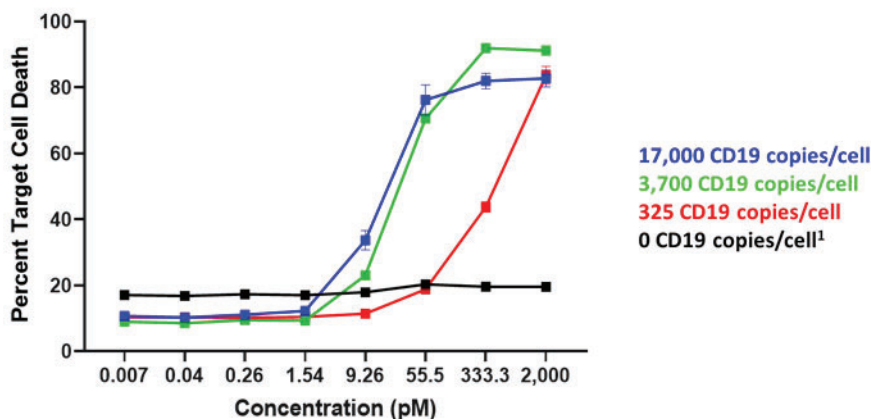


We engaged with Adimab, LLC ("Adimab") to select antibody-derived binding domains specific for CD19, CD3, and HSA with optimized biophysical and biochemical properties, tailored binding affinities as well as other parameters that are key to developability, manufacturability, and preclinical testing of drug candidates. In preclinical studies, CLN-978 has demonstrated potent antitumor activity both in terms of redirecting T cells to lyse low-CD19 expressing cells *in vitro* and significant tumor growth inhibition *in vivo*. We believe these preclinical results support further evaluation of CLN-978 for its potential to improve upon the clinical efficacy of existing therapies. In addition, we believe the ability to target cells with low CD19 expression would potentially enable us to address patients that progress following CAR T cell therapy.

Preclinical Data

CLN-978 incorporates a CD19 binding domain that was engineered to achieve picomolar binding affinity to CD19 as measured using plasmon resonance, which we believe may contribute to cytolytic potency against low CD19-expressing cell lines in *in vitro* studies. As shown in the figure below, CLN-978 targets a range of CD19 expression levels in the engineered A20 cell lines as measured by both the picomolar drug concentration at which 50% of target cells are killed by redirected cell lysis (the "EC₅₀ value") and the maximum percentage of lysis. We believe this observation supports our hypothesis that CLN-978 may be active at relatively low doses, which could confer a wider therapeutic index, and have the potential to better address patient populations with lower levels of CD19 expression on B cells.

CLN-978 Redirects Cell Lysis of Low CD19-expressing Cell Lines *In Vitro* Cytotoxicity Assays

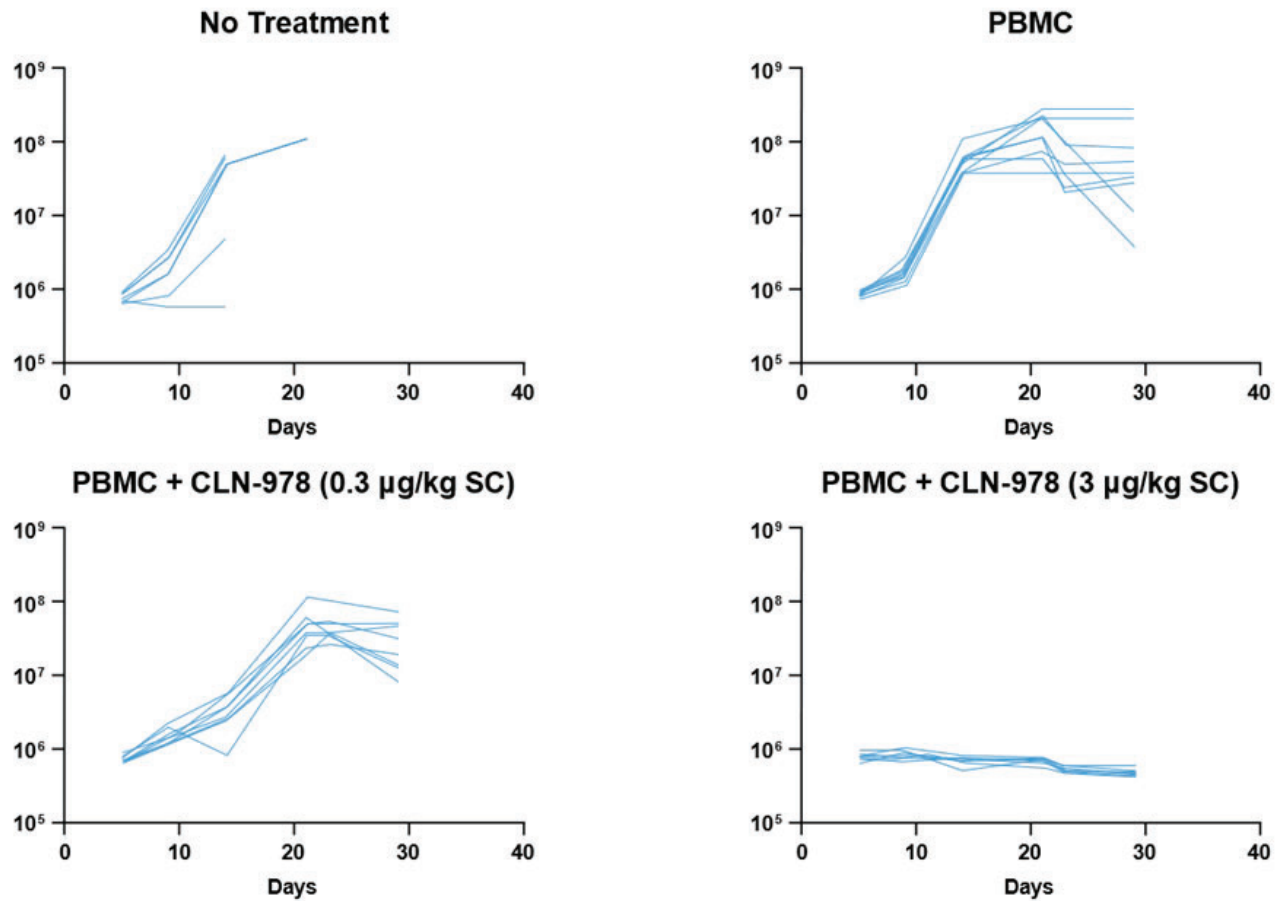


1. Lysis of target cells requires CD19 expression, as the A20 parental cell line, which lacks CD19 expression, was not susceptible to lysis even at high drug concentrations.

CLN-978 has also demonstrated the ability to deplete malignant B cell populations *in vivo* in a humanized model, where the mice were implanted with a human Raji-luciferase lymphoma cell line ("Raji B.luc") and human peripheral blood mononuclear cell ("PBMC"). As shown in the figure below, CLN-978 demonstrated significant tumor growth inhibition at every dose level tested. Furthermore, at the 3 microgram per kilogram dose level and above, CLN-978 treatment resulted in a complete response in 100% of treated mice.

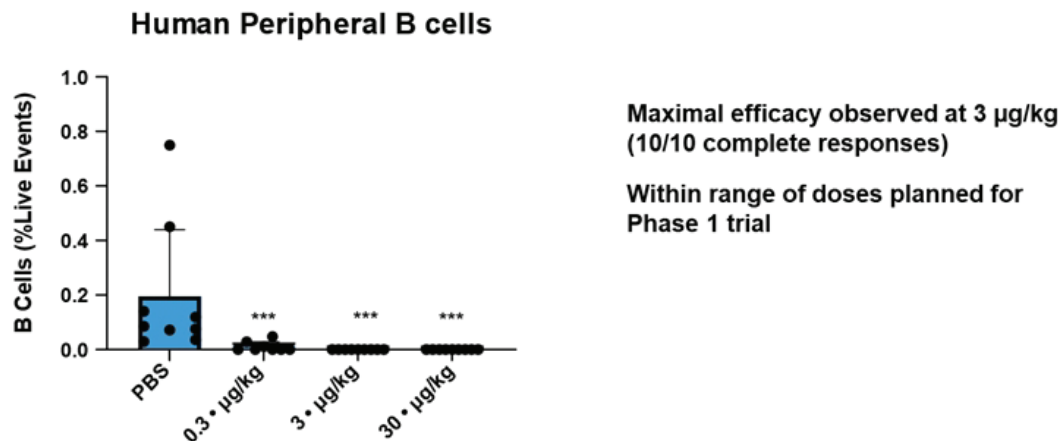
Antitumor Activity of CLN-978 in a Raji-luciferase Human PBMC Mouse Model

Malignant B cell Burden



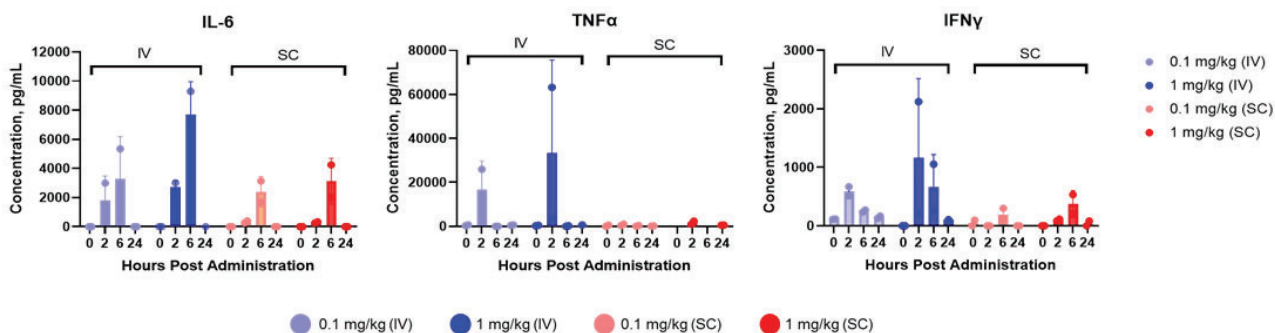
Consistent with the tumor growth inhibition, we observed a statistically significant reduction in the number of normal human CD19⁺ B cells in all CLN-978 treated groups as shown in the figure below.

Reduction in Normal B Cells in Peripheral Blood after Treatment with CLN-978 in the huPBMC Raji B.luc Mouse Model



Studies in non-human primates have also shown robust and complete depletion of B cells for up to 30 days following a single administration by either the subcutaneous ("SC") or intravenous ("IV") routes, as shown below left. In a study of four weekly SC doses, profound B cell depletion was also observed in tissues such as lymph nodes and spleen at four weeks following administration for the final dose in this study. While both SC and IV administration achieved similar areas under the curve, as shown below right, maximum serum concentration ("C_{max}") of CLN-978 was reduced for the SC route.

Consistent with the reduced C_{max} for SC administration, preclinical data from non-human primates have also demonstrated the ability of SC administration to attenuate cytokine release as compared to IV administration. As shown below, the increase in levels of interleukin-6 ("IL6"), tumor necrosis factor-alpha ("TNFα"), and interferon gamma ("IFNγ") were far lower across a range of doses for SC administration compared to IV administration.



Ongoing Clinical Development Plan

In August 2023, we dosed the first patient in our Phase 1 clinical trial of CLN-978 in patients with r/r B-NHL. The clinical trial design includes initial evaluation of CLN-978 as a monotherapy in a dose-escalation cohort.

Recently, academic and industry groups have generated clinical data and case series demonstrating that CD19 targeted CAR T cell therapy could lead to sustained improvements in disease, including durable remission in some cases, in several B cell mediated autoimmune indications. Nonetheless, cell therapy has many limitations, including the need for lymphodepleting chemotherapy, which is associated with significant toxicities, an FDA-recognized risk of secondary malignancies, and extended manufacturing timelines due to complexity of production. Based on the emerging clinical data supporting the efficacy of CD19 directed therapy in multiple autoimmune diseases and our belief that CLN-978 may address these limitations of CAR T cell therapy, we are also exploring the development of CLN-978 in autoimmune diseases.

Zipalertinib

Overview

Zipalertinib is an orally bioavailable small molecule designed as a next generation, irreversible EGFR inhibitor being developed in collaboration with an affiliate of Taiho for the treatment of a genetically defined subset of patients with NSCLC. In January 2022, the FDA granted Breakthrough Therapy designation to zipalertinib, and in November 2022, in collaboration with our partners at Taiho, we initiated the pivotal Phase 2b portion of the REZILIENT1 clinical trial evaluating zipalertinib in adult NSCLC patients with EGFRex20ins mutations who progressed after prior systemic therapy. We have a co-development and co-commercialization agreement for zipalertinib with an affiliate of Taiho, pursuant to which we are collaborating to develop zipalertinib and have the option to co-commercialize zipalertinib in the U.S. Development costs for zipalertinib are shared equally between us and Taiho with each party receiving 50% of any future pre-tax profits from potential U.S. sales of zipalertinib.

In June 2022, we provided a clinical update at the American Society for Clinical Oncology meeting that included safety and efficacy data from 73 evaluable NSCLC patients with EGFRex20ins mutations enrolled in the Phase 1/2a portion of the REZILIENT1 clinical trial across five dose levels, ranging from 30 to 150 mg twice daily. At the 100 mg twice-daily dose, we observed the following efficacy and safety highlights, which we believe reflect zipalertinib's differentiated clinical profile:

- 16 of 39 (41%) response evaluable patients achieved a confirmed partial response.
- 38 of 39 (97%) response evaluable patients achieved a best response of partial response or stable disease.
- The median progression-free survival ("PFS") was 12 months.
- No Grade 3 or greater treatment-related adverse events ("TRAEs") of rash or diarrhea, which are associated with EGFR tyrosine kinase inhibitor ("TKI") therapies.

Background on NSCLC and EGFR mutations

Lung cancer is by far the leading cause of cancer deaths among both men and women, comprising approximately 20% of all cancer deaths. The American Cancer Society estimated that in 2024, there will be approximately 234,580 new cases of lung cancer and approximately 125,070 deaths from lung cancer in the U.S. The most common subtype of lung cancer is NSCLC, which represents approximately 80% to 85% of all lung cancers.

EGFR is a receptor tyrosine kinase ("RTK"), that normally functions to trigger cell division when growth factors bind to the receptor. Oncogenic mutations in the tyrosine kinase domain can induce growth factor-independent activation of EGFR, resulting in uncontrolled cell growth and proliferation. Ultimately, these aberrant signals can contribute to the development of NSCLC. EGFR mutations are present in approximately 15% to 25% of U.S. and Western European NSCLC patients and approximately 30% to 50% of Asian NSCLC patients. Given its important role and prevalence in cancer, mutant EGFR is a critical target in lung cancer therapy. Exon 19 deletion and exon 21 L858R substitution mutations, collectively referred to as classical EGFR mutations, are the most common and account for over 75% of EGFR mutations in NSCLC. Multiple EGFR inhibitors, including gefitinib, erlotinib, afatinib, and osimertinib, target these common mutations and have been approved as first-line therapies, thus validating mutant EGFR as a target for the treatment of NSCLC.

Exon 20 insertions, which account for 7% to 13% of all EGFR mutations in NSCLC patients, are the most prevalent after the classical EGFR mutations. We estimate an incidence of approximately 2,000 to 5,000 NSCLC patients in the U.S. and approximately 1,000 to 3,000 patients in France, Germany, Italy, Spain, and the United Kingdom (the "UK") with EGFRex20ins mutations. Preclinical studies have shown that exon 20 insertions, as well as classical EGFR mutations, have the characteristics of oncogenic driver mutations, which are responsible for both tumorigenesis and the progression of cancer. However, in contrast to classical EGFR mutations, exon 20 insertions do not sensitize the kinase domain to treatment with approved EGFR inhibitors.

Two targeted therapies have previously received accelerated approval for NSCLC patients with EGFRex20ins mutations whose disease has progressed on or after platinum-based chemotherapy: amivantamab-vmjw (Rybrevant) and mobocertinib (EXKIVITY). Both Rybrevant and EXKIVITY have completed their confirmatory studies in the frontline setting in NSCLC patients with EGFRex20ins mutations. In the case of Rybrevant, the clinical trial tested Rybrevant plus standard-of-care chemotherapy versus chemotherapy alone (the "PAPILLON clinical trial"). In July 2023, Janssen Biotech, Inc., one of the Janssen Pharmaceutical Companies of Johnson & Johnson ("Johnson & Johnson"), reported that the PAPILLON clinical trial met its primary endpoint of a significant improvement in PFS. In March 2024, Johnson & Johnson subsequently received full approval of Rybrevant in the frontline setting from the FDA. In the case of EXKIVITY, the confirmatory clinical trial tested EXKIVITY monotherapy against standard-of-care chemotherapy alone. Also in July 2023, Takeda Pharmaceuticals, Inc. ("Takeda") reported that EXKIVITY failed to meet its PFS primary endpoint and subsequently announced plans to voluntarily withdraw EXKIVITY from the market no later than March 2024.

Design Properties

Zipalertinib is a small molecule that was designed as an irreversible EGFR inhibitor with a novel pyrrolopyrimidine scaffold, which is unique among the therapies in development that are targeting EGFRex20ins mutations. Zipalertinib is designed to fit into the adenosine triphosphate-binding site of EGFR where it covalently modifies C797, thereby forming a durable drug-protein linkage that irreversibly inhibits the mutant receptor. In preclinical studies, zipalertinib demonstrated high selectivity and inhibition of EGFR in cells expressing mutant EGFR proteins, with substantially less inhibition in cells expressing wild-type EGFR.

Clinical Development

REZILIENT1: Phase 1/2a Module

We initiated our ongoing Phase 1/2a portion of the REZILIENT1 clinical trial in the fourth quarter of 2019. This first-in-human, open-label, multi-center clinical trial was designed to evaluate the safety and tolerability, pharmacokinetics, pharmacodynamics, and preliminary efficacy of zipalertinib in adult NSCLC patients with EGFR^{ex20ins} mutations who progressed after prior systemic therapy. The clinical trial included two major components: dose escalation and cohort expansion. Dose escalation began with a single patient accelerated titration design and transitioned to rolling six decision rules upon the first occurrence of a Grade 2 or greater TRAE, which occurred at the 100 mg twice-daily dose level. This clinical trial had a flexible, adaptive design that included 30, 45, 65, 100, and 150 mg twice-daily dose cohorts and allowed for expansion of any given cohort, gated by acceptable safety and pre-specified efficacy criteria. Per original protocol, cohorts could be expanded to six, then 13, then 36 patients, gated by these criteria. We expanded cohorts at the 65 mg, 100 mg, and the 150 mg twice-daily dose levels, although we subsequently discontinued enrollment at the 150 mg level after enrolling 11 patients, based on assessment of the overall clinical profile at this dose level. During the Phase 1/2a portion of the REZILIENT1 clinical trial we enrolled a total of 39 patients at the 100 mg twice-daily dose level, which includes the original protocol maximum of 36 patients plus an additional three patients that were reassigned following our decision to discontinue enrollment at the 150 mg twice-daily dose level. We enrolled patients across sites in the U.S., the Netherlands, Singapore, Hong Kong, and Taiwan.

The Phase 1/2a portion enrolled a total of 73 patients who received at least one dose of zipalertinib. The patient population was heavily pre-treated, with a median of two prior systemic therapies and 66% of patients having received two or more prior therapies at clinical trial entry (i.e., third line of therapy or greater). Further, 36% of patients received prior treatment with an EGFR inhibitor, including 4% that received prior treatment with poziotinib or EXKIVITY, TKIs that target exon 20 insertion mutations. Over half (55%) of the patients received prior treatment with immunotherapy.

Phase 1/2a Safety and Pharmacokinetic Data

The following table provides a summary of treatment-related safety and tolerability events, including rash and diarrhea, which are toxicities related to inhibition of wild-type EGFR, as well as laboratory abnormalities including anemia and transaminase elevations across all twice-daily dose levels for comparison, as well as the overall safety population in the Phase 1/2a portion of the REZILIENT1 clinical trial. We believe that this safety and tolerability profile compares favorably to other EGFR^{ex20ins} inhibitors, in particular with respect to the incidence and severity of diarrhea.

Differentiated Safety and Tolerability Profile of Zipalertinib at 100mg Twice-Daily

Dose BID	≤65 mg (N = 23)		100 mg (N = 39)		150 mg (N = 11)		Overall (N = 73)	
AE Term, n (%)	All grade ¹	Grade ≥ 3	All grade	Grade ≥ 3	All grade	Grade ≥ 3	All grade	Grade ≥ 3
Rash	19 (83)	0	32 (82)	0	7 (64)	1 (9)	58 (80)	1 (1)
Paronychia	6 (26)	0	12 (31)	0	5 (45)	0	23 (32)	0
Diarrhea	4 (17)	0	14 (36)	0	4 (36)	2 (18)	22 (30)	2 (3)
Fatigue	5 (22)	0	8 (21)	0	2 (18)	0	15 (21)	0
Anemia	7 (30)	4 (17)	5 (13)	1 (3)	2 (18)	2 (18)	14 (19)	7 (10)
Dry skin	6 (26)	0	7 (18)	0	0	0	13 (18)	0
Nausea	5 (22)	0	4 (10)	0	3 (27)	0	12 (16)	0
Stomatitis	2 (9)	0	5 (13)	0	3 (27)	1 (9)	10 (14)	1 (1)
Alopecia	3 (13)	0	6 (15)	0	0	0	9 (12)	0
Dry eye	1 (4)	0	7 (18)	0	1 (9)	0	9 (12)	0
AST increased	3 (13)	1 (4)	3 (8)	1 (3)	2 (18)	1 (9)	8 (11)	3 (4)
Decreased appetite	4 (17)	0	4 (10)	0	0	0	8 (11)	0
Dose Interruptions	5 (22)		13 (33)		6 (55)		24 (33)	
Dose Reductions	2 (9)		5 (13)		3 (27)		10 (14)	
Dose Discontinuations	2 (9)		2 (5)		2 (18)		6 (8)	

¹Common Terminology Criteria for Adverse Events v5.0

In the 39 safety-evaluable patients in the Phase 1/2a portion treated at the 100 mg twice daily dose level, none experienced Grade 3 or greater treatment-related rash or diarrhea. At this dose level, 82% and 36% of patients experienced treatment-related rash and diarrhea, respectively, of either Grade 1 or 2 severity; however, the ratio of patients who experienced Grade 1 versus Grade 2 events is approximately 3:1 for both rash and diarrhea. Both events were manageable with conventional supportive care, and implementation of systematic gastrointestinal prophylaxis was not required for diarrhea management. As has been seen with other EGFR TKIs, a case of Grade 3 treatment-related pneumonitis was observed at this dose level, although the patient had recent treatment with checkpoint inhibitor therapy and the concurrent presence of a significant hydropneumothorax, not related to treatment, in the contralateral lung.

Key observations in 11 safety-evaluable patients at the 150 mg twice-daily dose level included treatment-related Grade 3 diarrhea in two patients, Grade 3 rash in one patient, and two patients with Grade 3 and Grade 4 transaminitis. In addition, one patient who was off treatment with zipalertinib for more than three weeks because of progressive disease was reported as having Grade 3 treatment-related pneumonitis; the patient had a concurrent *Pneumocystis jirovecii* infection. In addition, an increase in rates of dose reduction and dose discontinuation were observed among patients treated at the 150 mg twice-daily compared to the 100 mg twice-daily dose level. These observations informed our decision to discontinue further enrollment of patients at 150 mg twice-daily, after 11 patients.

Preliminary pharmacokinetic data demonstrated a near dose-dependent trend in exposure, as measured by unbound area under the curve ("AUC") and C_{max} values. Furthermore, the target AUC required to achieve tumor regression in preclinical studies was reached starting at the initial dose of 30 mg twice daily. Notable features of the zipalertinib pharmacokinetic profile include sustained pharmacokinetic exposure over the concentration required for 50% growth inhibition ("GI50") for EGFR_{T790M} mutations for eight hours post dose, limited interpatient heterogeneity, and limited exposure above the GI50 for wild-type EGFR at doses at or below 100 mg twice daily. Consistent with the clinical safety profile at 100 mg twice-daily dose compared with the 150 mg twice-daily dose, at the 150 mg twice-daily dose we observed zipalertinib concentrations above wild-type EGFR GI50 ratios for approximately four hours.

Phase 1/2a Efficacy Data

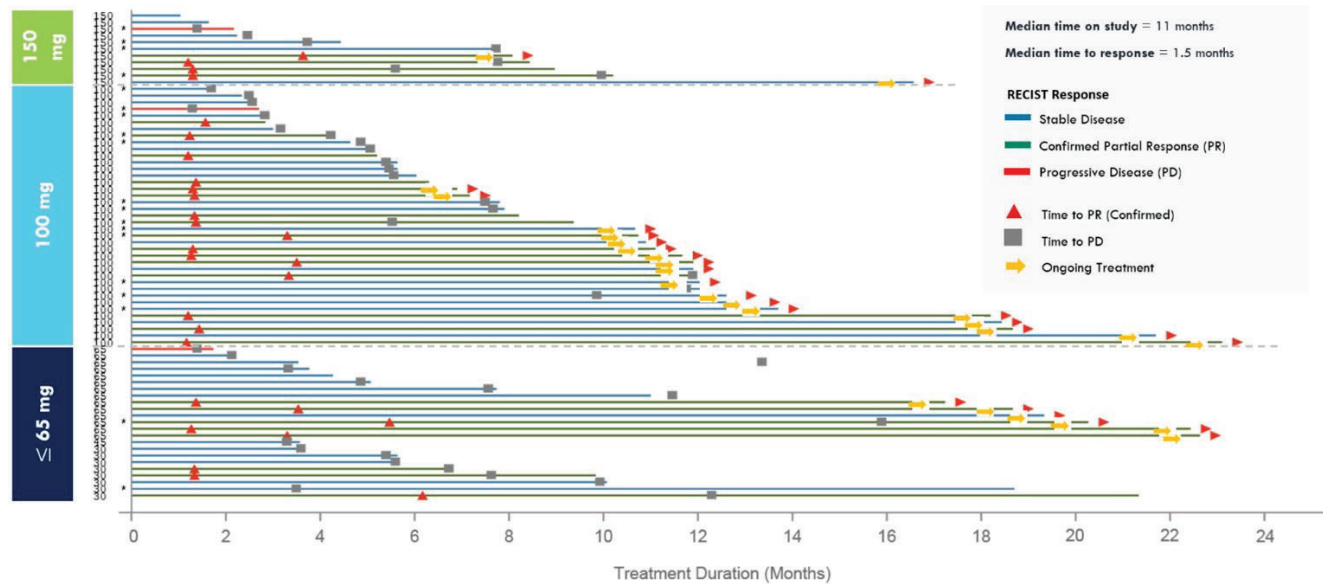
The following table summarizes best response characteristics for response-evaluable patients treated at 65 mg or below (N=23), 100 mg (N=39), and 150 mg (N=11) twice-daily dose levels as well as the overall population across dose levels in aggregate (N=73) as of a May 9, 2022 data cutoff. Among patients treated at 100 mg twice daily, 16 patients achieved a confirmed partial response, indicating a 41% confirmed overall response rate ("ORR"). This confirmed ORR was higher than the 36% confirmed ORR among 11 patients at the 150 mg twice-daily dose cohort. At the 100 mg twice-daily dose cohort, median PFS was 12 months compared to a PFS of only 8 months at the 150 mg twice-daily dose. As discussed above, Grade 3 or higher rash and diarrhea as well as dose reductions and dose discontinuations all favored the 100 mg twice-daily dose cohort.

Zipalertinib: Superior Safety and Efficacy Observed at 100mg Twice-Daily Dose

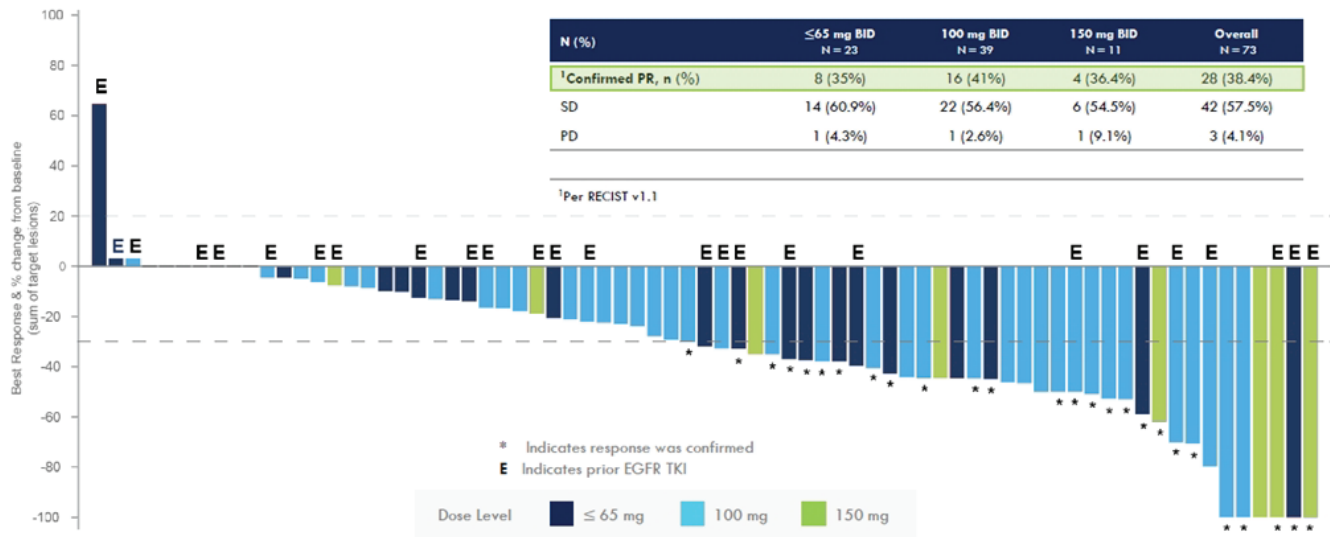
	<65 mg (N=23)	100 mg (N=39)	150 mg (N=11)	Total (N=73)
ORR	8 (35%)	16 (41%)	4 (36%)	28 (38%)
Median PFS	8 mo	12 mo	8 mo	10 mo
Gr3+ Rash	0	0	1 (9%)	1 (1%)
Gr3+ Diarrhea	0	0	2 (18%)	2 (3%)
Dose Reductions	2 (9%)	5 (13%)	3 (27%)	10 (14%)
Dose Discontinuations	2 (9%)	2 (5%)	2 (18%)	6 (8%)

Below are additional efficacy analyses for the 73 patients including a swimmer's chart (A) and a waterfall chart with percentage best change from baseline (B). We have also included a Kaplan-Meier curve showing median PFS (C). Patients in the clinical trial have their initial tumor imaging performed after approximately six weeks of treatment, and then every nine weeks thereafter. Based on these analyses, we believe that zipalertinib has shown substantial antitumor activity with broad EGFRex20 variant coverage, a rapid onset of action, and encouraging response quality as measured by PFS.

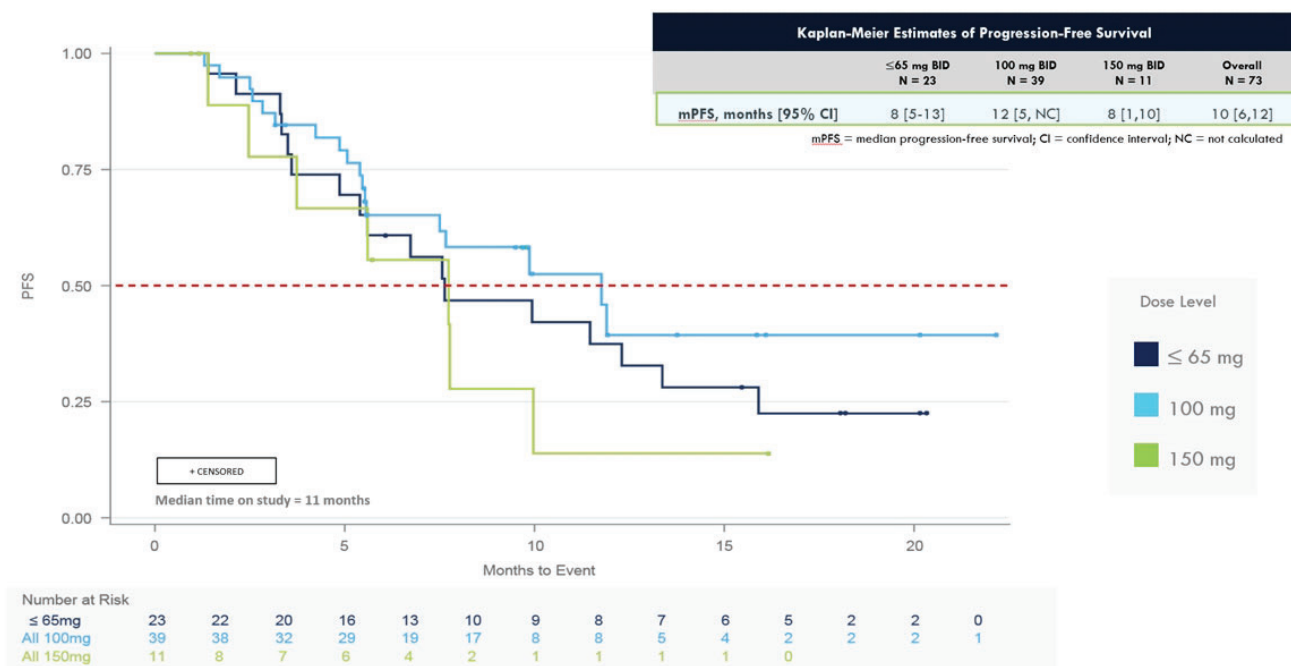
(A) Preliminary Efficacy Results from Ongoing Phase 1/2a Clinical Trial of Zipalertinib



(B) Best Response % Change from Baseline (Target Lesion)



(C) Estimated Median Progression-Free Survival



Pivotal Phase 2b Clinical Trial

In November 2022, in collaboration with our partners at Taiho, we initiated the ongoing, pivotal Phase 2b portion of the REZILIENT1 clinical trial of 100 mg twice daily zipalertinib in adult NSCLC patients with EGFRex20ins mutations who progressed after prior systemic therapy. The clinical trial is evaluating zipalertinib 100 mg twice daily in adult NSCLC patients with EGFRex20ins mutations who have received prior treatment with chemotherapy with or without an exon 20 insertion targeted therapy.

Pivotal Phase 3 Clinical Trial

In August 2023, our collaboration partners at Taiho initiated a global Phase 3 clinical trial testing zipalertinib plus standard-of-care chemotherapy versus standard-of-care chemotherapy alone in frontline adult NSCLC patients with EGFRex20ins mutations (REZILIENT3). Following a 6-12 patient safety run-in to assess the safety of the combination of zipalertinib with standard-of-care chemotherapy, the clinical trial will randomize up to 300 patients to receive either the combination of the two treatments or standard-of-care chemotherapy alone. The primary endpoint is PFS.

CLN-049

Overview

CLN-049 is a humanized bispecific antibody that we are developing for the treatment of AML and MDS. We are currently evaluating CLN-049 in a multi-ascending dose Phase 1 clinical trial in adult patients with r/r AML and MDS. CLN-049 is designed to simultaneously bind to FLT3 on the extracellular domain of target leukemic cells and to CD3 on T cells, triggering the T cells to kill the target cancer cells. FLT3 is a proto-oncogene and a validated target, and several kinase inhibitors targeting mutant FLT3 are approved for the treatment of r/r AML, but their use is limited to approximately 25% of the AML population with FLT3 mutations. By targeting the extracellular domain of FLT3, CLN-049 has the potential to address up to approximately 80% of AML patients that express mutant or wild-type FLT3.

Background on Acute Myeloid Leukemia, Myelodysplastic Syndrome, and FLT3

The American Cancer Society estimates that in 2024, there will be approximately 20,800 newly diagnosed patients with AML and approximately 11,220 deaths from AML in the U.S. AML is a complex hematologic malignancy characterized by uncontrolled proliferation of malignant immature myeloid blast cell populations. These blasts may completely infiltrate and replace the bone marrow, resulting in major disruption of normal hematopoiesis and pancytopenia, very high numbers of circulating blasts in the peripheral blood, and infiltration of visceral organs as well as the skin. In addition, patients with AML may be susceptible to bleeding complications due to thrombocytopenia and experience complications from treatment with cytotoxic chemotherapy. These patients may also be severely immuno-compromised secondary to their disease and experience prolonged periods of neutropenia and lymphopenia. As a result, these patients are often susceptible to life-threatening infections that also contribute to severe morbidity and mortality. Despite advancements in the treatment of AML, there continues to be a high unmet need in these patients.

MDS comprise a heterogeneous group of malignant hematopoietic stem cell disorders characterized by ineffective blood cell production and a risk of transformation to AML. The outcome of the disease is highly variable and dependent upon the underlying clinicopathologic features. There are several models for prediction of outcome that incorporate pathologic (bone marrow blast counts, cytogenetic abnormalities, and multilineage dysplasia), molecular, and clinical features (age, performance status, and type and severity of cytopenias). The management of high/very high risk MDS is dependent on patient fitness, pathologic features, and personal choices, and treatment options range from high dose chemotherapy with allogeneic stem cell transplantation to supportive care. Hypomethylating agents are a standard management approach with lower intensity regimens. The optimal agent and duration of therapy has not been defined. Either azacytidine or decitabine is typically given for at least four cycles to assess response.

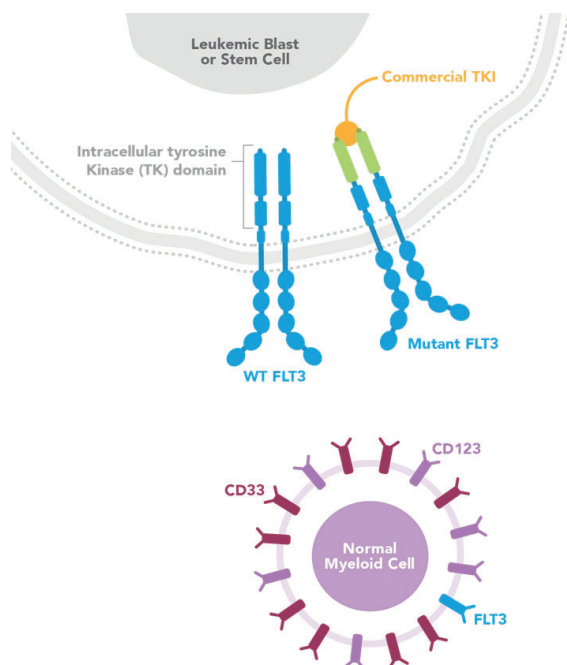
FLT3 is a Class III RTK with a well-recognized and essential role in hematopoiesis. In healthy individuals, expression of FLT3 is restricted to a subpopulation of hematopoietic stem and progenitor cells ("HSPCs"), inducing their proliferation and differentiation into monocytes, dendritic cells, B cells, and T cells. FLT3 has been identified as a proto-oncogene and plays a key role in promoting leukemic cell proliferation and survival.

Studies using flow cytometry have shown that FLT3 is expressed on AML blasts in approximately 80% of AML patients, regardless of mutational status. This broad expression of FLT3 in AML patients suggests that targeting FLT3 with a biologic agent, namely a T cell engaging bispecific antibody that recruits T cells to kill tumor cells expressing FLT3 on the cell surface, could address a larger AML patient population than the small-molecule inhibitors targeting the mutated version of the intracellular signaling domain of FLT3 that are approved or in development. Additionally, compared to other tumor surface antigens identified in AML, such as CD33 and CD123, FLT3 expression is generally restricted to a subpopulation of bone marrow HSPCs and circulating dendritic cells. We believe that the expression of FLT3 on the surface of leukemic blasts in most AML patients and its role as a known oncogenic driver make it an attractive therapeutic target for a T cell engager approach.

Design Properties

As shown below, CLN-049 is a humanized bispecific antibody construct comprised of two FLT3-binding domains, an Fc-silenced humanized IgG1 backbone, and CD3-binding scFvs, fused to the C-terminus of the antibody's heavy chain. In multiple preclinical studies, CLN-049 has demonstrated the ability to redirect T cells to lyse FLT3-expressing AML cells *in vitro* and potent antitumor activity *in vivo*. By targeting extracellular FLT3, regardless of mutant or wild-type status, we believe CLN-049 has the potential to address up to approximately 80% of AML patients, a broader patient population than existing small-molecule FLT3 kinase inhibitors acting on the intracellular domain, which are limited to a subset of approximately 25% of AML patients with FLT3 mutations.

CLN-049 Mechanism Potentially Allows for Broad FLT3 Depended AML Blast Killing

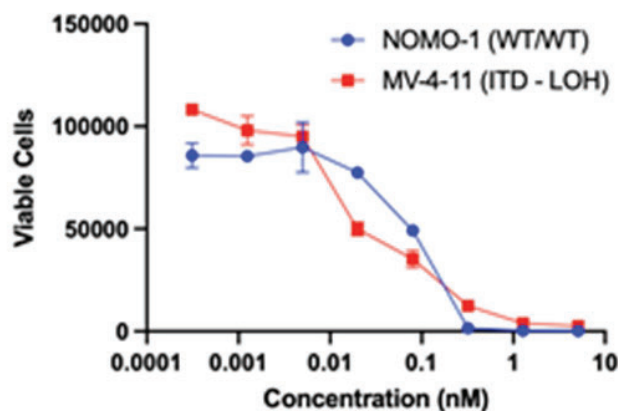


- 1 Validation:** FLT3 plays a key role in promoting leukemic cell proliferation and survival. Tyrosine kinase inhibitors (XOSPATA®, RYDAPT®) treat 20-30% of AML by targeting only mutant FLT3
- 2 Potential for treatment of broad AML population:** Targeting the extracellular domain of FLT3 could address ~80% of AML patients that express FLT3 on the cell surface, either wildtype or mutant forms
- 3 Promising therapeutic potential:** FLT3 is expressed on leukemic stem cells as well as blast cells, which may increase response durability. Since FLT3 is an oncogenic driver, target loss is unlikely
- 4 Potential for reduced toxicity risk:** FLT3 expression is very low on most mature normal myeloid cells compared to other frequently used targets for T cell engagers in AML like CD123 and CD33. FLT3 expression is very low on normal pluripotent stem cells

Preclinical Data

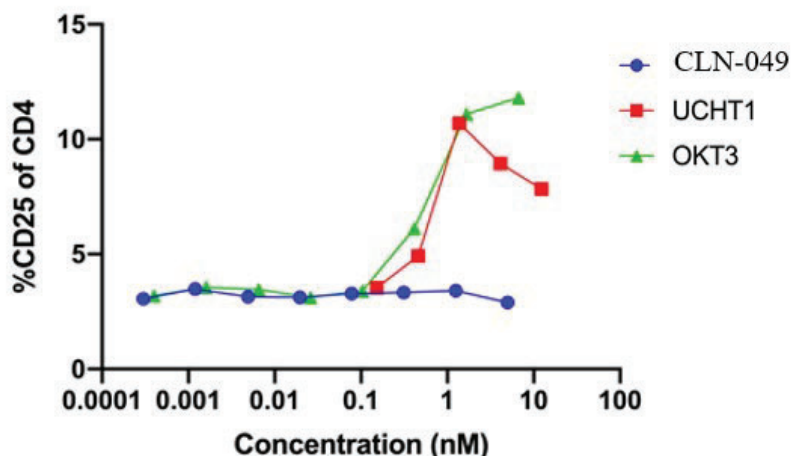
Given the observed variability in FLT3 expression levels among patients, we characterized the killing potential of CLN-049 across multiple cell lines expressing differing levels of FLT3 on the cell surface. CLN-049 was observed to mediate robust target-dependent cell killing *in vitro* across all AML cell lines tested; the EC50 value did not seem to be dependent on the number of FLT3 receptor molecules found on AML target cells. As shown in the figure below, we also observed potent redirected lysis of AML cell lines with wild-type or mutant FLT3 expression. Based on these results, we believe CLN-049 may effectively kill AML target cells with even low levels of FLT3 expression, regardless of wild-type or mutant status, which could potentially translate into deeper and more durable responses in the clinic and may allow us to treat a larger subset of AML patients.

CLN-049 Demonstrated Killing of Target Cells Expressing Wild-Type and Mutant FLT3, *In Vitro*



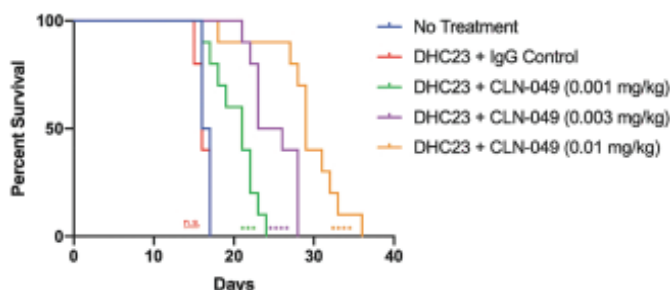
CLN-049 has two CD3-binding arms that can potentially crosslink CD3 on T cells, which may result in target cell-independent T cell activation and systemic cytokine-related toxicities. In preclinical studies, we examined whether CLN-049 can lead to non-specific T cell activation in the absence of target cells. As shown below, incubation of purified human T cells with CLN-049 in the absence of target-expressing cells did not induce T cell activation markers CD25 and CD69 on either CD4⁺ or CD8⁺ T cells in contrast to positive control anti-CD3 antibodies OKT3 and UCHT1 (CLN-049 parental anti-CD3 antibody) that induced T cell activation.

No T Cell Activation by CLN-049 in the Absence of Target Cells



The potential efficacy of CLN-049 was evaluated in a humanized mouse model where a human AML cell line was implanted systemically. As shown in the figure below, CLN-049 controlled AML leukemic burden in mice engrafted with human peripheral blood mononuclear cells ("PBMC") and led to improved survival of the mice in a dose-dependent manner beginning at very low doses. We believe CLN-049 effected this result by redirecting the T cells in the human PBMC population to kill the target AML cells.

Increased Survival of Engrafted Mice Starting at Very Low Doses of CLN-049



Ongoing Clinical Development

In December 2021, we initiated a Phase 1 clinical trial evaluating CLN-049 in r/r AML patients and subsequently amended the eligible patient population to include refractory MDS patients. The clinical trial is designed to primarily evaluate the pharmacokinetics and safety of the administration of CLN-049. We completed the single ascending dose portion of the Phase 1 clinical trial testing IV administration of CLN-049 and initiated a multi-ascending dose portion of the clinical trial utilizing SC dosing in December 2022. Safety data from the single-ascending dose portion of the Phase 1 clinical trial was published at the 2023 European Hematology Association annual meeting in June. We expect to report data from the multi-ascending dose portion of the clinical trial in the second half of 2024. In December 2023, we initiated a second Phase 1 clinical trial designed to evaluate the safety of CLN-049 in minimal residual disease-positive AML.

CLN-418

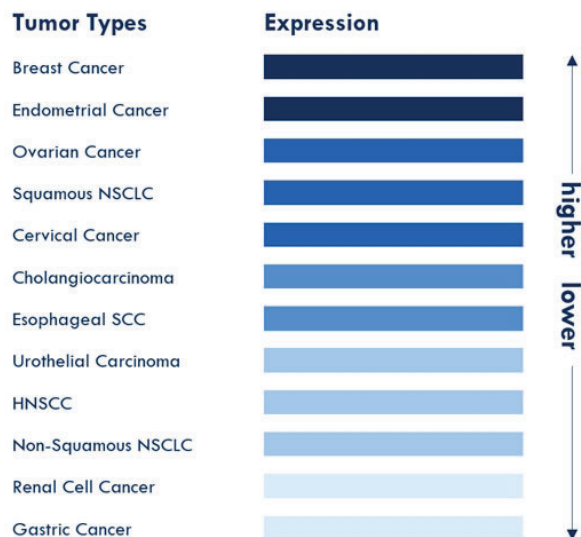
Overview

CLN-418 is a fully human bispecific immune activator targeting B7H4 and 4-1BB. In February 2023, we licensed from Harbour BioMed US Inc. ("Harbour") the exclusive rights to develop and commercialize CLN-418 in the U.S. in exchange for an upfront license fee of \$25 million, plus up to \$148 million in development and regulatory milestone payments, up to \$415 million in sales-based milestone payments, and tiered royalties up to high teens on potential U.S. commercial sales. We are currently evaluating CLN-418 in a Phase 1 clinical trial being conducted at U.S. and Australian sites in patients with advanced solid tumors.

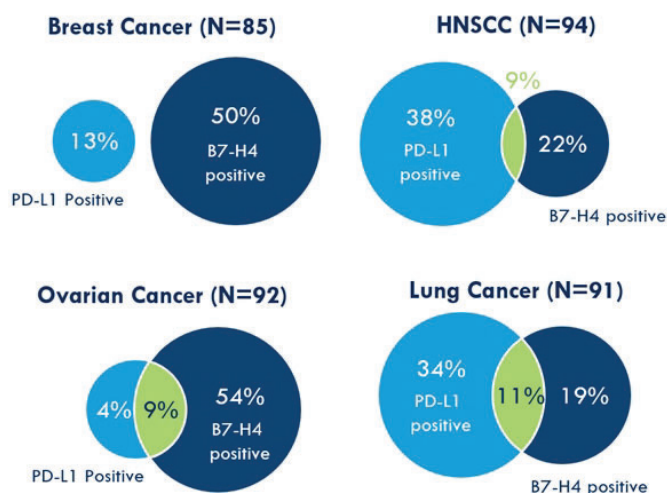
Background on B7H4 and 4-1BB

We believe that B7H4 represents an attractive target for cancer immunotherapy. B7H4 is a member of the B7 family of immune regulatory proteins that includes important immune inhibitory ligands like PD-L1. B7H4 is expressed on the cell surface of tumor cells and has been shown to play an immunosuppressive role by inhibiting T cell proliferation and expansion. Expression of B7H4 in patient tumor samples has been correlated with advanced stages of disease, poor prognosis, and lower overall patient survival. While B7H4 is expressed at potentially clinically relevant levels across a range of solid tumors, including triple-negative breast cancer, NSCLC, and ovarian cancer, its expression is limited on normal tissues, indicating the potential for a wide therapeutic window. Finally, B7H4 often has minimal overlap with PD-L1 expression, which we believe creates the potential to address so-called “cold tumors” for which current immune checkpoint inhibitor therapy approaches have demonstrated limited efficacy. The panel below includes B7H4 expression data from various studies conducted by Harbour.

B7H4 Expression Across Solid Tumor Types



B7H4 Relative to PD-L1 Expression Across Solid Tumor Cells

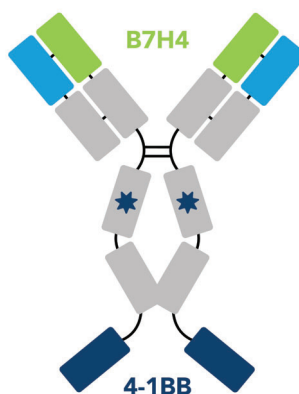


4-1BB is a key costimulatory molecule expressed on T cells and NK cells and has emerged as an attractive immunotherapy target. Mechanistically, 4-1BB activation induces T cell proliferation and survival, stimulates the secretion of inflammatory cytokines, and can promote anti-tumor immunity. Monoclonal agonistic antibodies targeting 4-1BB have been shown to have the ability to stimulate immune cells and generate antitumor responses in patients, but not without challenging toxicity issues often associated with non-specific 4-1BB immune cell activation, such as liver toxicity, which is thought to be caused by Fc-mediated cross-linking enabled by Fc gamma receptor expressing cells present in the liver.

Design Properties

CLN-418 is a fully human bispecific immune activator that contains human B7H4 and 4-1BB binding domains that were selected to have high binding affinity to B7H4 and designed to enable B7H4-crosslinking dependent 4-1BB activation. CLN-418 includes a silenced Fc domain designed to avoid cross-linking mediated by Fc gamma receptor-expressing cells. By targeting B7H4 on tumor cells, we believe CLN-418 represents a unique approach to enable the conditional activation of 4-1BB in the tumor microenvironment. Because of this mechanism and because CLN-418 lacks an active Fc domain, we believe CLN-418 has the potential to avoid toxicities associated with non-specific 4-1BB activation seen with Fc-functional monoclonal 4-1BB agonist antibodies. Also, CLN-418 may have the potential to synergize with other cancer therapies, particularly immunotherapy approaches, making it a strong candidate for combination therapy.

CLN-418 Structure

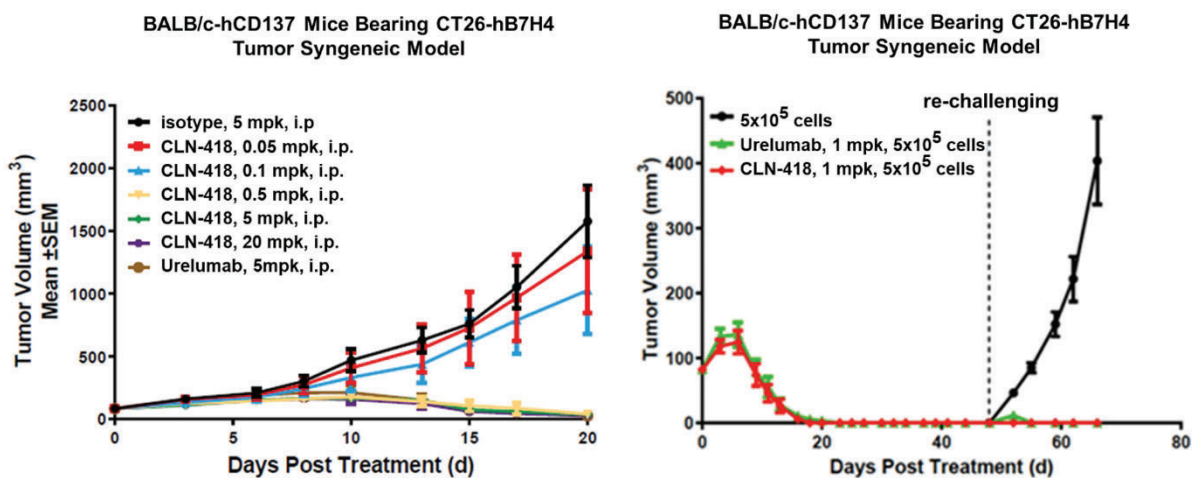


Preclinical Data

Preclinical studies in multiple tumor cell lines demonstrated that CLN-418-mediated T cell activation was contingent on the presence of B7H4, unlike monoclonal 4-1BB agonistic antibodies, such as urelumab and utomilumab.

Preclinically, CLN-418 showed the ability as a single agent to eradicate tumors *in vivo* and drive a memory response that prevented tumor growth upon re-challenge in the mice. An example of these results is shown below in a syngeneic mouse tumor model, whereby CLN-418 demonstrates a dose-dependent inhibition of tumor growth, and mice with an initial complete response following treatment with CLN-418 are subsequently immune upon tumor re-challenge.

CLN-418 Clears Tumors in Mice and Drives a Memory Response that Prevents Tumor Growth Upon Re-challenge



Ongoing Clinical Development Plan

We are currently evaluating CLN-418 in a Phase 1 clinical trial being conducted at U.S. and Australian sites in patients with advanced solid tumors. The part 1 dose escalation will test multiple dose levels of CLN-418, from 0.03 to 20 mg/kg, dosed once every three weeks. Once a proposed Phase 2 dose is determined, the part 2 dose expansion will evaluate up to 30 patients in each of three tumor specific expansion cohorts: one in NSCLC, one in breast cancer, and a third to be determined by the efficacy signals observed in part 1 of the clinical trial. Initial data from part 1 of the ongoing Phase 1 clinical trial is expected in the second half of 2024.

CLN-617

Overview

CLN-617 is a fusion protein uniquely combining, in a single agent, two potent antitumor cytokines, IL-2 and IL-12, with a collagen-binding domain for the treatment of solid tumors. The combination of IL-2 and IL-12 has previously been shown to synergistically enhance T and NK cell functions *in vitro* and mediated pronounced therapeutic activity in preclinical tumor models, even in well-established mouse models with primary and/or metastatic tumors. For nearly five decades, clinical researchers have studied the powerful role cytokines play in stimulating an immune response to cancer. However, severe toxicities associated with systemic cytokine administration and a short serum half-life have hindered their clinical development and broader commercial uptake. Despite numerous advancements in protein engineering, delivery and targeting mechanisms, there are currently only two FDA-approved cytokine-based cancer therapies, with the most recent approval occurring over twenty years ago.

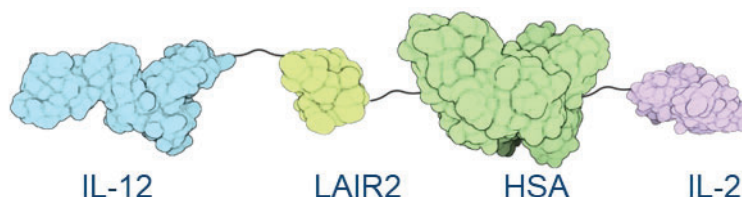
Background on IL-2 and IL-12

IL-2 and IL-12 are naturally occurring cytokines, or signaling molecules, of the immune system. They stimulate the immune response by enhancing the activity and proliferation of T cells and NK cells and the production of other pro-inflammatory cytokines, including IFN γ . IL-2 supports T cell expansion and IL-12 improves the quality of the T cell response. Furthermore, IL-2 signaling induces the upregulation of both subunits of the IL-12 receptor and downstream components of the IL-12 signaling pathway, and IL-12 signaling triggers the upregulation of CD25, the high affinity receptor subunit for IL-2, generating a positive feedback circuit. The combination of IL-2 and IL-12 synergistically enhances T cell and NK cell proliferation, functionality, and cytotoxicity *in vitro* and stimulates robust anti-tumor immunity *in vivo*.

Design Properties

We have included multiple differentiating features in CLN-617's design in order to address the historical limitations of cytokine-based therapy. First, tumor retention following intratumoral injection is enabled by the collagen-binding domain LAIR2, due to the presence of collagen in all solid tumors, and by HSA, which increases the molecular weight to further reduce the rate of diffusion out of the tumor tissue. Retention may help minimize the systemic dissemination and associated toxicities of IL-2 and IL-12 and prolong their immunostimulatory antitumor activity in the tumor. Second, CLN-617 is the only product candidate that we are aware of that co-delivers a pre-specified dose of IL-2 and IL-12 proteins, functionally enabling synergistic T and NK cell activation. Third, CLN-617's construct uses fully wild-type domains, which potentially reduces the immunogenicity risk associated with engineered cytokines. Finally, unlike other intratumoral cytokine-based therapies, CLN-617 does not rely on viral infection or nucleic acid transfection for *in situ* expression.

CLN-617 Design



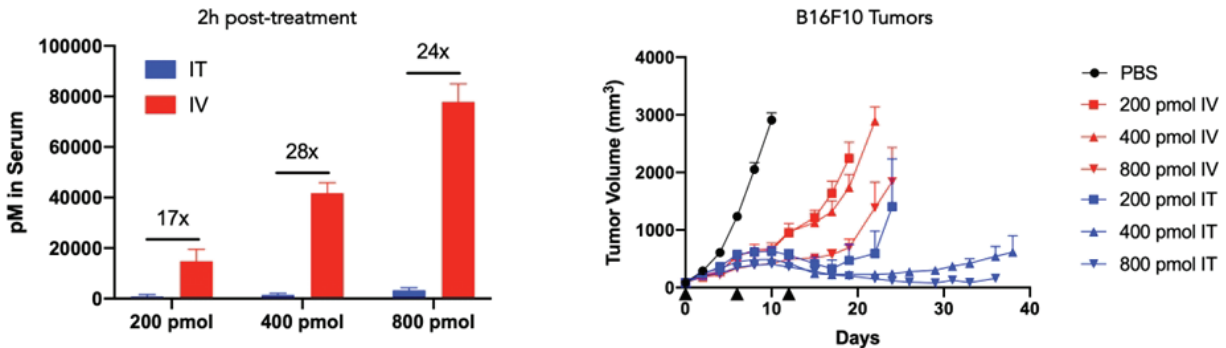
Given the broad expression of collagen across multiple tumor types and the well-validated anti-tumor activity of cytokine-based therapies, we believe CLN-617 may have utility across a broad range of solid tumors. We believe that CLN-617 is a first-in-class opportunity given it is the only anti-cancer product candidate we are aware of that is designed to co-deliver IL-2 and IL-12 cytokines and retain them in the tumor microenvironment.

The collagen-binding retention technology used in CLN-617 is based on technology that originated in the laboratory of Professor Karl Dane Wittrup, Ph.D. at the Massachusetts Institute of Technology ("MIT"). We have further developed and refined this technology in the design of CLN-617. We believe this technology represents a novel approach with the potential to broaden the therapeutic window of cytokines and other immunostimulatory agents with substantially reduced systemic toxicity.

Preclinical Data

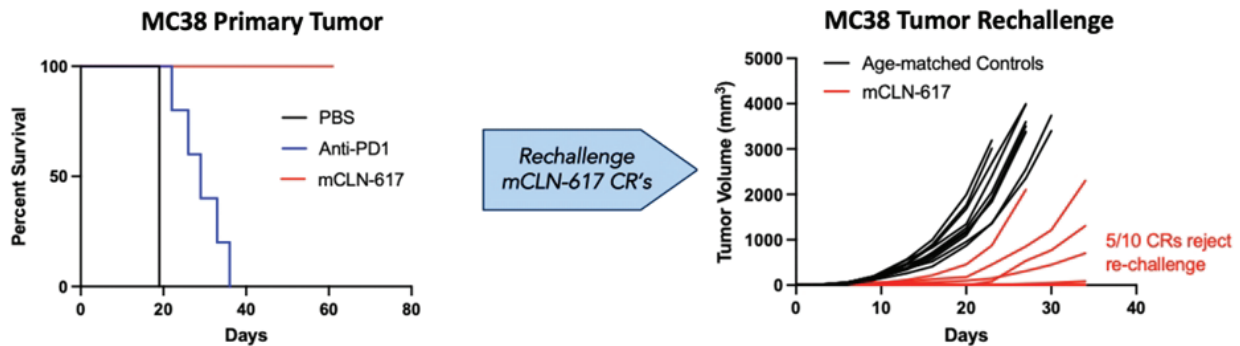
A murine surrogate incorporating the murine homologs of the constituent domains of CLN-617 was generated and named mCLN-617. Retention of mCLN-617 was demonstrated in mice bearing B16F10 tumors which were treated either intratumorally or intravenously with mCLN-617. Two hours after treatment, the concentration of IL-2 and IL-12 was assessed in serum, and we found that cytokine levels following intratumoral injection were on average <5% that of intravenously administered mCLN-617 (left panel below). These results suggest that mCLN-617 is efficiently retained in the tumor, thereby limiting systemic distribution. Intratumoral injection also enhanced the anti-tumor activity of mCLN-617. At each tested dose level, intratumorally administered mCLN-617 outperformed intravenously administered mCLN-617 as measured by tumor growth inhibition (right panel below).

Reduced Systemic Levels of mCLN-617 and Improved Efficacy Following Intratumoral Versus Intravenous Administration



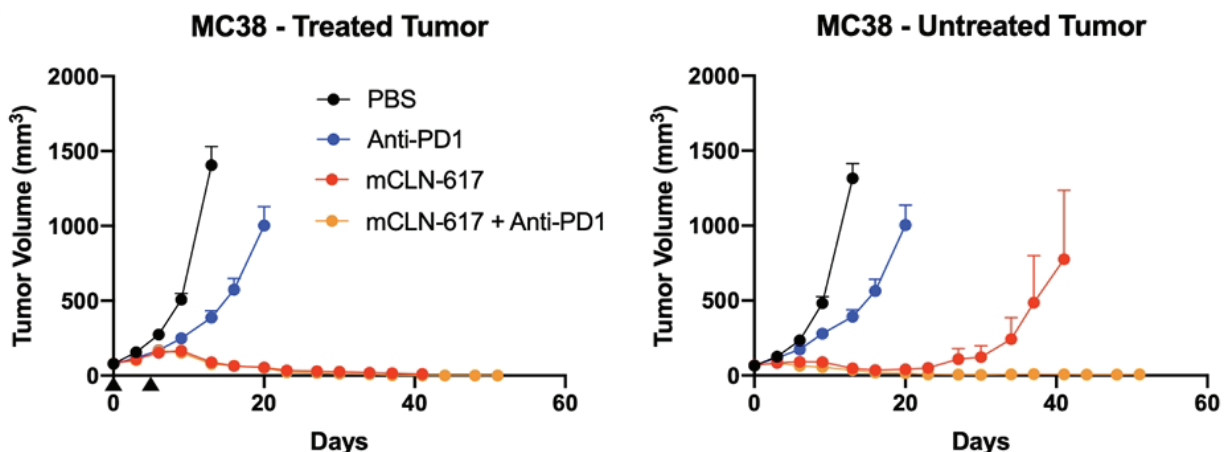
We utilized the MC38 syngeneic tumor model to assess whether mCLN-617 treatment could generate long-term immune memory following primary tumor clearance. As shown in the left panel below, mCLN-617 led to 100% complete responses in treated animals, whereas no complete responses were observed in control or anti-PD1 treated groups. Subsequently, we re-injected tumors into animals that achieved a complete response. As shown in the right panel below, five out of ten mice previously treated with mCLN-617 rejected the newly injected tumors, and all tumors that grew out did so at a slower rate than tumors in age-matched naïve controls. Similar results were achieved in the CT26 syngeneic tumor model.

High Complete Response Rate and Memory Response Following mCLN-617 Treatment



We demonstrated that in addition to mediating long-term memory, mCLN-617 is capable of generating responses against established untreated distal tumors due to the induction of systemic immunity, also known as an abscopal effect. We utilized C57BL/6 mice bearing two MC38 tumors, only one of which was treated with mCLN-617, either alone or in combination with systemically delivered anti-PD1 antibody. mCLN-617 alone mediated significant regression, including complete responses, of both the treated and untreated tumors. The effect was more consistent and durable in the untreated tumor when combined with anti-PD1, despite no significant survival benefit with anti-PD1 treatment alone. These results demonstrate both an abscopal effect and synergy of mCLN-617 with systemically administered anti-PD1 antibody.

Intratumorally Delivered mCLN-617 Inhibits Tumor Growth in Both Treated and Untreated Tumors and Synergizes with Systemically Delivered Anti-PD1 Therapy



The fully human CLN-617 clinical candidate has been generated, and the bioactivity of both cytokines and the collagen-binding domain has been confirmed *in vitro*. Both a non-GLP pharmacokinetic study and a GLP toxicology study with CLN-617 have been conducted in non-human primates.

Ongoing Clinical Development Plan

In December 2023, we dosed the first patient in the CLN-617 first-in-human Phase 1 clinical trial being conducted at U.S. sites in patients with advanced solid tumors. The part 1 dose escalation will test up to six dose levels of CLN-617 with CLN-617 administered as monotherapy in the first dose cycle and CLN-617 administered in combination with a checkpoint inhibitor therapy in each subsequent cycle. Based on the data from part 1, the part 2 dose optimization will be performed using two different dose levels at or close to the maximum tolerated dose or maximal biologically effective dose. Once a recommended Phase 2 dose is determined, the part 3 dose expansion will evaluate up to 15 patients in each of two tumor specific expansion cohorts: one in advanced or metastatic melanoma and one in advanced or metastatic head and neck squamous cell carcinoma.

Preclinical Programs

In addition to the product candidates described above, we are actively developing several preclinical oncology programs, all in the discovery stage, including our collaboration with Icahn School of Medicine at Mount Sinai for the development of novel hematopoietic progenitor kinase 1 ("HPK1") degraders.

Competition

The biotechnology and pharmaceutical industries are characterized by the rapid evolution of technologies and understanding of disease etiology, intense competition, and a strong emphasis on intellectual property. We believe that our differentiated business model, approach, scientific capabilities, know-how, and experience provide us with competitive advantages. However, we face, and will continue to face, competition from companies focused on more traditional therapeutic modalities, such as small-molecule inhibitors. We expect substantial competition from multiple sources, including major pharmaceutical, specialty pharmaceutical, and existing or emerging biotechnology companies, academic research institutions, governmental agencies, and public and private research institutions worldwide. Many of our competitors, either alone or through collaborations, 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 companies also compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites, and recruiting patients in clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs. As a result, our competitors may discover, develop, license, or commercialize products before or more successfully than we do.

We also face competition more broadly across the oncology market for cost-effective and reimbursable cancer treatments. The most common methods of treating patients with cancer are surgery, radiation, and drug therapy, including chemotherapy, hormone therapy, biologic therapy, such as monoclonal and bispecific antibodies, immunotherapy, cell-based therapy, and targeted therapy, or a combination of any such methods. There are a variety of available drug therapies marketed for cancer. In many cases, these drugs are administered in combination to enhance efficacy. While our product candidates, if approved, may compete with these existing drugs and other therapies, to the extent they are ultimately used in combination with or as an adjunct to these therapies, our product candidates may not be competitive with them. Some of these drugs are branded and subject to patent protection, and others are available on a generic basis. Insurers and other third-party payors may also encourage the use of generic products or specific branded products. As a result, we may face challenges in obtaining market acceptance of, and gaining significant share of the market for, any of our product candidates that we successfully introduce to the market. In addition, many companies are developing new oncology therapeutics, and we cannot predict what the standard of care will be as our product candidates progress through clinical development.

With respect to CLN-619, we are aware of several companies that are developing antibody-based therapies targeting MICA/B as a monotherapy and/or in combination with other agents, including: Bristol-Myers Squibb Company ("Bristol-Myers Squibb"), CanCure LLC, D2M Biotherapeutics, Inc., Genentech Inc. ("Genentech"), Novartis International AG ("Novartis"), and Xencor, Inc. To our knowledge, none of them has entered clinical development.

With respect to our CLN-978 program, we are aware of multiple companies developing product candidates that target CD19 or other tumor antigens relevant to B-NHL and B cell ALL using immune cells or other cytotoxic modalities. These mainly include immune cell redirecting therapeutics (e.g., T cell engagers), adoptive cellular therapies (e.g., CAR Ts), and antibody drug conjugates. Companies developing cell therapies or antibodies targeting CD19 include, but are not limited to, ADC Therapeutics, Allogene Therapeutics Inc., Amgen Inc. ("Amgen"), AstraZeneca plc ("AstraZeneca"), Autolus Therapeutics plc, Bristol-Myers Squibb, Century Therapeutics, Inc., Gilead Sciences Inc., Morphosys AG, Nkarta Inc., and Novartis.

With respect to zipalertinib, which we are co-developing with an affiliate of Taiho, we are aware of other EGFR inhibitors that have accelerated approval or are in clinical development for the treatment of NSCLC patients harboring EGFRex20ins mutations. In March 2024, Rybrevant (amivantamab), an EGFR/cMET bispecific antibody that was developed and is now marketed by Johnson & Johnson, obtained full approval from the FDA for adult patients with locally advanced or metastatic NSCLC with EGFRex20ins mutations whose disease has progressed on or after platinum-based chemotherapy. Additionally, in September 2021, EXKIVITY (mobocertinib), which was developed and marketed by Takeda, obtained accelerated approval from the FDA for adult patients with locally advanced or metastatic NSCLC with EGFRex20ins mutations whose disease has progressed on or after platinum-based chemotherapy. In July 2023, Takeda reported that EXKIVITY had not met its PFS primary endpoint and subsequently announced plans to voluntarily withdraw EXKIVITY from the market no later than March 2024. We believe that the most advanced clinical-stage programs for EGFRex20ins patients are furmonertinib from ArriVent BioPharma, Inc. and Allist Pharmaceuticals, Inc., sunvozertinib from Dizal Pharmaceutical Co. Ltd., and ORIC-114 from Oric Pharmaceuticals, Inc. (Voronoi, Inc., in mainland China, Hong Kong, Macau and Taiwan).

With respect to CLN-049, we are aware of several companies that are developing T cell engaging bispecifics for the treatment of AML, including those targeting CD33 (Amgen and Amphivena Therapeutics, Inc.), CD123 (Macrogenics, Inc.), and CCL1/CLEC12A (Genentech and Merus N.V.). In addition, Molecular Partners AG is developing a DARPIn T cell engager targeting CD33, CD123, and CD70, and Senti Biosciences, Inc. is developing a CD33xFLT3 chimeric antigen receptor natural killer ("CAR-NK") cell therapy. There are also several targeted small-molecule therapies approved for the treatment of r/r or first-line AML, including for AML with FLT3 mutations, such as Astellas Pharma Inc.'s XOSPATA (gilteritinib), Daiichi Sankyo Co. Ltd.'s VANFLYTA (quizartinib), and Novartis' RYDAPT (midostaurin).

With respect to CLN-418, we are aware of one other candidate by ABL Bio, Inc. in development that targets 4-1BB and B7H4 in a single bispecific molecule. Additionally, there are several candidates that target one or the other of these molecules. Several companies are developing monoclonal antibodies, antibody-drug conjugates or CD3 T cell engagers directed towards B7H4. These companies include Amgen, AstraZeneca, Genmab A/S ("Genmab"), GSK plc (Jiangsu Hansoh Pharmaceutical Group Co., Ltd. in mainland China, Hong Kong, Macau, and Taiwan), Mersana Therapeutics Inc., Nextcure, Inc., and Pfizer. Several companies are also developing 4-1BB agonists that target other tumor associated antigens rather than B7H4 (e.g., PD-L1, HER2, CLDN18.2, Nectin4, etc.) including Boehringer Ingelheim Pharma GmbH, Eli Lilly and Company, Genmab, Inhibrx, Inc., and Roche AG ("Roche").

With respect to CLN-617, we are not aware of any other drug candidates currently under development that integrate both IL-2 and IL-12 into a single multi-functional construct and stimulate the immune system in a tumor-specific manner. Krystal Biotech, Inc. is developing an IL-2 and IL-12 gene therapy delivered by intratumoral injection. We are aware of several companies actively developing clinical-stage programs as either individual IL-2 or IL-12 therapies, including: Alkermes plc, Ankyra Therapeutics, Inc., Apeiron Biologics AG, Dragonfly Therapeutics Inc., Philogen S.p.A., Roche, Sanofi S.A., Werewolf Therapeutics, Inc., and Xilio Therapeutics, Inc.

If our competitors develop and commercialize drugs that are safer, more effective, have fewer or less severe side effects, are more convenient to administer, are less expensive, or have a more favorable label than our product candidates, we could see a reduction or elimination in our commercial opportunity. Our competitors also may obtain FDA or other regulatory approval for their drugs more rapidly than we may obtain approval for ours, which could result in our competitors establishing a strong market position before we are able to enter the market. The key competitive factors affecting the success of all our product candidates, if approved, are likely to be their efficacy, safety, convenience, price, the level of generic competition, and the availability of reimbursement from government and other third-party payors.

License and Collaboration Agreements

Adimab

We have a collaboration agreement (the "Adimab Collaboration Agreement"), with Adimab. Pursuant to the Adimab Collaboration Agreement, we selected a single-digit number of biological targets against which Adimab used its proprietary platform technology to discover and/or optimize antibodies based upon mutually agreed upon research plans. Under the Adimab Collaboration Agreement, we have the ability to select a specified low single-digit number of additional biological targets against which Adimab will provide additional antibody discovery and optimization services.

During the research term and evaluation term for a given research program with Adimab, we have a non-exclusive worldwide license under Adimab's technology to perform certain research activities and to evaluate the program antibodies to determine whether we want to exercise our option to obtain a royalty-free, fully paid, non-exclusive license under Adimab's background patent rights to exploit such antibodies sublicenseable through multiple tiers (the "Adimab Option"). In the event we exercise the Adimab Option, we will pay an option fee for each target subject to certain adjustments.

Under the Adimab Collaboration Agreement, we paid a one-time, non-creditable, non-refundable technology access fee. We are also required to pay an annual access fee and research funding fees in connection with Adimab's full-time employees' compensation for performance of Adimab's obligations under the Adimab Collaboration Agreement. We are also obligated to make certain research delivery, clinical and sales milestone payments to Adimab in an aggregate amount of up to \$15.8 million for each product, on a product-by-product basis, subject to certain reductions and discounts. As of December 31, 2023, we have incurred a cumulative \$0.5 million of milestone payments under the Adimab Collaboration Agreement.

Furthermore, we are obligated to pay certain royalty payments on a product-by-product basis at a low single-digit percentage of annual aggregate worldwide net sales. Such royalty obligations will expire on a country-by-country and product-by-product basis upon the later of (a) a certain low double-digit number of years after the first commercial sale of such product in such country and (b) the expiration of the last issued and not expired, permanently revoked, or invalid claim within a program patent covering such product as defined in the agreement.

We may terminate the Adimab Collaboration Agreement at any time, for any reason, upon a specified period of advance written notice. The term of the Adimab Collaboration Agreement expires upon the last research program's evaluation term in the event no Adimab Option is exercised or, in the event an Adimab Option is exercised, after the royalty term thereof expires at the later of a specified period or invalid patent coverage of the relevant product. Refer to Note 7 of our notes to the consolidated financial statements included in this Annual Report on Form 10-K for further detail regarding the Adimab Collaboration Agreement.

Taiho

In June 2022, we sold our equity interest in our zipalertinib development subsidiary, Cullinan Pearl Corp. ("Cullinan Pearl"), to Taiho. Pursuant to the sale agreement, we are eligible to receive up to an additional \$130.0 million tied to EGFRex20 NSCLC regulatory milestones. None of these milestones have been achieved to date. Concurrently with the closing of the sale of our equity interest in Cullinan Pearl, we entered into a co-development agreement with an affiliate of Taiho, pursuant to which we are collaborating to develop zipalertinib and have retained the option to co-commercialize zipalertinib in the U.S. Development costs for zipalertinib incurred after the sale of our equity interest in Cullinan Pearl are shared equally between Taiho and us with each party receiving 50% of any future pre-tax profits from potential U.S. sales of zipalertinib.

We concluded that the co-development agreement with Taiho is a collaborative arrangement because we are an active participant in the development of zipalertinib. Payments made to or received from Taiho for zipalertinib development activities after the execution of the co-development agreement are recorded within research and development expenses. Refer to Note 7 of our notes to the consolidated financial statements included in this Annual Report on Form 10-K for further detail regarding the co-development agreement with Taiho.

DKFZ/Tübingen

Our development subsidiary, Cullinan Florentine Corp. ("Cullinan Florentine") is party to an exclusive license agreement (the "DKFZ/Tübingen License Agreement"), with Deutsches Krebsforschungszentrum ("DKFZ"), Eberhard Karls University of Tübingen, Faculty of Medicine ("University of Tübingen"), and Universitätsmedizin Gesellschaft für Forschung und Entwicklung mbH, Tübingen ("UFE"). Pursuant to the DKFZ/Tübingen License Agreement, DKFZ and University of Tübingen, collectively referred to as the Licensor, granted Cullinan Florentine an exclusive (even as to Licensor, UFE and its and their affiliates), worldwide, milestone- and royalty-bearing, license under certain licensed patent rights, applications, technical information and know-how, with the right to grant sublicenses through multiple tiers to research, develop, commercialize or otherwise exploit licensed products, itself and through its affiliates and third parties, within the field. Cullinan Florentine has the sole right, but not the obligation, to prosecute and maintain all licensed patent rights worldwide, provided that Licensor may take over or continue such prosecution and maintenance if Cullinan Florentine elects to cease the prosecution or maintenance of a licensed patent right.

Under the DKFZ/Tübingen License Agreement, Cullinan Florentine is obligated to achieve certain regulatory and research and development performance benchmarks (collectively, the "Performance Benchmarks"), by certain specified dates (collectively, the "Performance Dates"). If a Performance Benchmark is not achievable by the applicable Performance Date, Cullinan Florentine may extend the Performance Date for any single Performance Benchmark by a mid-single digit amount of months by providing written notice to Licensor and paying a non-refundable, non-creditable extension fee per each such extension. Cullinan Florentine may extend the Performance Date for any single Performance Benchmark up to a low single digit amount of times, provided that Cullinan Florentine may only request an extension a mid-single digit amount of times. If Cullinan Florentine is unable to seek a further extension per the preceding sentence, then Cullinan Florentine may seek a further extension by providing written notice to Licensor and any such extension shall be subject to the prior written approval of the Licensor, such approval not to be unreasonably withheld or delayed. As of December 31, 2023, Cullinan Florentine is in compliance with the performance benchmark requirements of the DKFZ/Tübingen License Agreement.

Additionally, Cullinan Florentine shall pay certain non-refundable, non-creditable milestone payments to Licensor upon the occurrence of certain clinical and regulatory events by a licensed product, whether triggered by Cullinan Florentine, its affiliates or sublicensees. Each milestone payment is paid one time only up to an aggregate of \$28.0 million. No milestones have been achieved to date under the DKFZ/Tübingen License Agreement.

Furthermore, Cullinan Florentine is required to pay a running low to mid-single digit royalty percentage on net sales of each licensed product on a country-by-country and product-by-product basis during the royalty term, subject to certain offsets or reductions. The aggregate, worldwide royalties due to Licensor for net sales of any licensed product in a calendar year shall not be reduced to an amount less than low to mid-single digit percentages. Such royalty obligations will expire on a country-by-country and product-by-product basis upon the later of (a) the expiration of the last valid claim of a patent which covers a product in such country and (b) a low double-digit anniversary following the first commercial sale of a product in such country. Under certain conditions upon a first change in control, Cullinan Florentine shall pay a non-refundable, non-creditable mid-single digit percent of sale proceeds, provided, however, that such payment shall not be required following consummation of an initial public offering of Cullinan Florentine.

Either party may terminate the agreement upon a material breach by the other party or insolvency of the other party. Cullinan Florentine may terminate the DKFZ/Tübingen License Agreement for any or no reason after the first filing of an IND or clinical trial agreement, by providing prior written notice. Licensor may terminate the agreement by providing prior written notice, if we or any of our affiliates challenges the validity of certain patent rights. Unless earlier terminated, the DKFZ/Tübingen License Agreement continues on a perpetual basis. Refer to Note 7 of our notes to the consolidated financial statements included in this Annual Report on Form 10-K for further detail regarding the DKFZ/Tübingen License Agreement.

Harbour

In February 2023, we entered into a License and Collaboration Agreement (the "Harbour License Agreement") with Harbour BioMed US Inc. ("Harbour"), pursuant to which Harbour granted us an exclusive license for the development, manufacturing, and commercialization of HBM7008, which we now refer to as CLN-418, in the U.S.

Under the terms of the Harbour License Agreement, we paid Harbour an upfront license fee of \$25 million upon entry into the agreement. Additionally, pursuant to the agreement, Harbour is eligible to receive (i) up to \$148 million in milestone payments based on the achievement of pre-specified development and regulatory milestones and (ii) up to an additional \$415 million in sales-based milestones as well as tiered royalties up to high teens on a licensed product-by-licensed product basis, as a percentage of U.S. commercial sales. Harbour has granted us certain intellectual property rights to enable us to perform our obligations and exercise our rights under the Harbour License Agreement. No milestones have been achieved to date under the Harbour License Agreement.

Unless earlier terminated, the Harbour License Agreement will continue in effect until the expiration of our royalty obligations. The Harbour License Agreement may be terminated by either party for a material breach by the other party, subject to notice and cure provisions, or in the event of the other party's insolvency. We may terminate the Harbour License Agreement for convenience by providing 90 days' written notice to Harbour. Refer to Note 7 of our notes to the consolidated financial statements included in this Annual Report on Form 10-K for further detail regarding the Harbour License Agreement.

MIT

Our development subsidiary, Cullinan Amber Corp. ("Cullinan Amber") is party to an exclusive patent license agreement (the "MIT License Agreement") with MIT. Pursuant to the MIT License Agreement, MIT granted to Cullinan Amber an exclusive, worldwide, milestone-, equity- and royalty-bearing license under certain licensed patent rights and applications, with the right to grant sublicenses through three tiers (so long as Cullinan Amber remains an exclusive licensee of the patent rights in the field worldwide) to develop, make, have made, use, sell, have sold, offer to sell, lease, and import licensed products containing specific fusion proteins in the field of diagnosis, prognosis, prophylaxis or treatment of cancer in humans or other animals. MIT shall prepare, file, prosecute, and maintain all of the patent rights, and Cullinan Amber shall cooperate with the prosecution, provide comments on patent prosecution documents, and pay all fees and costs relating to such prosecution and maintenance.

Cullinan Amber shall reimburse MIT for certain documented, out-of-pocket expenses incurred by MIT in connection with the preparation, filing, prosecution, maintenance and defense of the patent rights. The MIT License Agreement also provides for anti-dilution adjustments, requiring Cullinan Amber to issue MIT additional shares to ensure the shares issued to MIT do not equal less than the mid-single digit percentage amount until a financing threshold representing the aggregate investment Cullinan Amber is reached. MIT was also granted participation rights, up to a low double-digit percentage of the securities issued, in any proposed financings of Cullinan Amber. Cullinan Amber is also responsible for paying non-refundable, creditable annual license maintenance fees in an increasing amount over a certain number of years of the license and a fixed amount subsequent to this period of time. In addition, MIT granted Cullinan Amber an exclusive option to amend the definition of field to include expansion fields, and each such amendment would trigger the payment to MIT of an amendment fee and cause an amendment, to be negotiated upon exercise of the option, to Cullinan Amber's financial obligations with respect to the licensed products to reflect the additional rights and value being added.

Additionally, Cullinan Amber shall pay certain non-refundable, non-creditable milestone payments to MIT upon the achievement by itself or its sublicensees of certain clinical and regulatory milestones in an aggregate amount up to \$7.0 million for each distinct licensed product. Each milestone payment is paid one time only up to a certain payment amount, except there are separate milestone payments payable for a second and third indication of a licensed product in an aggregate amount up to \$5.5 million per product. Cullinan Amber shall also pay to MIT certain one-time milestone payments for the achievement of certain commercial milestones based on the calculation of net sales across all licensed products in all indications in an aggregate amount up to \$12.5 million. As of December 31, 2023, Cullinan Amber has incurred \$0.7 million of milestone payments under the MIT License Agreement.

Under certain conditions upon a change in control, Cullinan Amber is required to pay a specified change in control fee, and Cullinan Amber's clinical and regulatory milestone payments shall be increased by a certain low three-digit percentage amount.

Furthermore, Cullinan Amber is required to pay a running mid-single digit royalty percentage on net sales of all licensed products for each reporting period, subject to certain offsets or reductions. The royalties due to MIT for net sales of all licensed products shall not be reduced by more than 50%. Cullinan Amber is also required to share any income from sublicensing the licensed products, with the percentage to be determined by the clinical phase of the licensed product, no greater than low-to-mid double-digit percentages. Such royalty obligations will expire on a country-by-country and product-by-product basis upon the expiration or abandonment of all issued patents and filed patent applications within the patent rights.

Under the MIT License Agreement, MIT must notify Cullinan Amber of certain patentable inventions conceived and reduced to practice during a certain period of time ("Improvements") and Cullinan Amber has the option to acquire rights to those Improvements upon MIT's approval of a business and development plan, not to be unreasonably withheld, for a specified fee. In addition to this specified fee, Cullinan Amber's financial obligations with respect to the Improvements may be amended to reflect the value being added, such as by adding an upfront fee, maintenance fees, and milestone payments.

Cullinan Amber may voluntarily terminate the MIT License Agreement for any reason after providing written notice within a specified period of time in advance, provided that all amounts due to MIT have been paid. MIT has the right to terminate the MIT License Agreement upon written notice to Cullinan Amber if Cullinan Amber ceases to carry out its business related to the MIT License Agreement. Either party may terminate the MIT License Agreement upon a material breach by the other party. Unless earlier terminated, the MIT License Agreement shall remain in effect until the expiration or abandonment of all issued patents and the filed patent application within the patent rights. Refer to Note 7 of our notes to the consolidated financial statements included in this Annual Report on Form 10-K for further detail regarding the MIT License Agreement.

Intellectual Property

Our intellectual property is critical to our business, and we strive to protect it, including by obtaining, maintaining, defending, and enforcing patents and other intellectual property, in the U.S. and internationally, for our proprietary therapeutic molecules, technology, improvements, platforms, product candidates and components thereof, novel biological discoveries, new therapeutic approaches and potential indications, and other inventions that are important to our business. For our product candidates, generally we initially pursue patent protection covering compositions of matter, methods of use, and methods of production. Throughout the development of our product candidates, we will seek to identify additional means of obtaining patent protection that would potentially enhance commercial success, including improvement to pharmaceutical formulations, methods of use, and production.

As of February 16, 2024, our patent portfolio includes 27 patent families, including both patent applications we own, and patent applications exclusively in-licensed from external technology originators in a respective field. Specifically, we have exclusively in-licensed at least 31 patent applications pending worldwide. Patents that may issue from our pending patent applications, are expected to expire between 2034 and 2044, excluding any patent term adjustments or extensions, if applicable, that may be available. As to the patent term extension to restore patent term effectively lost following patent grant but during the FDA regulatory review process, 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.

We own four patent families related to our CLN-619 product candidate, including patent families directed to compositions, and methods of using such compositions therapeutically. The family of patent applications with claims directed to CLN-619 compositions, if issued, are expected to expire in 2039, excluding any patent term adjustments or extensions, if applicable. A further patent family that also is expected to expire in 2039, excluding any patent term adjustments or extensions, if applicable, contains claims directed to additional antibody compositions. For the first of these patent families, patent applications have so far been filed in Australia, Brazil, Canada, mainland China, the European Patent Office (the "EPO"), India, Indonesia, Israel, Japan, Korea, Malaysia, Mexico, New Zealand, the Philippines, Russia, Singapore, South Africa, Thailand, the U.S., and Vietnam. A third patent family with claims directed to additional anti-MICA antibody compositions and methods of use, if issued, is expected to expire in 2043, excluding any patent term adjustments or extensions, if applicable. The fourth family is comprised of a series of provisional applications that cover methods of treatment. Any patents issuing from an application claiming priority to these provisional applications will expire in 2044, excluding any patent term adjustments or extensions, if applicable.

Our portfolio related to our CLN-978 product candidate includes six patent families, directed to compositions, and methods of using such compositions therapeutically. The first two families of patent applications contain claims directed to CLN-978 compositions, which, if issued, are expected to expire in 2040, excluding any patent term adjustments or extensions, if applicable. Patent applications for both families have been filed in Australia, Canada, mainland China, the EPO, Israel, Japan, and the U.S. The third family of patent applications contains claims directed to alternative formats of compositions related to CLN-978, which, if issued, are expected to expire in 2039. Patent applications have been filed for this family in Australia, Canada, mainland China, the EPO, Hong Kong, Israel, Japan, South Africa, and the U.S. There are three additional patent families claiming methods of use. Two of these families, if issued, are expected to expire in 2044, and the third is expected to expire in 2045, excluding any patent term adjustments or extensions, if applicable. Each of these three families currently is comprised of a U.S. provisional application.

Zipalertinib is covered by a portfolio comprised of six patent families that are in-licensed from our collaboration partner Taiho Pharmaceutical Co. This portfolio includes a first family claiming specific EGFR-inhibiting compositions of matter which expires in 2034, excluding any patent term adjustments or extensions. This family includes granted patents or pending applications Australia, Brazil, Canada, mainland China, the EPO, India, Indonesia, Japan, Korea, Malaysia, Mexico, Philippines, the Russian Federation, Singapore, Taiwan, Thailand, the U.S., and Vietnam. There are five additional families that are directed to methods of use in conditions comprising exon-20 insertion mutations, exon 18 mutations, and/or exon 21 mutations, as well as treatment regimens that are expected to expire between 2037 and 2044, excluding any patent term adjustments or extensions.

Our portfolio related to our CLN-049 product candidate includes two patent families, in-licensed from the University of Tubingen, directed to compositions, and methods of using such compositions therapeutically. This family of patent applications contain claims directed to CLN-049 compositions, which, if issued, are expected to expire in 2039, excluding any patent term adjustments or extensions, if applicable. Patent applications have so far been filed for this family in Australia, Brazil, Canada, mainland China, the EPO, Hong Kong, India, Indonesia, Israel, Japan, Korea, Malaysia, Mexico, New Zealand, the Philippines, Singapore, South Africa, Thailand, the U.S., and Vietnam. A second patent family with claims directed to methods of use, if issued, is expected to expire in 2044, excluding any patent term adjustments or extensions, if applicable. A U.S. provisional application has been filed under this family.

Our portfolio related to our CLN-418 product candidate includes six U.S. patent applications that have been in-licensed from Harbour and are expected to expire between 2041 and 2042, excluding patent term adjustments or extensions.

Our portfolio related to our CLN-617 product candidate and related preclinical program includes three patent families. The first family was in-licensed from MIT, directed to compositions, and methods of using such compositions therapeutically. This family of patent applications contain claims covering CLN-617 related compositions, which, if issued, are expected to expire in 2039, excluding any patent term adjustments or extensions, if applicable. Patent applications have so far been filed for this family in Australia, Brazil, Canada, mainland China, the EPO, Israel, Japan, Korea, Singapore, and the U.S. The second family is a PCT application owned by us, which is directed to certain compositions, and methods of using such compositions therapeutically. This family contains claims covering additional CLN-617 related compositions, which, if issued, are expected to expire in 2041, excluding any patent term adjustments or extensions, if applicable. A third patent family with claims directed to methods of use, if issued, is expected to expire in 2044, excluding any patent term adjustments or extensions, if applicable. A U.S. provisional application has been filed under this family.

Our portfolio related to compositions comprising compounds which degrade HPK1 and methods of using such compounds therapeutically, includes one patent family that is jointly owned with Icahn School of Medicine at Mount Sinai. This patent family contains claims directed to compositions comprising HPK1 degraders and methods of using such compounds. A PCT application has been filed for this patent family. Applications claiming priority to the PCT application, if issued, are expected to expire in 2042, excluding any patent term adjustments or extensions. Individual patents extend for varying periods depending on the date of filing of the patent application or the date of patent issuance and the legal term of patents in the countries in which they are obtained. Generally, patents issued for regularly filed applications in the U.S. are granted a term of 20 years from the earliest effective non-provisional filing date. In addition, in certain instances, a patent term can be extended to recapture a portion of the U.S. Patent and Trademark Office (the "USPTO") review period in issuing the patent as well as a portion of the term effectively lost as a result of the FDA regulatory review period.

Manufacturing

We do not own or operate, and currently have no plans to establish, any good manufacturing practice ("GMP"), manufacturing facilities. We rely, and expect to continue to rely, on third parties for the manufacture of our product candidates for preclinical and clinical testing, as well as for commercial manufacture if any of our product candidates obtain marketing approval. We also rely, and expect to continue to rely, on third parties to package, label, store, and distribute our investigational product candidates and, if marketing approval is obtained, our commercial products. We believe this strategy allows us to maintain a more efficient infrastructure by eliminating the need for us to invest in our own manufacturing facilities, equipment, and personnel while also enabling us to focus our expertise and resources on the development of new product candidates.

We receive material from our contract manufacturing organizations ("CMOs") for preclinical testing. We receive clinical supply material manufactured in compliance with current GMP requirements ("cGMPs"), and we conduct appropriate quality assurance oversight before and during the clinical trial, in cooperation with our CMOs, to ensure compliance with the mutually agreed-upon process descriptions and cGMP regulations.

Zipalertinib, which we are co-developing with an affiliate of Taiho, is a small molecule that is manufactured in synthetic processes from available starting materials. The chemistry appears amenable to scale-up and does not currently require unusual equipment in the manufacturing process. We generally expect to rely on third parties for the manufacture of companion diagnostics, which are assays or tests that identify an appropriate patient population for zipalertinib. Depending on the technology solutions we select, we may rely on multiple third parties to manufacture and sell a single test.

We utilize a global network of manufacturers for our programs in development, with vendors located in the U.S., Europe, and Asia. Certain nodes in the drug substance and drug product supply chains may rely on single source, third-party CMOs, which is typical for this stage of development. Any reduction or halt in supply of drug substance or drug product from these contract manufacturers could limit our ability to develop our product candidates until we find a qualified replacement contract manufacturer. However, we have procured or have plans to procure sufficient drug substance to supply the planned initial clinical studies for our programs. At the appropriate time in development, we intend to put in place agreements under which our third-party contract manufacturers will generally provide us with necessary quantities of drug substance and drug product on a project-by-project basis, based on our projected development and commercial supply needs.

CLN-619, CLN-978, CLN-049, CLN-418, and CLN-617 are manufactured from a vial of a master cell bank ("MCB"), from the respective production cell lines. We have one MCB for each program that was produced and tested in accordance with cGMPs and applicable regulations. We either already have in place or intend to produce working cell banks for each product candidate later in product development. It is possible that we could lose multiple cell banks from multiple locations and have our manufacturing severely impacted by the need to replace the cell banks. However, we believe we have adequate backup should any particular cell bank be lost in a catastrophic event.

Governmental Regulation

U.S. Food and Drug Administration Regulation

The FDA and other U.S. 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, safety, efficacy, import, export, labeling, packaging, storage, distribution, record keeping, approval, advertising, promotion, marketing, post-approval monitoring, and post-approval reporting of drugs and biologics such as those we are developing. We, along with our vendors, collaboration partners, clinical research organizations ("CROs"), clinical trial investigators, and CMOs will be required to navigate the various preclinical, clinical, manufacturing, and commercial approval requirements of the governing regulatory agencies of the countries in which we wish to conduct studies or seek approval of our product candidates. The process of obtaining regulatory approvals of drugs and ensuring subsequent compliance with appropriate U.S. federal, state, local, and foreign statutes and regulations requires the expenditure of substantial time and financial resources. Failure to comply with the applicable regulatory requirements at any time during the product development process or post-approval may subject an applicant to delays in development or approval, as well as administrative and judicial sanctions.

In the U.S., the FDA regulates drugs under the Federal Food, Drug, and Cosmetic Act (as amended, the "FDCA"), and biologics under the FDCA and the Public Health Service Act (as amended, the "PHSA"), and their implementing regulations. Both drugs and biologics are also subject to other federal, state, and local statutes and regulations. Our product candidates are early-stage and have not been approved by the FDA for marketing in the U.S.

Our product candidates must be approved for therapeutic indications by the FDA before they may be marketed in the U.S. For our drug product candidates regulated under the FDCA, such as zipalertinib, the FDA must approve a New Drug Application ("NDA"). For our biologic product candidates regulated under the FDCA and PHSA, such as CLN-619, CLN-978, CLN-049, CLN-418, and CLN-617, the FDA must approve a Biologics License Application ("BLA"). The process is similar and generally involves the following:

- completion of extensive preclinical studies in accordance with applicable regulations, including studies conducted in accordance with good laboratory practice ("GLP") requirements;
- submission to the FDA of an IND which must become effective before clinical trials may begin and must be updated annually and when certain changes are made;
- approval by an institutional review board ("IRB") or independent ethics committee ("EC") at each clinical trial site before each clinical trial may be initiated;
- performance of adequate and well-controlled clinical trials in accordance with good clinical practice ("GCP") requirements and other clinical trial-related regulations to establish the safety and efficacy of the investigational product for each proposed indication;
- preparation and submission to the FDA of an NDA or BLA;
- payment of user fees for FDA review of the NDA or BLA, unless waived;
- a determination by the FDA within 60 days of its receipt of an NDA or BLA to file the application for review;
- satisfactory completion of one or more FDA pre-approval inspections of the manufacturing facility or facilities where the product will be produced to assess compliance with cGMPs to assure that the facilities, methods, and controls are adequate to ensure and preserve the drug or biological product's identity, strength, quality and purity;
- satisfactory completion of any FDA audits of the clinical trial sites that generated the data in support of the NDA or BLA; and
- FDA review and approval of the NDA or BLA, including, where applicable, consideration of the views of any FDA advisory committee, prior to any commercial marketing or sale of the drug or biologic in the U.S.

Before testing any drug or biologic in humans, the product candidate must undergo rigorous preclinical testing. Preclinical studies include *in vitro* and animal studies to assess preliminary safety and, in some cases, to establish the rationale for therapeutic use. The conduct of preclinical studies is subject to federal and state regulations and requirements, including GLP requirements for safety and toxicology studies. In the U.S., the results of the preclinical studies, together with manufacturing information and analytical data must be submitted to the FDA as part of an IND.

An IND is a request for authorization from the FDA to administer an investigational product to humans and must become effective before clinical trials may begin. The central focus of an IND submission is on the general investigational plan and the protocol(s) for clinical studies. 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. The IND will become effective 30 days after receipt by the FDA, unless the FDA raises concerns or questions about the supportive data, or the study design, particularly regarding potential safety issues with conducting the clinical trial as described in the protocol. In this situation, the trials are placed on clinical hold, and the IND sponsor must resolve any outstanding FDA concerns before clinical trials can proceed.

Clinical trials involve the administration of the product candidate to healthy volunteers or patient participants under the supervision of qualified investigators, generally physicians not employed by or under the trial sponsor's control, in accordance with GCP requirements, which include the requirements 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 clinical trial, dosing procedures, subject selection and exclusion criteria, and the parameters and criteria to be used in monitoring safety and evaluating effectiveness, including stopping rules that assure a clinical study will be stopped if certain adverse events should occur. Each protocol, and any subsequent amendments to the protocol, must be submitted to the FDA as part of the IND. Furthermore, each clinical trial must be reviewed and approved by an IRB or EC, either centrally or at each institution at which the clinical trial will be conducted, to ensure that the risks to individuals participating in the clinical trials are minimized and are reasonable related to the anticipated benefits. The IRB also approves the informed consent form that must be provided to each clinical trial subject or his or her legal representative and must monitor the clinical trial until completed.

The FDA may, at any time during the initial 30-day IND review period or while clinical trials are ongoing under the IND, impose a partial or complete clinical hold based on concerns for patient safety and/or noncompliance with regulatory requirements. This order issued by the FDA would delay a proposed clinical study or cause suspension of an ongoing study until all outstanding concerns have been adequately addressed, and the FDA has notified us that investigations may proceed. Imposition of a clinical hold could cause significant delays or difficulties in completing planned clinical studies in a timely manner. In addition, the IRB or the sponsor may suspend or discontinue a clinical trial at any time on various grounds, including a finding that the subjects are being exposed to an unacceptable health risk. Some studies also include oversight by an independent group of qualified experts organized by the clinical study 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 also are requirements governing the reporting of ongoing clinical trials and completed clinical trials to public registries. In the U.S., information about applicable clinical trials, including clinical trials results, must be submitted within specific timeframes for publication on the www.clinicaltrials.gov website.

A sponsor who wishes to conduct a clinical trial outside of the U.S. may, but need not, obtain FDA authorization to conduct the clinical trial under an IND. When a foreign clinical study is not conducted under an IND, the sponsor must ensure that the study complies with certain regulatory requirements, including GCP requirements, of the FDA in order to use the study as support for an IND or application for marketing approval. The GCP requirements encompass both ethical and data integrity standards for clinical studies. The FDA's regulations are intended to help ensure the protection of human subjects enrolled in non-IND foreign clinical studies, as well as the quality and integrity of the resulting data. They further help ensure that non-IND foreign studies are conducted in a manner comparable to that required for IND studies.

Clinical trials to evaluate therapeutic indications to support NDAs and BLAs for marketing approval are typically conducted in three sequential phases, which may overlap or be combined.

- Phase 1—Phase 1 clinical trials involve initial introduction of the investigational product in a limited population of healthy human volunteers or patients with the target disease or condition in the case of some products for severe or life-threatening diseases. These studies are typically designed to test the safety, dosage tolerance, absorption, metabolism, and distribution of the investigational product in humans, evaluate the side effects associated with increasing doses, and, if possible, to gain early evidence of effectiveness.
- Phase 2—Phase 2 clinical trials typically involve administration of the investigational product 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.
- Phase 3—Phase 3 clinical trials typically involve administration of the investigational product to an expanded patient population to further evaluate dosage, to provide substantial 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. Generally, two adequate and well-controlled Phase 3 clinical trials are required by the FDA for approval of an NDA or BLA.

Post-approval clinical trials, sometimes referred to as Phase 4 clinical trials, may be conducted after initial marketing approval. These clinical trials are used to gain additional experience from the treatment of patients in the intended therapeutic indication and are commonly intended to generate additional safety data regarding use of the product in a clinical setting. In certain instances, the FDA may mandate the performance of Phase 4 clinical trials as a condition of approval of an NDA or BLA. The mandatory studies are used to confirm clinical benefit in the case of drugs approved under the accelerated approval regulations or to provide additional clinical safety or efficacy data for "full" approvals. Failure to exhibit due diligence with regard to conducting required Phase 4 clinical trials could result in withdrawal of approval for products approved under accelerated approval regulations.

Progress reports detailing the results of clinical trials must be submitted at least annually to the FDA and more frequently if serious adverse events occur. In addition, IND safety reports must be submitted to the FDA for any of the following: serious and unexpected suspected adverse reactions; findings from other studies or animal or *in vitro* testing that suggest a significant risk in humans exposed to the product; and any clinically important increase in the case of a serious suspected adverse reaction over that listed in the protocol or investigator brochure. Phase 1, Phase 2, and Phase 3 clinical trials may not be completed successfully within any specified period, or at all. The FDA will typically inspect one or more clinical sites to assure compliance with GCP and the integrity of the clinical data submitted.

Concurrent with clinical trials, companies usually complete additional animal studies and must also develop additional information about the drug or biological characteristics of the product candidate and finalize a process for manufacturing the drug product in commercial quantities in accordance with cGMP requirements. The manufacturing process must be capable of consistently producing quality batches of the product candidate and manufacturers must develop, among other things, methods for testing the identity, strength, quality, and purity of the final drug product. Additionally, appropriate packaging must be selected and tested, and stability studies must be conducted to demonstrate that the product candidate does not undergo unacceptable deterioration over its shelf life and to identify appropriate storage conditions for the product candidates.

Expanded Access

Expanded access, also known as compassionate use, is the use of investigational products outside of clinical trials to treat patients with serious or immediately life-threatening diseases or conditions when there are no comparable or satisfactory alternative treatment options. FDA regulations allow access to investigational products on a case-by-case basis for the following groups: individual patients (single-patient INDs for treatment in emergency settings and non-emergency settings); intermediate-size patient populations; and larger populations for use of the investigational product under a treatment protocol or treatment IND.

Under the FDCA, sponsors of one or more investigational products for the treatment of a serious disease or condition must make publicly available their policy for evaluating and responding to requests for expanded access for individual patients. Sponsors are required to make such policies publicly available upon the earlier of initiation of a Phase 2 or Phase 3 clinical trial, or 15 days after the investigational drug or biologic receives designation as a Breakthrough Therapy, Fast Track product, or regenerative medicine advanced therapy.

In the U.S., the Right to Try Act, among other things, provides an additional mechanism for patients with a life-threatening condition who have exhausted approved treatments and are unable to participate in clinical trials to access certain investigational products that have completed a Phase 1 clinical trial, are the subject of an active IND, and are undergoing investigation for FDA approval. Unlike the expanded access framework described above, the Right to Try Act does not require the FDA to review or approve requests for use of the investigational product. There is no obligation for a sponsor to make its investigational products available to eligible patients as a result of the Right to Try Act, but the sponsor must develop an internal policy and respond to patient requests according to that policy.

FDA Marketing Application Review and Approval Process

A company seeking marketing approval for a new drug or biologic in the U.S. must submit the results of the preclinical studies and clinical trials, together with detailed information relating to the product's chemistry, manufacture, controls and proposed labeling, among other things including payment of a user fee for review of the application, are submitted to the FDA as part of an NDA or BLA requesting approval to market the product for one or more indications. An NDA is a request for approval to market a new drug for one or more specified indications, and a BLA is a request for approval to market a new biologic for one or more specified indications. The NDA or BLA must include all relevant data available from pertinent preclinical studies and clinical studies, 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. Data may come from company-sponsored clinical trials intended to test the safety and efficacy of a product's use or from a number of alternative sources, including studies initiated by investigators. To support marketing approval, the data submitted must be sufficient in quality and quantity to establish the safety and efficacy of the investigational drug, or the safety, purity and potency of the investigational biologic, to the satisfaction of the FDA. FDA approval of an NDA or BLA must be obtained before a drug or biologic may be marketed in the U.S.

In addition, under the Pediatric Research Equity Act ("PREA"), certain NDAs and BLAs and certain supplements to an NDA or BLA must contain data to assess the safety and effectiveness of the drug or biological product candidate for the claimed indications in all relevant pediatric subpopulations and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The Food and Drug Administration Safety and Innovation Act requires that a sponsor who is planning to submit a marketing application or supplement to an application for a drug or biological product that includes a new active ingredient or clinically active component, new indication, new dosage form, new dosing regimen or new route of administration submit an initial Pediatric Study Plan within 60 days after an end-of-Phase 2 meeting or as may be agreed between the sponsor and the FDA. Unless otherwise required by regulation, PREA does not apply to a drug or biological product for an indication for which orphan designation has been granted.

In the U.S., the FDA reviews all submitted NDAs and BLAs to ensure they are sufficiently complete to permit substantive review before it accepts them for filing and may request additional information rather than accepting the application for filing. The FDA may refuse to file any NDA or BLA that it deems incomplete or not properly reviewable at the time of submission and may request additional information. In this event, the NDA or BLA must be resubmitted with additional information. Once the submission is accepted for filing, the FDA begins an in-depth review of the marketing application. Applications receive either standard or priority review. Under the current goals mandated under the Prescription Drug User Fee Act (the "PDUFA"), the FDA has ten months in which to complete its initial review of a standard marketing application and respond to the applicant, and six months for a priority marketing application. The FDA does not always meet its PDUFA goal dates for standard or priority marketing applications. The review process and the PDUFA goal date may be extended by three months if the FDA requests or the marketing application sponsor otherwise provides additional substantial information or clarification regarding information already provided in the submission within the last three months before the PDUFA goal date. The FDA may further refer an application to an advisory committee for review, evaluation, and recommendation as to whether the application should be approved. Though the FDA is not bound by such recommendations, it considers them carefully when making decisions. If the FDA's evaluations of the marketing application and the clinical and manufacturing procedures and facilities are favorable, the FDA may issue an approval letter. If the FDA finds deficiencies in the marketing application, it may issue a complete response letter, which defines the conditions that must be met in order to secure final approval of the marketing application. If and when those conditions have been met to the FDA's satisfaction, the FDA will issue an approval letter, authorizing commercial marketing of the drug. Sponsors that receive a complete response letter may submit to the FDA information that represents a complete response to the issues identified by the FDA. Resubmissions by the marketing application sponsor in response to a complete response letter trigger new review periods of varying length (typically two to six months) based on the content of the resubmission. Before approving an NDA or BLA, the FDA typically will 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 or BLA, the FDA may inspect one or more clinical trial sites to assure compliance with GCP and other requirements and the integrity of the clinical data submitted to the FDA. To assure GMP and GCP compliance, an applicant must incur significant expenditure of time, money and effort in the areas of training, record keeping, production, and quality control. If the FDA's evaluation of the marketing application and the commercial manufacturing procedures and facilities is not favorable, the FDA may not approve the marketing application.

Even if the FDA approves a product, depending on the specific risk(s) to be addressed, the FDA may limit the approved indications for use of the product, require that contraindications, warnings or precautions be included in the product labeling, require that post-approval studies, including Phase 4 clinical trials, be conducted to further assess a product's safety or efficacy after approval, require testing and surveillance programs to monitor the product after commercialization, or impose other conditions, including distribution and use restrictions or other risk management mechanisms under a risk evaluation and mitigation strategy ("REMS"), which can materially affect the potential market and profitability of the product. REMS can include medication guides, communication plans for healthcare professionals, and elements to assure safe use ("ETASU"). ETASU can include, but are not limited to, special training or certification for prescribing or dispensing, dispensing only under certain circumstances, special monitoring, and the use of patent registries. The FDA may prevent or limit further marketing of a product based on the results of post-marketing studies or surveillance programs. After approval, some types of changes to the approved product, such as adding new indications, manufacturing changes, and additional labeling claims, are subject to further testing requirements and FDA review and approval.

Orphan Drug Designation and Exclusivity

Under the Orphan Drug Act, the FDA may grant orphan drug designation ("ODD") to a drug or biologic intended to treat a rare disease or condition, defined as a disease or condition with either a patient population of fewer than 200,000 individuals in the U.S., or a patient population of greater than 200,000 individuals in the U.S. when there is no reasonable expectation that the cost of developing and making available the drug or biologic in the U.S. will be recovered from sales in the U.S. of that drug or biologic. ODD must be requested before submitting an NDA or BLA. After the FDA grants ODD, the generic identity of the therapeutic agent and its potential orphan use are disclosed publicly by the FDA. The granting of ODD does not convey any advantage in or shorten the duration of the regulatory review and approval process.

If a product that has received ODD and subsequently receives the first FDA approval for that drug for the disease for which it has such designation, the product is entitled to orphan product exclusivity, which means that the FDA may not approve any other applications, including a full NDA or BLA, to market the same drug or biologic for the same indication for seven years from the approval of the NDA or BLA, except in limited circumstances, such as a showing of clinical superiority to the product with orphan drug exclusivity or if the FDA finds that the holder of the orphan drug exclusivity has not shown that it can assure the availability of sufficient quantities of the orphan drug to meet the needs of patients with the disease or condition for which the drug was designated. 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 ODD are tax credits for certain research and a waiver of the NDA or BLA 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 ODD. In addition, orphan drug exclusive marketing rights in the U.S. 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. The FDA has historically taken the position that the scope of orphan exclusivity aligns with the approved indication or uses of a product, rather than the disease or condition for which the product received orphan designation. However, on September 30, 2021, the U.S. Court of Appeals for the Eleventh Circuit issued a decision in *Catalyst Pharms., Inc. v. Becerra* holding that the scope of orphan drug exclusivity must align with the disease or condition for which the product received orphan designation, even if the product's approval was for a narrower use or indication. The FDA announced on January 24, 2023 that, despite the *Catalyst* decision, it will continue to apply its longstanding regulations, which tie the scope of orphan exclusivity to the uses or indications for which the drug is approved, rather than to the designation. The FDA's application of its orphan drug regulations post-*Catalyst* could be the subject of future legislation or to further challenges in court.

Expedited Development and Review Programs

The FDA maintains several programs intended to facilitate and expedite development and review of new drugs and biologics to address unmet medical needs in the treatment of serious or life-threatening diseases or conditions. These programs include Fast Track designation, Breakthrough Therapy designation, priority review and accelerated approval. Fast Track designation, Breakthrough Therapy designation, priority review and accelerated approval do not change the standards for approval but may expedite the development or approval process.

A new drug or biologic is eligible for Fast Track designation if it is intended to treat a serious or life-threatening disease or condition and demonstrates the potential to address unmet medical needs for such disease or condition. Fast Track designation applies to the combination of the product and the specific indication for which it is being studied. Fast Track designation provides increased opportunities for sponsor interactions with the FDA during preclinical and clinical development, in addition to the potential for rolling review once a marketing application is filed, meaning that the FDA may initiate review of sections of a Fast Track product's application before the application is complete upon satisfaction of certain conditions.

In addition, a new drug or biological product may be eligible for Breakthrough Therapy designation if it is intended to treat a serious or life-threatening disease or condition and preliminary clinical evidence indicates that the drug or biologic, alone or in combination with or more other drugs or biologics, may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. Breakthrough Therapy designation provides all the features of Fast Track designation in addition to intensive guidance on an efficient development program beginning as early as Phase 1, and FDA organizational commitment to expedited development, including involvement of senior managers and experienced review staff in a cross-disciplinary review, where appropriate.

Any product submitted to the FDA for approval, including a product with Fast Track or Breakthrough Therapy designation, may also be eligible for priority review. A product is eligible for priority review if it is intended to treat a serious or life-threatening disease or condition, and if approved, would provide a significant improvement in safety or effectiveness. For original NDAs and BLAs, 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).

The FDA may grant accelerated approval to a product intended to treat a serious or life-threatening disease or condition that generally provides a meaningful therapeutic advantage to patients over available treatments, and demonstrates 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 ("IMM") that is reasonably likely to predict an effect on IMM or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments.

For drugs granted accelerated approval, the FDA generally requires sponsors to conduct, in a diligent manner, adequate and well-controlled post-approval confirmatory studies to verify and describe the product's clinical benefit. Failure to conduct required post-approval studies with due diligence, failure to confirm a clinical benefit during the post-approval studies, or dissemination of false or misleading promotional materials would allow the FDA to withdraw the product approval on an expedited basis. The Food and Drug Omnibus Reform Act of 2022 ("FDORA"), enacted on December 29, 2022, as part of the Consolidated Appropriations Act, 2023, includes numerous reforms to the accelerated approval process for drugs and biologics and enables the FDA to require, as appropriate, that a post-approval study be underway prior to granting accelerated approval. FDORA also expands the expedited withdrawal procedures available to the FDA to allow the agency to use expedited procedures if a sponsor fails to conduct any required post-approval study of the product with due diligence. FDORA also adds the failure of a sponsor of a product approved under accelerated approval to conduct with due diligence any required post-approval study with respect to such product or to submit timely reports with respect to such product to the list of prohibited acts in the FDCA. All promotional materials for product candidates approved under accelerated approval are subject to prior review by the FDA unless the FDA informs the applicant otherwise.

FDA Approval or Clearance of Companion Diagnostics

In August 2014, the FDA issued final guidance clarifying the requirements that will apply to the development and approval of therapeutic products intended for use with *in vitro* companion diagnostics. According to the guidance, for novel drugs and biologics, a companion diagnostic device and its corresponding therapeutic should be approved or cleared contemporaneously by the FDA for the use indicated in the therapeutic product's labeling. Approval or clearance of the companion diagnostic device will ensure that the device has been adequately evaluated and has adequate performance characteristics in the intended population. In July 2016, the FDA issued a draft guidance intended to assist sponsors of the therapeutic products and *in vitro* companion diagnostic devices on issues related to co-development of the products. In April 2020, the FDA issued a final guidance on the development and labeling of *in vitro* companion diagnostic devices for oncology therapeutics products.

Under the FDCA, *in vitro* diagnostics, including companion diagnostics, are regulated as medical devices. In the U.S., the FDCA and its implementing regulations, and other federal and state statutes and regulations govern, among other things, medical device design and development, preclinical and clinical testing, premarket clearance or approval, registration and listing, manufacturing, labeling, storage, advertising and promotion, sales and distribution, export and import, and post-market surveillance. Unless an exemption applies, diagnostic tests require marketing clearance or approval from the FDA prior to commercial distribution.

The FDA previously has required *in vitro* companion diagnostics intended to select the patients who will respond to a product candidate to obtain premarket approval ("PMA"), simultaneously with approval of the therapeutic product candidate. The PMA process, including the gathering of clinical and preclinical data and the submission to and review by the FDA, can take several years or longer. It involves a rigorous premarket review during which the applicant must prepare and provide the FDA with reasonable assurance of the device's safety and effectiveness and information about the device and its components regarding, among other things, device design, manufacturing and labeling. PMA applications are subject to an application fee.

A clinical trial is typically required for a PMA application and, in a small percentage of cases, the FDA may require a clinical study in support of a Premarket Notification under Section 510(k) of the FDCA. A manufacturer that wishes to conduct a clinical study involving the device is subject to the FDA's investigational device exemption ("IDE") regulations. The IDE regulations distinguish between significant and non-significant risk device studies and the procedures for obtaining approval to begin the study differ accordingly. Also, some types of studies are exempt from the IDE regulations. A significant risk device presents a potential for serious risk to the health, safety, or welfare of a subject. Significant risk devices are devices that are substantially important in diagnosing, curing, mitigating, or treating disease or in preventing impairment to human health. Studies of devices that pose a significant risk require both FDA and an IRB approval prior to initiation of a clinical study. Many companion diagnostics are considered significant risk devices due to their role in diagnosing a disease or condition. Non-significant risk devices are devices that do not pose a significant risk to the human subjects. A non-significant risk device study requires only IRB approval prior to initiation of a clinical study.

After a device is placed on the market, it remains subject to significant regulatory requirements. Medical devices may be marketed only for the uses and indications for which they are cleared or approved. Device manufacturers must also establish registration and device listings with the FDA.

In the U.S., device manufacturers are also subject to the FDA's medical device reporting regulations, which require that a manufacturer report to the FDA if a device it markets may have caused or contributed to a death or serious injury, or has malfunctioned and the device or a similar device that it markets would be likely to cause or contribute to a death or serious injury, if the malfunction were to recur, and the FDA's correction and removal reporting regulations, which require that manufacturers report to the FDA corrections or removals if undertaken to reduce a risk to health posed by the device or to remedy a violation of the FDCA that may present a risk to health. A medical device manufacturer's manufacturing processes and those of its suppliers are required to comply with the applicable portions of the FDA's Quality System Regulation, which covers the methods and documentation of the design, testing, production, processes, controls, quality assurance, labeling, packaging and shipping of medical devices. Domestic facility records and manufacturing processes are subject to periodic unscheduled inspections by the FDA. The FDA also may inspect foreign facilities that export products to the U.S.

Post-Approval Requirements for Drugs and Biologics in the U.S.

In the U.S., drugs and biologics manufactured or distributed pursuant to FDA approvals are subject to pervasive and continuing regulation by the FDA, including, among other things, requirements relating to recordkeeping, periodic reporting, product sampling and distribution, reporting of adverse experiences with the product, complying with promotion and advertising requirements, which include restrictions on promoting products for unapproved uses or patient populations (known as “off-label use”) and limitations on industry-sponsored scientific and educational activities. Although physicians may prescribe approved products for off-label uses, manufacturers may not market or promote such uses. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses, including not only by Company employees but also by agents of the Company or those speaking on the Company’s behalf, and a company that is found to have improperly promoted off-label uses may be subject to significant liability. Failure to comply with these requirements can result in, among other things, adverse publicity, warning letters, corrective advertising and potential civil and criminal penalties, including liabilities under the False Claims Act where products carry reimbursement under federal health care programs. Promotional materials for approved drugs and biologics must be submitted to the FDA in conjunction with their first use or first publication. Further, if there are any modifications to the product, including proposed changes to the indication, labeling or manufacturing processes or facilities, the applicant may be required to submit and obtain FDA approval of a new or supplemental NDA or BLA, which may require the development of additional data or preclinical studies and clinical trials.

The FDA may impose a number of post-approval requirements as a condition of approval of an NDA or BLA. For example, the FDA may require post-market testing, including Phase 4 clinical trials, and surveillance to further assess and monitor the product’s safety and effectiveness after commercialization.

The FDA periodically inspects the sponsor’s records related to safety reporting and/or manufacturing; the latter including assessment of compliance with cGMP through periodic unannounced inspections. Accordingly, manufacturers and their subcontractors involved in the manufacture and distribution of approved products are required to register their establishments with the FDA and to maintain compliance with ongoing regulatory requirements, including cGMP, requiring continual expenditure of time, money and effort in the area of production and quality control to maintain compliance. Failure to comply with statutory and regulatory requirements can subject a manufacturer to possible legal or regulatory action, such as warning letters, suspension of manufacturing, product seizures, injunctions, civil penalties or criminal prosecution. There is also a continuing, annual program fee for any marketed product.

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, requirements for post-market studies or clinical trials to assess new safety risks, or imposition of distribution or other restrictions under a REMS. Other potential consequences include, among other things:

- restrictions on the marketing or manufacturing of the product, complete withdrawal of the product from the market or product recalls;
- safety alerts, Dear Health Care Provider letters, press releases or other communications containing warnings or other safety information about the product;
- mandated modification of promotional materials and labeling and issuance of corrective information;
- fines, warning letters, or untitled letters;
- holds on clinical trials;
- refusal of the FDA to approve applications or supplements to approved applications, or suspension or revocation of product approvals;
- product recall, seizure or detention, or refusal to permit the import or export of products;
- injunctions or the imposition of civil or criminal penalties; and
- consent decrees, corporate integrity agreements, debarment or exclusion from federal healthcare programs.

U.S. Patent Term Restoration and Marketing Exclusivity

Depending upon the timing, duration and specifics of FDA approval of our current and future product candidates, some of our U.S. patents may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984, commonly referred to as the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit restoration of the patent term of up to five years as compensation for patent term lost during the FDA regulatory review process. Patent-term restoration, however, cannot extend the remaining term of a patent beyond a total of 14 years from the product's approval date and only those claims covering such approved drug product, a method for using it or a method for manufacturing it may be extended. The patent-term restoration period is generally one-half the time between the effective date of an IND and the submission date of a marketing application plus the time between the submission date and the approval of that application, except that the review period is reduced by any time during which the applicant failed to exercise due diligence. Only one patent applicable to an approved drug is eligible for the extension and the application for the extension must be submitted prior to the expiration of the patent. The USPTO, in consultation with the FDA, reviews and approves the application for any patent term extension or restoration. In the future, we may apply for restoration of patent term for our currently owned or licensed patents to add patent life beyond its current expiration date, depending on the expected length of the clinical trials and other factors involved in the filing of the relevant marketing application.

Regulatory exclusivity provisions under the FDCA also can delay the submission or the approval of certain applications. The FDCA provides a five-year period of non-patent marketing exclusivity within the U.S. to the first applicant to gain approval of an NDA for a new chemical entity. A drug is a new chemical entity if the FDA has not previously approved any other new drug containing the same active moiety, which is the molecule or ion responsible for the action of the drug substance. During the exclusivity period, the FDA may not accept for review an abbreviated new drug application ("ANDA"), or a 505(b)(2) NDA submitted by another company for another version of such drug where the applicant does not own or have a legal right of reference to all the data required for approval. However, an application may be submitted after four years if it contains a certification of patent invalidity or non-infringement.

The FDCA also provides three years of exclusivity for an NDA, 505(b)(2) NDA or supplement to an existing NDA if new clinical investigations, other than bioavailability studies, that were conducted or sponsored by the applicant are deemed by the FDA to be essential to the approval of the application, for example, new indications, dosages or strengths of an existing drug. This three-year exclusivity covers only the conditions of use associated with the new clinical investigations and does not prohibit the FDA from approving ANDAs for drugs containing the original active agent for other conditions of use. Five-year and three-year exclusivity will not delay the submission or approval of a full NDA. However, an applicant submitting a full NDA would be required to conduct or obtain a right of reference to all of the preclinical studies and adequate and well-controlled clinical trials necessary to demonstrate safety and effectiveness.

In addition, both drugs and biologics can also obtain pediatric exclusivity in the U.S. 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 study in accordance with an FDA-issued Written Request for such a study.

U.S. Biosimilars and Exclusivity

The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010 (collectively, the "ACA"), includes a subtitle called the Biologics Price Competition and Innovation Act (the "BPCIA"), which created an abbreviated approval pathway for biological products that are biosimilar to or interchangeable with an FDA-licensed reference biological product. The FDA has issued several guidance documents outlining an approach to review and approval of biosimilars in the U.S. Biosimilarity, which requires that there be no clinically meaningful differences between the biological product and the reference product in terms of safety, purity, and potency, can be shown through analytical studies, animal studies, and a clinical study or studies. Interchangeability requires that a product is biosimilar to the reference product, and the product must demonstrate that it can be expected to produce the same clinical results as the reference product in any given patient and, for products that are administered multiple times to an individual, the biologic and the reference biologic may be alternated or switched after one has been previously administered without increasing safety risks or risks of diminished efficacy relative to exclusive use of the reference biologic.

Under the BPCIA, a reference biological product is granted 12 years of data exclusivity from the time of first licensure of the product, and an application for a biosimilar product may not be submitted to the FDA until four years following the date that the reference product was first licensed by the FDA. In addition, the approval of a biosimilar product may not be made effective by the FDA until 12 years from the date on which the reference product was first licensed. During this 12-year period of exclusivity, another company may still market a competing version of the reference product if the FDA approves a full BLA for the competing product containing that applicant's own preclinical data and data from adequate and well-controlled clinical trials to demonstrate the safety, purity and potency of its product. The BPCIA also created certain exclusivity periods for biosimilars approved as interchangeable products. At this juncture, it is unclear whether products deemed "interchangeable" by the FDA will, in fact, be readily substituted by pharmacies, which are governed by state pharmacy law.

The BPCIA is complex and continues to be interpreted and implemented by the FDA. In addition, government proposals have sought to reduce the 12-year reference product exclusivity period. Other aspects of the ACA, some of which may impact the BPCIA exclusivity provisions, have also been the subject of recent litigation. As a result, the ultimate impact, implementation, and regulatory interpretation of the BPCIA remain subject to significant uncertainty.

Other U.S. Regulatory Matters

Manufacturing, sales, promotion, and other activities of product candidates following product approval, where applicable, or commercialization are also subject to regulation by numerous regulatory authorities in the U.S. in addition to the FDA, which may include the Centers for Medicare & Medicaid Services ("CMS"), other divisions of the Department of Health and Human Services ("HHS"), the Department of Justice, the Drug Enforcement Administration, the Consumer Product Safety Commission, the Federal Trade Commission, the Occupational Safety & Health Administration, the Environmental Protection Agency, and state and local governments and governmental agencies.

Other Healthcare Laws in the U.S.

In the U.S., pharmaceutical manufacturers and their products are subject to extensive regulation, including laws intended to prevent fraud and abuse in the healthcare industry. These laws subject pharmaceutical manufacturers and their products to regulation by national, state and local agencies, including, but not limited to the DOJ, the Office of Inspector General of the U.S. Department of Health and Human Services ("OIG"), and other regulatory bodies. These laws, some of which apply to pharmaceutical manufacturers only after the manufacturers have marketed products, include:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons and entities from knowingly and willfully soliciting, offering, paying, receiving or providing any remuneration (including any kickback, bribe, or certain rebate), directly or indirectly, overtly or covertly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made, in whole or in part, under a federal healthcare program such as Medicare and Medicaid; a person or entity need not have actual knowledge of the federal Anti-Kickback Statute or specific intent to violate it in order to have committed a violation;
- the federal civil and criminal false claims laws, including the civil False Claims Act (the "FCA"), which prohibit individuals or entities from, among other things, knowingly presenting, or causing to be presented, to the federal government, claims for payment or approval that are false, fictitious or fraudulent; knowingly making, using, or causing to be made or used, a false statement or record material to a false or fraudulent claim or obligation to pay or transmit money or property to the federal government; or knowingly concealing or knowingly and improperly avoiding or decreasing an obligation to pay money to the federal government;
- manufacturers can be held liable under the FCA even when they do not submit claims directly to government payors if they are deemed to "cause" the submission of false or fraudulent claims. In addition, the government may assert that a claim that includes items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the FCA. The FCA also permits a private individual acting as a "whistleblower" to bring actions on behalf of the federal government alleging violations of the FCA and to share in any monetary recovery;
- the federal civil monetary penalties laws, which impose civil fines for, among other things, the offering or transfer or remuneration to a Medicare or state healthcare program beneficiary if the person knows or should know it is likely to influence the beneficiary's selection of a particular provider, practitioner, or supplier of services reimbursable by Medicare or a state health care program, unless an exception applies;

- the Health Insurance Portability and Accountability Act of 1996 ("HIPAA"), which imposes criminal and civil liability for knowingly and willfully executing a scheme, or attempting to execute a scheme, to defraud any healthcare benefit program, including private payors, knowingly and willfully embezzling or stealing from a healthcare benefit program, willfully obstructing a criminal investigation of a healthcare offense, or falsifying, concealing or covering up a material fact or making any materially false statements 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 need not have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009 ("HITECH"), and their respective implementing regulations, which imposes, among other things, specified requirements on covered entities and their business associates relating to the privacy and security of individually identifiable health information including mandatory contractual terms and required implementation of technical safeguards of such information;
- federal laws, such as the Medicaid Drug Rebate Program, that require pharmaceutical manufacturers to report certain calculated product prices to the government or provide certain discounts or rebates to government authorities or private entities, often as a condition of reimbursement under government healthcare programs;
- the so-called "federal sunshine law" or Open Payments, which requires manufacturers of drugs, devices, biologics, and medical supplies for which payment is available under Medicare, Medicaid, or the Children's Health Insurance Program, to monitor and report annually certain transfers of value made to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors), physician assistants, nurse practitioners, clinical nurse specialists, certified registered nurse anesthetists and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members; and
- analogous state and foreign laws and regulations, such as state anti-kickback and false claims laws, which may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers, and may be broader in scope than their federal equivalents; state and foreign laws require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government or otherwise restrict payments that may be made to healthcare providers; state and foreign laws that require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers, and restrict marketing practices or require disclosure of marketing expenditures and pricing information; state and local laws that require the registration of pharmaceutical sales representatives; state and foreign laws that govern the privacy and security of health information in some circumstances. These data privacy and security laws may differ from each other in significant ways and often are not pre-empted by HIPAA, which may complicate compliance efforts.

In addition, pharmaceutical manufacturers may also be subject to U.S. federal and state consumer protection and unfair competition laws and regulations, which broadly regulate marketplace activities and activities that potentially harm consumers.

The distribution of drugs and biological products is subject to additional regulation, including extensive record-keeping, licensing, storage and security requirements intended to prevent the unauthorized sale of pharmaceutical products.

The full scope and enforcement of each of these laws is uncertain and subject to rapid change in the current environment of healthcare reform. Federal and state enforcement bodies have continued to increase their scrutiny of interactions between healthcare companies and healthcare providers, which has led to a number of investigations, prosecutions, convictions and settlements in the healthcare industry. It is possible that governmental authorities will conclude that our business practices do not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any of these laws or any other related governmental regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, damages, fines, imprisonment, disgorgement, exclusion from government funded healthcare programs, such as Medicare and Medicaid, reputational harm, additional oversight and reporting obligations if we become subject to a corporate integrity agreement or similar settlement to resolve allegations of non-compliance with these laws and the curtailment or restructuring of our operations. If any of the physicians or other healthcare providers or entities with whom we expect to do business is found to be not in compliance with applicable laws, they may be subject to similar actions, penalties and sanctions. Ensuring business arrangements comply with applicable healthcare laws, as well as responding to possible investigations by government authorities, can be time- and resource-consuming and can divert a company's attention from its business.

U.S. Coverage and Reimbursement

The ability of a pharmaceutical manufacturer to successfully commercialize and achieve market acceptance of a product depends in significant part on adequate coverage and reimbursement from third-party payors, including government healthcare programs, such as Medicare and Medicaid programs, and private entities, such as managed care organizations and private health insurers. In the U.S., no uniform policy of coverage and reimbursement for drug products exists among third-party payors. Therefore, coverage and reimbursement for drug products can differ significantly from payor to payor. The process for determining whether a third-party payor will provide coverage for a product may be separate from the process for setting the price or reimbursement rate that the payor will pay for the product once coverage is approved.

Third-party payors are increasingly challenging the prices charged, examining the medical necessity, and reviewing the cost-effectiveness of medical products and services and imposing controls to manage costs. To obtain or maintain coverage and reimbursement for any approved drug product, a pharmaceutical manufacturer may need to conduct expensive pharmacoeconomic studies or otherwise provide evidence to demonstrate the medical necessity and cost-effectiveness of our product. These studies will be in addition to the studies required to obtain or maintain regulatory approvals. If third-party payors do not consider a product to be cost-effective compared to other available therapies, they may not cover the product or, if they do, the level of payment may not be sufficient to allow sale of a product at a profit.

Even if third-party payors provide some coverage, the third-party payors may impose limits on the coverage or controls to manage utilization of products. Third-party payors may limit coverage to specific products on an approved list, or formulary, which might not include all of the approved products for a particular indication and can exclude drugs from their formularies in favor of competitor drugs or alternative treatments. Payors may also impose step edits that require patients to try alternative, including generic, treatments before authorizing payment for our products, limit the types of diagnoses for which coverage will be provided, require pre-approval (known as “prior authorization”) for coverage of a prescription for each patient (to allow the payor to assess medical necessity) or impose a moratorium on coverage for products while the payor makes a coverage decision.

Moreover, a third-party payor’s decision to provide coverage for a product does not mean that an adequate reimbursement rate will be approved. We may be required to provide discounts or rebates to certain purchasers to obtain coverage under federal healthcare programs, or to sell products to government purchasers. A pharmaceutical manufacturer may have to offer discounts or rebates to private third-party payors to obtain favorable coverage. Adequate third-party reimbursement may not be available to enable us to maintain net price levels sufficient to realize an appropriate return on our investment in product development.

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

Healthcare Reform

In the U.S. and some foreign jurisdictions, there have been, and likely will continue to be, a number of legislative and regulatory changes and proposed changes regarding the healthcare system directed at broadening the availability of healthcare, improving the quality of healthcare, and containing or lowering the cost of healthcare. For example, in 2010, the U.S. enacted the ACA, which, among other things, subjected biologic products to potential competition by lower-cost biosimilars; addressed a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted or injected; increased the minimum Medicaid rebates owed by most manufacturers under the Medicaid Drug Rebate Program; extended the Medicaid Drug Rebate Program to utilization of prescriptions of individuals enrolled in Medicaid managed care organizations; subjected manufacturers to new annual fees and taxes for certain branded prescription drugs; created a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 70% point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer’s outpatient drugs to be covered under Medicare Part D. More generally, the ACA expanded health care coverage through Medicaid expansion and the implementation of the “individual mandate” for health insurance coverage.

Beyond the ACA, there have been ongoing health care reform efforts. Drug pricing and payment reform was a focus of the Trump Administration and has been a focus of the Biden Administration. For example, federal legislation enacted in 2021 eliminated the statutory cap on Medicaid drug rebate program rebates (currently set at 100% of a drug's "average manufacturer price") effective January 1, 2024. As another example, the Inflation Reduction Act of 2022 ("IRA") includes a number of changes intended to address rising prescription drug prices in Medicare Parts B and D. These changes, which have varying implementation dates, include caps on Medicare Part D out-of-pocket costs, Medicare Part B and Part D drug price inflation rebates, a new Medicare Part D manufacturer discount drug program (replacing the ACA Medicare Part D coverage gap discount program) and a drug price negotiation program for certain high spend Medicare Part B and D drugs. The focus on health care reform, including reform of drug pricing and payment, has continued in the wake of the IRA. For example, in 2022, subsequent to the enactment of the IRA, the Biden administration released an executive order directing the HHS to report on how the Center for Medicare and Medicaid Innovation (CMMI) could be leveraged to test new models for lowering drug costs for Medicare and Medicaid beneficiaries, which report proposed various models that CMMI is currently developing.

Healthcare reform efforts have been and may continue to be subject to scrutiny and legal challenge. For example, with respect to the ACA, tax reform legislation was enacted that eliminated the tax penalty established for individuals who do not maintain mandated health insurance coverage beginning in 2019 and, in 2021, the U.S. Supreme Court dismissed the latest judicial challenge to the ACA brought by several states without specifically ruling on the constitutionality of the ACA. As another example, revisions to regulations under the federal anti-kickback statute would remove protection for traditional Medicare Part D discounts offered by pharmaceutical manufacturers to pharmacy benefit managers and health plans. Pursuant to court order, the removal was delayed, and subsequent legislation imposed a moratorium on implementation of the rule until January 2032. As another example, the IRA drug price negotiation program has been challenged in litigation filed by various pharmaceutical manufacturers and industry groups.

There have also been efforts by federal and state government officials or legislators to implement measures to regulate prices or payment for pharmaceutical products, including legislation on drug importation. Recently, there has been considerable public and government scrutiny of pharmaceutical pricing and proposals to address the perceived high cost of pharmaceuticals. There have also been recent state legislative efforts to address drug costs, which generally have focused on increasing transparency around drug costs or limiting drug prices.

General legislative cost control measures may also affect reimbursement for our product candidates. The Budget Control Act, as amended, resulted in the imposition of reductions in Medicare (but not Medicaid) payments to providers in 2013 and will remain in effect into 2032 (except May 1, 2020 to March 31, 2022) unless additional Congressional action is taken. Any significant spending reductions affecting Medicare, Medicaid or other publicly funded or subsidized health programs that may be implemented and/or any significant taxes or fees that may be imposed on us could have an adverse impact on our results of operations.

Adoption of new legislation at the federal or state level could affect demand for, or pricing of, any future products if approved for sale. We cannot, however, predict the ultimate content, timing or effect of any federal and state reform efforts. There is no assurance that federal or state health care reform will not adversely affect our future business and financial results.

Outside the U.S., ensuring coverage and adequate payment for a product also involves challenges. Pricing of prescription pharmaceuticals is subject to government control in many countries. Pricing negotiations with government authorities can extend well beyond the receipt of regulatory approval for a product and may require a clinical trial that compares the cost-effectiveness of a product to other available therapies. The conduct of such a clinical trial could be expensive and result in delays in commercialization.

In the European Union (the "EU"), pricing and reimbursement schemes vary widely from country to country. Some countries provide that products may be marketed only after a reimbursement price has been agreed. Some countries may require the completion of additional studies that compare the cost-effectiveness of a particular product candidate to currently available therapies or so-called health technology assessments, in order to obtain reimbursement or pricing approval. For example, the EU provides options for its member states to restrict the range of products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. An EU member state may approve a specific price for a product, or it may instead adopt a system of direct or indirect controls on the profitability of the Company placing the product on the market. Other member states allow companies to fix their own prices for products but monitor and control prescription volumes and issue guidance on prescribing criteria to physicians, having an effect on restricting prescriptions or usage. Recently, many countries in the EU have increased the amount of discounts required on pharmaceuticals and these efforts could continue as countries attempt to manage healthcare expenditures, especially in light of the severe fiscal and debt crises experienced by many countries in the EU. The downward pressure on healthcare costs in general, particularly prescription products, has become intense. As a result, increasingly high barriers are being erected to the entry of new products. Political, economic and regulatory developments may further complicate pricing negotiations, and pricing negotiations may continue after reimbursement has been obtained. Reference pricing used by various EU member states, and parallel trade, i.e., arbitrage between low-priced and high-priced member states, can further reduce prices. There can be no assurance that any country that has price controls or reimbursement limitations for pharmaceutical products will allow favorable reimbursement and pricing arrangements for any products, if approved in those countries.

Compliance with Other Federal and State Laws or Requirements; Changing Legal Requirements

If any products that we may develop are made available in the U.S. to authorized users of the Federal Supply Schedule of the U.S. General Services Administration, additional laws and requirements apply. Products must meet applicable child-resistant packaging requirements under the U.S. Poison Prevention Packaging Act. Manufacturing, labeling, packaging, distribution, sales, promotion, and other activities also are potentially subject to federal and state consumer protection and unfair competition laws, among other requirements to we may be subject.

The distribution of pharmaceutical products is subject to additional requirements and regulations, including extensive record-keeping, licensing, storage, and security requirements intended to prevent the unauthorized sale of pharmaceutical products.

The failure to comply with any of these laws or regulatory requirements subjects firms to possible legal or regulatory action. Depending on the circumstances, failure to meet applicable regulatory requirements can result in criminal prosecution, fines or other penalties, injunctions, exclusion from federal healthcare programs, requests for recall, seizure of products, total or partial suspension of production, denial or withdrawal of product approvals, relabeling or repackaging, or refusal to allow a firm to enter into supply contracts, including government contracts. Any claim or action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. Prohibitions or restrictions on marketing, sales or withdrawal of future products marketed by us could materially affect our business in an adverse way.

Changes in regulations, statutes or the interpretation of existing regulations could impact our business in the future by requiring, for example: (i) changes to our manufacturing arrangements; (ii) additions or modifications to product labeling or packaging; (iii) the recall or discontinuation of our products; or (iv) additional record-keeping requirements. If any such changes were to be imposed, they could adversely affect the operation of our business.

European Drug Development

In addition to regulations in the U.S., our business is subject to a variety of foreign regulations governing clinical trials, marketing, and distribution of our products. Irrespective of whether it concerns an FDA approved or investigational drug, the commencement of clinical trials and the subsequent marketing of a drug product in foreign countries are subject to preliminary approvals from the corresponding regulatory authorities of such countries. For example, the conduct of clinical trials in the European Union is governed by the Clinical Trials Regulation (EU) No 536/2014 and the principles and guidelines on GCP.

Similar to the U.S., the various phases of preclinical and clinical research in the EU are subject to significant regulatory controls. The currently applicable Regulation (EU) No 536/2014 (the "CTR") requires a clinical trial sponsor to obtain approval from the national competent authority ("NCA") of each European Union member state in which the clinical trial is to be conducted. Furthermore, the sponsor can only start a clinical trial at a specific clinical trial site after the local research ethics committee ("REC") has issued a favorable opinion.

Pursuant to the CTR, a sponsor can submit a single application for a clinical trial authorization (“CTA”) through a centralized EU clinical trials portal called the Clinical Trials Information System (“CTIS”). One NCA (the reporting EU member state selected by the sponsor) takes the lead in validating and evaluating the application, as well as consulting and coordinating with the other concerned member states in which the clinical trial is to be conducted. If an application is rejected, it may be amended and resubmitted through CTIS. A concerned member state may in limited circumstances declare an “opt-out” from an approval and prevent the clinical trial from being conducted in that member state.

The CTR foresees a three-year transition period: from January 31, 2023, the submission of initial CTA applications for a new clinical trial under the CTR via CTIS became mandatory, and by January 31, 2025, all ongoing clinical trials approved under the old regime must comply with the CTR and information relating to such clinical trials must be transitioned to CTIS. All suspected unexpected serious adverse reactions to the investigated drug that occurred during the clinical trial must be reported to the NCA and ECs of the EU member state where they occurred.

In the UK, clinical trials of medicinal products for human use are primarily governed by the Medicines for Human Use (Clinical Trials) Regulations 2004 (as amended). Similar to the EU, before a clinical trial can be initiated in the UK, a CTA must be obtained from the Medicines and Healthcare products Regulatory Agency (“MHRA”), as well as a positive opinion from a REC.

European Drug Marketing

Much like the Anti-Kickback Statute prohibition in the U.S., the provision of benefits or advantages to physicians to induce or encourage the prescription, recommendation, endorsement, purchase, supply, order or use of medicinal products is also prohibited in the EU. The provision of benefits or advantages to induce or reward improper performance generally is governed by the national anti-bribery laws of EU member states, and the Bribery Act 2010 in the UK infringement of these laws could result in substantial fines and imprisonment. EU Directive 2001/83/EC, which governs medicinal products for human use, further provides that, where medicinal products are being promoted to persons qualified to prescribe or supply them, no gifts, pecuniary advantages or benefits in kind may be supplied, offered or promised to such persons unless they are inexpensive and relevant to the practice of medicine or pharmacy. This provision is reflected in the UK Human Medicines Regulations 2012.

In the EU and UK, the statutory regimes applicable to the advertising of medicinal products are supplemented by self-regulatory regimes set out in the relevant country’s industry code of practice; these codes of practice are developed by domestic trade organizations and are only binding on companies which are members of the relevant trade organization. However, since they represent the best practice, many non-members choose to abide by these codes of practices as well. These codes of practice require payments made to physicians to be publicly disclosed. In addition, as a matter of law, payments made to physicians in certain EU member states, such as France, must be publicly disclosed. Moreover, agreements with physicians often must be the subject of prior notification and approval by the physician’s employer, his or her competent professional organization and/or the regulatory authorities of the individual EU member states. Failure to comply with these requirements could result in reputational risk, public reprimands, administrative penalties, fines or imprisonment.

European Drug Review and Approval

In the European Economic Area (the “EEA”), which is comprised of the member states of the EU together with Norway, Iceland and Liechtenstein, medicinal products can only be commercialized after obtaining a marketing authorization (“MA”).

In order to obtain a marketing authorization for a medicinal product in the EU, an applicant is required to submit a marketing authorization application (“MAA”) to either (a) the national competent authorities (albeit through the decentralized, mutual recognition, or national procedures) or (b) the EMA (through the centralized authorization procedure). Applicants are required to demonstrate the quality, safety and efficacy of the medicinal product in the application for marketing authorization. In order to support the benefit/risk assessment, an applicant is required to conduct human clinical trials to generate the necessary clinical data. Regulation (EC) No 726/2004 of the European Parliament and of the Council lays down the rules applicable to the centralized procedure for the authorization of medicinal products. Article 3 of Regulation (EC) No 726/2004 defines in which cases the centralized application procedure must (mandatory scope) or may (optional scope) be followed. The centralized procedure is mandatory for medicinal products derived from biotechnological and other high-tech processes, orphan medicinal products, advanced therapy medicinal products and products indicated for the treatment of HIV/AIDS, cancer, diabetes, auto-immune and other immune dysfunctions, viral diseases, and neurodegenerative diseases. For medicinal products that do not fall under any of the aforementioned categories, a submission via the centralized procedure is possible, provided that it concerns (i) a new active substance or (ii) product that can demonstrate a significant therapeutic, scientific, or technical innovation and for which approval would be in the interest of public health. Given the foregoing, our portfolio of innovative orphan products for neurodegenerative diseases is subject to the mandatory centralized procedure.

The centralized procedure allows pharmaceutical companies to submit a single application to the EMA, which is followed by a single evaluation, resulting in a single approval to market the medicinal product throughout the EEA. Approval via the centralized procedure is a two-step process whereby the Committee for Medicinal Products for Human Use (the "CHMP") first evaluates the MAA and issues an opinion on whether the medicinal product may be authorized or not (step 1). The CHMP opinion is subsequently sent to the EC, which takes a legally binding decision to grant a marketing authorization (step 2). The marketing authorization is valid throughout the EU and is automatically recognized in the EEA states. This allows the marketing authorization holder to market the medicine and make it available throughout the EEA. The timeframe for the first step of the centralized procedure (evaluation by the CHMP) opinion is 210 days from receipt of a valid application. However, the actual time needed to complete this first step is generally longer than the 210 days, since procedural clock stops are required in order for the applicant to respond to additional requests for information by the CHMP. Following a positive CHMP opinion, the EC ordinarily issues its implementing decision within 67 days to grant the marketing authorization. National MAs, which are issued by the NCAs of the EEA member states and only cover their respective territory, are available for products not falling within the mandatory scope of the centralized procedure. Where a product has already been authorized for marketing in a member state of the EEA, this national MA can be recognized in other EEA member states through the mutual recognition procedure. If the product has not received a national MA in any EEA member state at the time of application, it can be approved simultaneously in various EEA member states through the decentralized procedure.

Under the procedures described above, before granting the MA, the EMA or the NCAs of the EEA member states assess of the risk-benefit balance of the product on the basis of scientific criteria concerning its quality, safety and efficacy. Now that the UK (which comprises Great Britain and Northern Ireland) has left the EU, Great Britain will no longer be covered by centralized MAs (under the Northern Ireland Protocol, centralized MAs will continue to be recognized in Northern Ireland).

Accelerated evaluation of the MAA under the centralized procedure is possible in exceptional cases, following a justified request from the applicant, when a medicinal product is of a major public health interest, particularly from the point of view of therapeutic innovation. The CHMP determines what constitutes a major public interest on a case-by-case basis. Justifications must include the major benefits expected and present the arguments to support the claim that the medicinal product introduces new methods of therapy or improves on existing methods, thereby addressing, to a significant extent, the greater unmet needs for maintaining and improving public health. If the applicant provides sufficient justification for an accelerated assessment, the CHMP can reduce the timeframe for review of a MAA to 150 days. The timeframe for the EC to issue its decision remains unaltered.

Similar to the U.S., marketing authorization holders and manufacturers of medicinal products are subject to comprehensive regulatory oversight by the EMA and/or the national competent authorities of the EU member states. This oversight applies both before and after the granting of manufacturing and marketing authorizations. It includes compliance with EU GMP and GDP rules in relation to such activities as distribution, importing and exporting of medicinal products, rules governing conduct of pharmacovigilance (including good pharmacovigilance practices ("GVP")) and requirements governing advertising, promotion and sale of medicinal products.

Regulatory approval processes outside of the U.S. and EU vary from country to country and the time may be longer or shorter than timelines for approval outlined above. In addition, the requirements governing the conduct of clinical trials, product licensing, pricing and reimbursement for market access vary greatly from country to country. In all cases, clinical trials are to be conducted in accordance with GCP, applicable regulatory requirements, and the ethical principles that have their origin in the Declaration of Helsinki.

In relation to the UK, until the end of 2024, under the Northern Ireland Protocol which is contained in the Agreement on the withdrawal of the United Kingdom of Great Britain and Northern Ireland from the European Union and the European Atomic Energy Community, centralized MAs continue to provide a valid basis for commercializing medicinal products in Northern Ireland. However, centralized MAs no longer provide a valid basis for the commercialization of medicinal products in Great Britain. Pursuant to the Windsor Framework, from January 1, 2025, all new medicinal products for the UK market will be authorized by the MHRA. In this regard, the MHRA will grant a single UK-wide MA for all medicinal products intended for sale in the UK, enabling medicinal products to be sold in a single pack and under a single authorization throughout the UK.

Since leaving the EU, the MHRA has introduced changes to national licensing procedures, including procedures to prioritize access to new medicines that will benefit patients, an accelerated assessment procedure, and new routes of evaluation for novel products and biotechnological products. Notwithstanding that there is no wholesale recognition of EU pharmaceutical legislation between the jurisdictions, and that EU MAs do not automatically provide a valid basis for the commercialization of medicinal products in Great Britain. From January 1, 2024, sponsors will be able to request the MHRA to recognize MAs granted by acceptable Reference Regulators in foreign jurisdictions (including the EU) under a new International Recognition Procedure.

European Data and Marketing Exclusivity

In the EEA, innovative medicinal products (including both small molecules and biological medicinal products) approved on the basis of a complete independent data package consisting of quality, preclinical testing results, and clinical trial data benefit from eight years of data exclusivity upon grant of an MA and an additional two years of market exclusivity. The data exclusivity prevents generic or biosimilar applicants from cross-referencing the innovator's preclinical and clinical trial data contained in the dossier of the reference medicinal product when applying for a generic or biosimilar MA until the data exclusivity period has expired. During the additional two-year period of market exclusivity, a generic or biosimilar MA can be submitted, and the innovator's pre-clinical and clinical data can be cross-referenced, but no generic or biosimilar product can be marketed until the expiration of the market exclusivity period. 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 MA holder obtains an authorization for one or more new therapeutic indications which, during the scientific evaluation prior to their authorization, are determined to bring a significant clinical benefit in comparison with currently approved therapies. The UK domestic law follows the same formula of regulatory data and market exclusivity.

European Orphan Designation and Exclusivity

Regulation (EC) No 141/2000 provides that a product can be designated as an orphan medicinal product by the European Commission, upon satisfactory scientific assessment by the EMA's Committee for Orphan Medicinal Products ("COMP"), if the sponsor can establish: that the product is intended for the diagnosis, prevention or treatment of a life-threatening or chronically debilitating condition which either affects not more than five in 10,000 persons in the EU, or where it is unlikely that the development of the medicine would generate sufficient return to justify the necessary investment in its development. In each case, no satisfactory method of diagnosis, prevention or treatment must have been authorized (or, if such a method exists, the product in question would be of significant benefit to those affected by the condition). In the UK, the MHRA conducts an equivalent assessment, against criteria which have been tailored for the UK population.

In the EEA, orphan drug designation must be requested before submitting an application for MA. The COMP is required to re-assess the granted orphan designation at the time of MA grant to ensure that it continues to meet the criteria for the designation to be maintained. Otherwise, the orphan designation can be revoked. In relation to the UK, the MHRA does not grant orphan designations during the development of the medicinal product. Instead, the MHRA will decide whether the criteria are satisfied at the point of grant of an MA.

In the EEA and the UK, orphan drug designation/status (as applicable) entitles a party to financial incentives such as reduction of fees or fee waivers and ten years of market exclusivity following MA grant for the orphan product. This period may be reduced to six years if, at the end of the fifth year, it is established that the orphan drug designation criteria are no longer met, including where it is shown that the product is sufficiently profitable not to justify maintenance of market exclusivity. During the period of market exclusivity, MA may only be granted to a "similar medicinal product" for the same therapeutic indication if: (i) a second applicant can establish that its product, although similar to the authorized product, is safer, more effective or otherwise clinically superior; (ii) the MA holder for the authorized product consents to a second orphan medicinal product application; or (iii) the MA holder for the authorized product cannot supply enough orphan medicinal product. A "similar medicinal product" is defined as a medicinal product containing a similar active substance or substances as contained in an authorized orphan medicinal product, and which is intended for the same therapeutic indication. Orphan drug designation does not convey any advantage in, or shorten the duration of, the regulatory review and approval process.

European Pediatric Investigation Plan

In the EEA, companies developing a new medicinal product must agree upon a pediatric investigation plan ("PIP"), with the EMA's Pediatric Committee (the "PDCO") and must conduct pediatric clinical trials in accordance with that PIP, unless a waiver applies. The PIP sets out the timing and measures proposed to generate data to support a pediatric indication of the drug for which MA is being sought. The PDCO can grant a deferral of the obligation to implement some or all of the measures of the PIP until there are sufficient data to demonstrate the efficacy and safety of the product in adults. Further, the obligation to provide pediatric clinical trial data can be waived by the PDCO when this data is not needed or appropriate because the product is likely to be ineffective or unsafe in children, the disease or condition for which the product is intended occurs only in adult populations, or when the product does not represent a significant therapeutic benefit over existing treatments for pediatric patients. Products that are granted a MA with the results of the pediatric clinical trials conducted in accordance with the PIP (even where such results are negative) are eligible for six months' supplementary protection certificate extension (if any is in effect at the time of approval). In the case of orphan medicinal products, a two-year extension of the orphan market exclusivity may be available. This pediatric reward is subject to specific conditions and is not automatically available when data in compliance with the PIP are developed and submitted.

The UK domestic law follows the same formula for the incentivization of the development of medicinal products for the pediatric population, which is overseen by the MHRA.

Brexit and the Regulatory Framework in the United Kingdom

In June 2016, the electorate in the UK voted in favor of leaving the EU (commonly referred to as “Brexit”). Thereafter, in March 2017, the country formally notified the EU of its intention to withdraw pursuant to Article 50 of the Lisbon Treaty, and the UK formally left the EU on January 31, 2020. A transition period began on February 1, 2020, during which EU pharmaceutical legislation remained applicable to the UK. When the transition period expired on December 31, 2020, the UK became a “third country” for the purposes of EU law. Since the UK had already implemented the EU pharmaceutical legislation into its domestic legislation through the Human Medicines Regulations 2012 (as amended), immediate changes were made to this legislation to reflect the UK’s new status. Article 5(4) of Annex 2 to the Northern Ireland Protocol contained in the Agreement on the withdrawal of the United Kingdom of Great Britain and Northern Ireland from the European Union and the European Atomic Energy Community requires certain aspects of EU pharmaceutical law to be applied in Northern Ireland following the UK’s withdrawal from the EU. As mentioned above, from January 1, 2025, the Windsor Protocol will operate to disapply EU pharmaceutical law in Northern Ireland.

On May 1, 2021, the EU and UK trade and cooperation agreement (“TCA”) entered into application. The TCA includes specific provisions concerning pharmaceuticals, which include the mutual recognition of the outcomes of GMP inspections. Applicants and MA holders may submit GMP certificates issued by the MHRA for sites located outside the EU/EEA as supporting information for EU regulatory submissions. However, the TCA does not foresee wholesale mutual recognition of UK and EU pharmaceutical regulations. The regulatory regime in Great Britain currently broadly aligns with EU regulations. However, it is possible that these regimes may diverge in the future, especially in light of the European Commission’s proposals for the entire overhaul of the pharmaceutical regulatory regime.

European Data Collection

The collection and use of personal health data in the EEA is governed by the General Data Protection Regulation (the “GDPR”), which became effective May 25, 2018. The GDPR applies to any company established in the EEA and to companies established outside the EEA that process personal data in connection with the offering of goods or services to data subjects in the EU or the monitoring of the behavior of data subjects in the EU. The GDPR enhances data protection obligations for data controllers of personal data, including stringent requirements relating to the consent of data subjects, expanded disclosures about how personal data is used, requirements to conduct privacy impact assessments for “high risk” processing, limitations on retention of personal data, special provisions for “sensitive information” including health and genetic information of data subjects, mandatory data breach notification and “privacy by design” requirements, and direct obligations on service providers acting as data processors. The GDPR also imposes strict rules on the transfer of personal data outside of the EEA to countries that do not ensure an adequate level of protection, like the U.S. Failure to comply with the requirements of the GDPR and the related national data protection laws of the EEA member states may result in fines up to 20 million euros or 4% of a company’s global annual revenues for the preceding financial year, whichever is higher. Moreover, the GDPR grants data subjects the right to request deletion of personal information in certain circumstances and to claim material and non-material damages resulting from infringement of the GDPR. Given the breadth and depth of changes in data protection obligations, maintaining compliance with the GDPR will require significant time, resources and expense, and we may be required to put in place additional mechanisms ensuring compliance with the new data protection rules. This may be onerous and adversely affect our business, financial condition, results of operations, and prospects.

Human Capital Resources

As of December 31, 2023, we had 85 full-time employees. 27 of our employees have M.D. or Ph.D. degrees. Within our workforce, 53 employees are engaged in research and development and 32 are engaged in business development, finance, legal, and general management and administration. Four of the nine members of our management executive team are women. Across our broader population, approximately 65% of full-time employees are women. Our management executive team places significant focus and attention on matters concerning our human capital assets - particularly the diversity of our workforce and their capability development.

Our office space is in Greater Boston, which we believe provides access to a vibrant biotech and pharmaceutical talent pool. We believe that employee compensation should be both competitive and equitable. We have programs in place to attract and retain talent, including stock-based compensation and cash performance awards. We also have a performance management and talent development process in which managers provide regular feedback and coaching to develop employees. We believe that open and honest communication among team members, managers, and leadership fosters a work environment where everyone can participate, develop, and thrive. None of our employees are represented by labor unions or covered by collective bargaining agreements. We consider our relationship with our employees to be good.

Corporate Information

We were incorporated under the laws of the State of Delaware in September 2016. Our principal executive offices are located at One Main Street, Suite 1350, Cambridge, MA 02142 and our telephone number is (617) 410-4650.

We use various trademarks and trade names in our business, including, without limitation, our corporate name and logo. All other trademarks or trade names referred to in this Annual Report on Form 10-K are the property of their respective owners. Solely for convenience, the trademarks and trade names in this Annual Report on Form 10-K may be referred to without the ® and ™ symbols, but such references should not be construed as any indicator that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto. We do not intend our use or display of other companies' trademarks and trade names to imply a relationship with, or endorsement or sponsorship of us by, any other companies.

We are an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012. We will remain an emerging growth company until the earlier of: (i) the last day of the fiscal year (a) following the fifth anniversary of the completion of the IPO, (b) in which we have total annual gross revenue of at least \$1.235 billion, or (c) in which we are deemed to be a large accelerated filer, which means the market value of our common stock that is held by non-affiliates exceeds \$700 million as of the prior June 30th, and (ii) the date on which we have issued more than \$1 billion in non-convertible debt during the prior three-year period.

Available Information

Our corporate website address is <https://www.cullinanoncology.com>. Information contained on or accessible through our website is not a part of this Annual Report on Form 10-K, and the inclusion of our website address in this Annual Report on Form 10-K is as an inactive textual reference only.

Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, including exhibits, proxy and information statements and amendments to those reports filed or furnished pursuant to Sections 13(a), 14, and 15(d) of the Securities Exchange Act of 1934 (as amended, the "Exchange Act"), are available through the "Investors" portion of our website free of charge as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. Information on our website is not part of this Annual Report on Form 10-K or any of our other securities filings unless specifically incorporated herein by reference. In addition, our filings with the SEC may be accessed through the SEC's Electronic Data Gathering, Analysis and Retrieval system at <https://www.sec.gov>. All statements made in any of our securities filings, including all forward-looking statements or information, are made as of the date of the document in which the statement is included, and we do not assume or undertake any obligation to update any of those statements or documents unless we are required to do so by law.

Item 1A. Risk Factors.

The following information should be read in conjunction with the other information in this Annual Report on Form 10-K, including our consolidated financial statements and related notes appearing elsewhere in this Annual Report on Form 10-K. The occurrence of any of the events or developments described below could harm our business, financial condition or future results, and such risk factors may not be the only risks we face. Additional risks and uncertainties not presently known to us or that we currently believe to be immaterial also may adversely affect our business, financial condition or future results. See “Special Note Regarding Forward-Looking Statements” in this Annual Report on Form 10-K.

Risks Related to the Development of Our Product Candidates

Our preclinical studies and clinical trials may fail to demonstrate adequately the safety and efficacy of any of our product candidates, which would prevent or delay development, regulatory approval, and commercialization.

Before obtaining regulatory approvals for the commercial sale of our current and future product candidates, we must demonstrate the safety and efficacy of our investigational product candidates for use in each target indication through lengthy, complex, and expensive preclinical studies and clinical trials. If the results of our ongoing or future preclinical studies and clinical trials are inconclusive with respect to the safety and efficacy of our product candidates, if we do not meet the clinical endpoints with statistical and clinically meaningful significance, or if there are safety concerns associated with our product candidates, we may be prevented or delayed in obtaining marketing approval for such product candidates. In some instances, there can be significant variability in safety or efficacy results between different preclinical studies and clinical trials of the same product candidate due to numerous factors, including changes in and adherence to clinical trial procedures set forth in protocols, differences in the size and type of the patient populations, and the rate of dropout among clinical trial participants.

In addition to our ongoing clinical trials of zipalertinib, patients have been, and will likely continue to be, treated with zipalertinib under an expanded access or “compassionate use” program. To the extent the experiences of patients being treated in this program are inconsistent with or less favorable than the results of our ongoing or planned company-sponsored clinical trials with zipalertinib, it may negatively affect perceptions of zipalertinib, our other product candidates, or our business. In addition, the United States (“U.S.”) Food and Drug Administration (the “FDA”), or foreign regulatory authorities may require us to obtain and submit additional clinical data due to these inconsistent or unfavorable results, which could delay clinical development or marketing approval of zipalertinib or potentially our other product candidates.

Our approach to the identification, discovery, and development of targeted oncology product candidates may never lead to marketable products.

The scientific evidence to support the feasibility of developing product candidates based on our discoveries to date is both preliminary and limited. The patient populations for certain of our product candidates are limited to those with specific target mutations, and we will need to screen and identify these patients with the targeted mutations. Successful identification of patients is dependent on several factors, including achieving certainty as to how specific genetic alterations and larger classes of mutations, such as epidermal growth factor receptor (“EGFR”) exon 20 insertion mutations, respond to our product candidates, and developing companion diagnostics to identify such genetic alterations. Furthermore, even if we are successful in identifying patients, we cannot be certain that the resulting patient populations for each mutation or class of mutations will be large enough to allow us to successfully obtain indications for each mutation type and to commercialize our products and achieve profitability. The FDA and other regulatory authorities may not agree with our approach to seek labeling for groups of related mutations, rather than individual mutations, and may require us to conduct additional clinical trials and obtain separate approvals for each individual mutation, which may further affect our ability to successfully commercialize our products, if approved. In addition, even if our approach is successful in showing clinical benefit for tumors harboring certain targeted mutations, we may never successfully identify additional oncogenic mutations. Therefore, we do not know if our approach of treating patients with targeted oncology therapies will be successful, and if our approach is unsuccessful, our business will suffer.

Preclinical and clinical development involves a lengthy and expensive process with an uncertain outcome, and results of earlier studies and trials may not be predictive of future preclinical studies or clinical trial results. If our preclinical studies and clinical trials are not sufficient to support regulatory approval of any of our product candidates, we may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development of such product candidate.

Our preclinical studies and future clinical trials may not be successful. It is impossible to predict when or if any of our product candidates will prove effective and safe in humans or will receive regulatory approval. Before obtaining marketing approval from regulatory authorities for the sale of any product candidate, we must complete preclinical studies and then conduct extensive clinical trials to demonstrate the safety and efficacy of our product candidates in humans. A failure of one or more clinical trials can occur at any stage of testing. The outcome of preclinical development testing and early clinical trials may not be predictive of the success of later clinical trials, and interim results of a clinical trial do not necessarily predict final results. A number of companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in later stage clinical trials even after achieving promising results in earlier stage clinical trials. Moreover, preclinical and clinical data are often susceptible to varying interpretations and analyses, and many companies that have believed their product candidates performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain marketing approval of their product candidates.

Additionally, some of the clinical trials we conduct are and in the future may be open-label in trial design and may be conducted at a limited number of clinical sites on a limited number of patients. An “open-label” clinical trial is one where both the patient and investigator know whether the patient is receiving the investigational product candidate or either an existing approved drug or placebo. Most typically, open-label clinical trials test only the investigational product candidate and sometimes may do so at different dose levels. Open-label clinical trials are subject to various limitations that may exaggerate any therapeutic effect, as patients in open-label clinical trials are aware when they are receiving treatment. Open-label clinical trials may be subject to a “patient bias” where patients perceive their symptoms to have improved merely due to their awareness of receiving an experimental treatment. Moreover, patients selected for early clinical studies often include the most severe sufferers and their symptoms may have been bound to improve notwithstanding the new treatment. In addition, open-label clinical trials may be subject to an “investigator bias” where those assessing and reviewing the physiological outcomes of the clinical trials are aware of which patients have received treatment and may interpret the information of the treated group more favorably given this knowledge. Because some of our clinical trials are open-label in clinical trial design, the results from these clinical trials may not be predictive of future clinical trial results with this or other product candidates for which we conduct an open-label clinical trial when studied in a controlled environment with a placebo or active control.

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

If a sufficient number of our product candidates generally prove to be ineffective, unsafe or commercially unviable, our entire pipeline may have little, if any, value, which would have a material and adverse effect on our business, financial condition, results of operations and prospects.

We may encounter substantial delays in preclinical and clinical trials or may not be able to conduct or complete preclinical or clinical trials on the expected timelines, if at all.

We may experience delays in initiating or completing preclinical studies or clinical trials, including as a result of delays in obtaining, or failure to obtain, the FDA’s clearance to initiate clinical trials under future investigational new drug applications (“INDs”). Additionally, we cannot be certain that preclinical studies or clinical trials for our product candidates will not require redesign, enroll an adequate number of subjects on time, or be completed on schedule, if at all. We may experience numerous adverse or unforeseen events during, or as a result of, preclinical studies and clinical trials that could delay or terminate our clinical trials, or delay or prevent our ability to receive marketing approval or commercialize our product candidates, including:

- we may receive feedback from regulatory authorities that requires us to modify the design or implementation of our preclinical studies or clinical trials, including our ability to commence a clinical trial;

- we may fail or be delayed in reaching agreement on acceptable terms with prospective contract research organizations (“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;
- we may be unable to add or be delayed in adding a sufficient number of clinical trial sites and obtaining institutional review board (“IRB”), or REC approval at each clinical trial site;
- preclinical studies or clinical trials of our product candidates may fail to show safety or efficacy or otherwise produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional preclinical studies or clinical trials or abandon our research efforts for our other product candidates;
- preclinical studies or clinical trials of our product candidates may not produce differentiated or clinically significant results across tumor types or indications;
- the number of patients required for clinical trials of our product candidates may be larger than we anticipate, enrollment in these clinical trials may be slower than we anticipate or participants may drop out of our clinical trials or fail to return for post-treatment follow-up at a higher rate than we anticipate;
- our third-party contractors may fail to comply with regulatory requirements, fail to maintain adequate quality controls or be unable to provide us with sufficient product supply to conduct and complete preclinical studies or clinical trials of our product candidates in a timely manner, or at all;
- we or our investigators might have to suspend or terminate clinical trials of our product candidates for various reasons, including non-compliance with regulatory requirements, a finding that our product candidates have undesirable side effects or other unexpected characteristics or a finding that the participants are being exposed to unacceptable health risks;
- the cost of clinical trials of our product candidates may be greater than we anticipate, for example, if we experience delays or challenges in identifying patients with the mutations required for our clinical trials, we may have to reimburse sites for genetic sequencing costs in order to encourage sequencing of additional patients;
- clinical trial sites may deviate from the clinical trial protocol or drop out of a clinical trial;
- we may be unable to obtain or be delayed in obtaining sufficient product supply of a product candidate for use in preclinical studies or clinical trials from third-party suppliers;
- the quality of our product candidates or other materials necessary to conduct preclinical studies or clinical trials of our product candidates may be insufficient or inadequate, and any transfer of manufacturing activities may require unforeseen manufacturing or formulation changes;
- reports from clinical testing of other therapies may raise safety or efficacy concerns about our product candidates;
- regulators may revise the requirements for approving our product candidates, or such requirements may not be as we anticipate; and
- collaborators may conduct clinical trials in ways they view as advantageous to them but that are suboptimal for us.

If we are required to conduct additional preclinical studies or clinical trials or other testing of our product candidates beyond those that we currently contemplate, if we are unable to successfully complete clinical trials of our product candidates or other testing, if the results of these studies, trials or tests are not positive or are only moderately positive or if there are safety concerns, our business and results of operations may be adversely affected and we may incur significant additional costs.

We could also encounter delays if a clinical trial is suspended or terminated by us, by the IRBs, or RECs of the institutions in which such clinical trials are being conducted, by the data safety monitoring board, if any, for such clinical trial or by the FDA or other regulatory authorities. Such authorities may suspend, place on clinical hold, or terminate a clinical trial due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or our clinical trial protocols, inspection of the clinical trial operations or trial site by the FDA or other regulatory authorities, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from the product candidates, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical trial.

We are early in our development efforts and are substantially dependent on our lead product candidates. If we are unable to advance these or any of our other current and future product candidates through clinical development, or to obtain regulatory approval and ultimately commercialize any such product candidates, either by ourselves or with or by third parties or if we experience significant delays in doing so, our business may be materially harmed.

We are early in our development efforts. Our lead unpartnered product candidate, CLN-619, is in a Phase 1 clinical trial. In collaboration with our partners at Taiho, we are evaluating zipalertinib in a pivotal Phase 2b clinical trial in patients with EGFRex20 non-small-cell lung cancer who progressed after prior systemic therapy, and in a global Phase 3 clinical trial in combination with chemotherapy as a potential first-line treatment for EGFRex20 NSCLC adult patients. Additionally, our product candidates CLN-978, CLN-049, CLN-418, and CLN-617, are each in Phase 1 clinical trials. Our ability to generate product revenues, which we do not expect will occur for many years, if ever, will depend heavily on the successful clinical development and eventual commercialization of our current and future product candidates, if approved. The success of our current and future product candidates will depend on several factors, including the following:

- sufficiency of our financial and other resources to complete the necessary preclinical studies and clinical trials;
- successful completion of preclinical studies;
- regulator acceptance of and maintenance of INDs, clinical trial authorizations (“CTAs”), or comparable foreign applications that allow commencement and continuation of our planned clinical trials or future clinical trials;
- successful initiation of clinical trials;
- successful patient enrollment in and completion of clinical trials;
- positive results from our preclinical data and clinical trials that support a demonstration of safety and effectiveness and an acceptable risk-benefit profile for our product candidates that are satisfactory to the FDA or any foreign regulatory authority for marketing approval in the intended population;
- receipt of marketing approvals for our product candidates and any companion diagnostics from applicable regulatory authorities;
- the extent of any required post-marketing approval commitments to applicable regulatory authorities;
- obtaining and maintaining patent and trade secret protection and regulatory exclusivity for our product candidates;
- making arrangements with third-party manufacturers, or establishing manufacturing capabilities, for both clinical and commercial supplies of our product candidates, if any product candidates are approved;
- establishing sales, marketing, and distribution capabilities and launching commercial sales of our products, if and when approved, whether alone or in collaboration with others;
- acceptance of our products, if and when approved, by patients, the medical community and third-party payors;
- effectively competing with other cancer therapies;
- obtaining and maintaining third-party coverage and adequate pricing and reimbursement decisions; and
- maintaining a continued acceptable safety, tolerability, and efficacy profile of our products following approval.

If we do not succeed in one or more of these factors in a timely manner or at all, we could experience significant delays in our ability to successfully commercialize our current and future product candidates or be unable to commercialize product candidates at all. If we are unable to advance our preclinical-stage product candidates to clinical development, successfully complete clinical trials for our current and future product candidates, obtain regulatory approval, and ultimately commercialize our current and future product candidates, our business may be materially harmed.

There is no guarantee that the results obtained in current preclinical studies or our ongoing clinical trials of our current and future product candidates will be sufficient to obtain regulatory approval or marketing authorization for such product candidates. For example, the FDA may require us to complete clinical trials in addition to our ongoing pivotal Phase 2b clinical trial and global Phase 3 clinical trial for zipalertinib in collaboration with our partners at Taiho prior to granting regulatory approval. Although we believe our product candidates and programs are uncorrelated, negative results in the development process of one product candidate could impact other product candidates or programs. For each of our product candidates, antitumor activity may be different in each of the different tumor types we plan on evaluating in our clinical trials. Even as we build clinical experience with our product candidates, we may need to further discuss or meet with the FDA to agree on the optimal patient population, clinical trial design, and size for each clinical trial in order to obtain regulatory approval, any of which may require significant additional resources and delay the timing of our clinical trials and ultimately the approval, if any, of any of our product candidates.

Difficulty in enrolling patients could delay or prevent clinical trials of our product candidates, and ultimately delay or prevent regulatory approval.

Identifying and qualifying patients to participate in clinical trials of our product candidates is critical to our success. The timing of completion of our clinical trials depends in part on the speed at which we can recruit patients to participate in testing our product candidates, and we may experience delays in our clinical trials if we encounter difficulties in enrollment. We may not be able to initiate or continue clinical trials for our product candidates if we are unable to locate and enroll enough eligible patients to participate in these clinical trials as required by the FDA or similar regulatory authorities outside the U.S., or as needed to provide appropriate statistical power for a given clinical trial. For example, because we are focused on patients with specific genetic mutations for the development of zipalertinib, our ability to enroll eligible patients may be limited or enrollment may be slower than we anticipate due to the small eligible patient population.

In addition to the potentially small populations, the eligibility criteria of our planned clinical trials will further limit the pool of available clinical trial participants as we require that patients have specific characteristics, such as a certain severity or stage of disease progression, to include them in a clinical trial. Additionally, the process of finding eligible patients may prove costly. We also may not be able to identify, recruit, and enroll a sufficient number of patients to complete our clinical studies because of the perceived risks and benefits of the product candidate under clinical trial, the availability and efficacy of competing therapies and clinical trials, the proximity and availability of clinical trial sites for prospective patients, the availability of genetic sequencing information for patient tumors so that we can identify patients with the targeted genetic mutations, and the patient referral practices of physicians. If patients are unwilling to participate in our studies for any reason, the timeline for recruiting patients, conducting studies, and obtaining regulatory approval of potential products may be delayed.

The enrollment of patients further depends on many factors, including:

- the proximity of patients to clinical trial sites;
- the design of the clinical trial;
- our ability to recruit clinical trial investigators with the appropriate competencies and experience;
- our ability to obtain and maintain patient consents;
- our ability to enroll a diverse patient base in our clinical trials to meet FDA recommended guidance;
- reporting of the preliminary results of any of our clinical trials;
- the risk that patients enrolled in clinical trials will drop out of the clinical trials before clinical trial completion; and
- factors we may not be able to control, such as current or potential pandemics that may limit patients, principal investigators or staff or clinical site availability (e.g., the COVID-19 pandemic).

In addition, our clinical trials will compete with other clinical trials for product candidates that are in the same therapeutic areas as our product 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 clinical trials may instead opt to enroll in a clinical 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. Moreover, because certain of our product candidates represent a departure from more commonly used methods for cancer treatment and because certain of our product candidates have not been tested in humans before, potential patients and their doctors may be inclined to use conventional therapies, such as chemotherapy, rather than enroll patients in any future clinical trial of our product candidates.

If we experience delays in the completion of, or termination of, any clinical trial of our product candidates, the commercial prospects of our product candidates will be harmed, and our ability to generate product revenue from any of these product candidates could be delayed or prevented.

Interim, “topline”, and preliminary data from our clinical trials that we announce or publish may change as more patient data become available and are subject to confirmation, audit, and verification procedures that could result in material changes in the final data.

From time to time, we may publicly disclose preliminary or topline data from our preclinical studies and clinical trials, which is based on a preliminary analysis of then-available data, and the results and related findings and conclusions are subject to change following a more comprehensive review of the data related to the particular study or trial. We also make assumptions, estimations, calculations, and conclusions as part of our analyses of data, and we may not have received or had the opportunity to fully and carefully evaluate all data. As a result, the topline or preliminary results that we report may differ from future results of the same studies, or different conclusions or considerations may qualify such results, once additional data have been received and fully evaluated. Topline data also remain subject to audit and verification procedures that may result in the final data being materially different from the preliminary data we previously published. From time to time, we may also disclose interim data from our clinical trials. Interim data from clinical trials are subject to the risk that one or more of the clinical outcomes may materially change as patient enrollment and treatment continues and more patient data become available or as patients from our clinical trials continue other treatments for their disease. Adverse differences between preliminary or interim data and final data could significantly harm our business prospects and our ability to obtain approval for, and commercialize, our product candidates may be harmed. Further, disclosure of interim data by us or by our competitors could result in volatility in the price of our common stock.

We may not be able to file INDs or IND amendments to commence additional clinical trials on the timelines we expect, and even if we are able to, the FDA or foreign regulatory authorities may not permit us to proceed.

Each of our product candidates have INDs which are currently in effect. However, we may not be able to file future INDs for our other product candidates on the timelines we expect. Additionally, we may experience manufacturing delays or other delays with IND-enabling studies, or the FDA or other regulatory authorities may require additional preclinical studies that we did not anticipate. Moreover, we cannot be sure that submission of an IND will result in the FDA allowing clinical trials to begin, or that, once begun, issues will not arise that result in a decision by us, by IRBs or independent ethics committees, or by the FDA or other regulatory authorities to suspend or terminate clinical trials, including as a result of a clinical hold. Additionally, even if the FDA or other regulatory authorities agree with the design and implementation of the clinical trials set forth in an IND, we cannot guarantee that they will not change their requirements or expectations in the future. These considerations also apply to new clinical trials we may submit as amendments to existing INDs or to a new IND. Any failure to file INDs on the timelines we expect or to obtain regulatory approvals for our clinical trials may prevent us from completing our clinical trials or commercializing our products on a timely basis, if at all.

We intend to develop CLN-619 and potentially other product candidates in combination with other therapies, which exposes us to additional risks.

We intend to develop CLN-619 and potentially other product candidates in combination with one or more approved or unapproved therapies to treat cancer or other diseases. Even if any product candidate we develop were to receive marketing approval for use in combination with other approved therapies, the FDA, the EMA, or comparable foreign regulatory authorities outside of the U.S. could still revoke approval of the therapy used in combination with our product. If the therapies used in combination with our product candidates are replaced as the standard of care for the indications we choose for any of our product candidates, the FDA, EMA or comparable foreign regulatory authorities may require us to conduct additional clinical trials. The occurrence of any of these risks could result in our own products, if approved, being removed from the market or being less successful commercially.

Further, we will not be able to market and sell any product candidate we develop in combination with an unapproved cancer therapy for a combination indication if that unapproved therapy does not ultimately obtain marketing approval either alone or in combination with our product. In addition, unapproved cancer therapies face the same risks described with respect to our product candidates currently in development and clinical trials, including the potential for serious adverse effects, delay in their clinical trials and lack of FDA approval.

If the FDA, EMA or comparable foreign regulatory authorities do not approve these other products or revoke their approval of, or if safety, efficacy, quality, manufacturing or supply issues arise with the products we choose to evaluate in combination with our product candidate, we may be unable to obtain approval of or market such combination therapy.

If we are unable to successfully validate, develop, and obtain regulatory approval for any required companion diagnostic tests for our product candidates or experience significant delays in doing so, we may fail to obtain approval or may not realize the full commercial potential of these product candidates.

In connection with the clinical development of our product candidates for certain indications, we need to develop or obtain access to *in vitro* companion diagnostic tests to identify patient subsets within a disease category who may derive benefit from our product candidates, as we are targeting certain genetically defined populations for our treatments. Such companion diagnostics may be used during our clinical trials and may be required in connection with the FDA approval of our product candidates. To be successful, we or our collaborators will need to address a number of scientific, technical, regulatory, and logistical challenges. Companion diagnostics are subject to regulation by the FDA, the EMA, and other regulatory authorities as medical devices and require separate regulatory approval prior to commercialization.

Given our limited experience in developing and commercializing diagnostics, we may rely on third parties for the design, development, and manufacture of companion diagnostic tests for our product candidates that may require such tests. If we enter into such collaborative agreements, we will be dependent on the sustained cooperation and effort of our future collaborators in developing and obtaining approval for these companion diagnostics. We and our future collaborators may encounter difficulties in developing and obtaining approval for the companion diagnostics, including issues relating to selectivity/specificity, analytical validation, reproducibility, or clinical validation of companion diagnostics. We and our future collaborators also may encounter difficulties in developing, obtaining regulatory approval for, manufacturing, and commercializing companion diagnostics similar to those we face with respect to our product candidates themselves, including issues with achieving regulatory clearance or approval, production of sufficient quantities at commercial scale and with appropriate quality standards, and in gaining market acceptance. If we are unable to successfully develop companion diagnostics for these product candidates, or experience delays in doing so, the development of these therapeutic product candidates may be adversely affected or these product candidates may not obtain marketing approval or such approval may be delayed, and we may not realize the full commercial potential of any of these product candidates that obtain marketing approval. As a result, our business, results of operations, and financial condition could be materially harmed. In addition, a diagnostic company with whom we contract may decide to discontinue developing, selling or manufacturing the companion diagnostic test that we anticipate using in connection with development and commercialization of our product candidates or our relationship with such diagnostic company may otherwise terminate. We may not be able to enter into arrangements with another diagnostic company to obtain supplies of an alternative diagnostic test for use in connection with the development and commercialization of our product candidates or do so on commercially reasonable terms, which could adversely affect and/or delay the development or commercialization of our product candidates.

Our product candidates may cause undesirable side effects or have other properties that delay or prevent their regulatory approval, limit their commercial potential, or result in significant negative consequences following any potential marketing approval.

Our product candidates may cause undesirable side effects. Additionally, the administration process or related procedures also can cause adverse side effects. Adverse events that occur in our clinical trials may cause us, or cause the FDA, the EMA or other regulatory authorities, or IRBs, RECs, or equivalent organizations to order us to halt, delay or amend preclinical development or clinical development of our product candidates and could result in more restrictive labelling or the denial of regulatory approval of our product candidates for any or all targeted indications. Even if serious adverse events are unrelated to study treatment, such occurrences could affect patient enrollment or the ability of enrolled patients to complete the clinical trial. In addition, if any of our product candidates are tested or used in combination with other drugs, such as our plans to potentially use CLN-619 in combination with other agents, these combinations may have additional side effects, which could be more severe than those caused by either therapy alone.

Furthermore, 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 our product candidates or those of our competitors may only be uncovered when a significantly larger number of patients have been exposed to the drug. For example, while we believe that zipalertinib and CLN-619 have demonstrated manageable tolerability profiles thus far, there can be no assurance that they or any of our other product candidates will not cause more severe side effects in a greater proportion of patients.

Moreover, if we elect, or are required, to delay, suspend or terminate any clinical trial of any of our product candidates, the commercial prospects of such product candidates or our other product candidates may be harmed, and our ability to generate product revenues from any of these product candidates may be delayed or eliminated. Any of these occurrences may harm our ability to develop other product candidates and may harm our business, financial condition, results of operations, and prospects significantly.

If our product candidates receive marketing approval and we or others identify undesirable side effects caused by such product candidates (or any other similar drugs or biologics) after such approval, a number of potentially significant negative consequences could result, including:

- regulatory authorities may withdraw or limit their approval of such product candidates;
- regulatory authorities may require the addition of labeling statements, such as a “boxed” warning or a contraindication;
- we may be required to change the way such product candidates are distributed or administered, conduct additional clinical trials or change the labeling of the product candidates;
- regulatory authorities may require a Risk Evaluation and Mitigation Strategy ("REMS") plan to mitigate risks, which could include medication guides, physician communication plans, or elements to assure safe use, such as restricted distribution methods, patient registries, and other risk minimization tools;
- we may be subject to regulatory investigations and government enforcement actions;
- we may decide to remove such product candidates from the marketplace;
- we could be sued and held liable for injury caused to individuals exposed to or taking our product candidates; and
- our reputation may suffer.

We believe that any of these events could prevent us from achieving or maintaining market acceptance of the affected product candidates and could substantially increase the costs of commercializing our product candidates, if approved, and significantly impact our ability to successfully commercialize our product candidates and generate revenues.

Since the number of patients that have been and will be dosed in our ongoing clinical trials is small, the results from such clinical trials, once completed, may be less reliable than results achieved in larger clinical trials, which may hinder our efforts to obtain regulatory approval for our product candidates.

The preliminary results of clinical trials with smaller sample sizes can be disproportionately influenced by various biases associated with the conduct of small clinical trials, such as the potential failure of the smaller sample size to accurately depict the characteristics of the broader patient population, which limits the ability to generalize the results across a broader community, thus making the clinical trial results less reliable than clinical trials with a larger number of patients. As a result, there may be less certainty that such product candidates would achieve a statistically significant effect in any future clinical trials. Further, the FDA or other regulatory authorities may require us to conduct additional and larger clinical trials than we may plan to support applications for marketing authorization. If we conduct any future clinical trials of our current and future product candidates, we may not achieve a positive or statistically significant result or the same level of statistical significance, if any, that we might have anticipated based on prior results.

We are currently conducting and may in the future conduct clinical trials for product candidates outside the U.S., and the FDA and comparable foreign regulatory authorities may not accept data from such trials.

We are evaluating our current product candidates in clinical trials that include centers located inside and outside of the U.S. We may also in the future choose to conduct one or more additional clinical trials outside the U.S., including in Europe and Australia. The acceptance of study data from clinical trials conducted outside the U.S. or another jurisdiction by the FDA or comparable foreign regulatory authority may be subject to certain conditions or may not be accepted at all. If data from foreign clinical trials are intended to serve as the basis for marketing approval in the U.S., the FDA will generally not approve the application on the basis of foreign data alone unless (i) the data are applicable to the U.S. population and U.S. medical practice, and (ii) the clinical trials were performed by clinical investigators of recognized competence and pursuant to good clinical practice ("GCP") regulations. Additionally, the FDA's clinical trial requirements, including sufficient size of patient populations and statistical powering, must be met. Many foreign regulatory authorities have similar approval requirements. In addition, foreign clinical trials are subject to the applicable local laws of the foreign jurisdictions where the clinical trials are conducted. We would need to conduct additional trials if the FDA or any comparable foreign regulatory authority does not accept data from clinical trials conducted outside of the U.S. or the applicable foreign jurisdiction, which could be costly and time-consuming, and which may result in product candidates that we may develop not receiving approval for commercialization in the U.S. or any such foreign jurisdiction.

Risks Related to Our Financial Condition and Capital Requirements

Our limited operating history may make it difficult for you to evaluate the success of our business to date and to assess our future viability.

We began substantive operations in 2017. Our operations to date have been limited to organizing and staffing our company, business planning, raising capital, identifying, acquiring, and investing in potential product candidates, undertaking clinical trials, building our intellectual property portfolio, and establishing arrangements and collaborating with third parties for identification, discovery and research activities, preclinical studies, clinical trials, and the manufacture of initial quantities of our product candidates and component materials. We have not yet demonstrated our ability to successfully conduct late-stage clinical trials, complete any clinical trials, obtain marketing approvals, manufacture a commercial-scale product or arrange for a third party to do so on our behalf, or conduct sales, marketing, and distribution activities necessary for successful product commercialization.

Consequently, any predictions you make about our future success or viability may not be as accurate as they could be if we had a longer operating history.

We have incurred significant losses since inception, and we expect to incur losses over the next several years and may not be able to achieve or sustain revenues or profitability in the future.

Investment in biopharmaceutical product development is a highly speculative undertaking and entails substantial upfront capital expenditures and significant risk that any potential product candidate will fail to demonstrate adequate efficacy or an acceptable safety profile, gain regulatory approval, and become commercially viable. We are still in the early stages of development of our product candidates. We have no products approved for commercial sale and have not generated any revenue from product sales to date, and we continue to incur significant research and development and other expenses related to our ongoing operations. We have financed our operations primarily through the sale of equity securities.

We have incurred significant net losses in each period since we began substantive operations, with the exception of 2022. For 2023 and 2022, we reported a net loss of \$155.1 million and net income of \$109.2 million, respectively. As of December 31, 2023, we had an accumulated deficit of \$200.9 million. We expect to continue to incur significant losses for the foreseeable future, and we expect these losses to increase substantially if and as we:

- continue our research and development efforts and submit INDs for our current and future product candidates;
- conduct preclinical studies and clinical trials for our current and future product candidates;
- experience any delays or encounter any issues with any of the above, including but not limited to failed studies, complex results, safety issues, or other regulatory challenges;
- develop the necessary processes, controls, and manufacturing capabilities to obtain marketing approval for our product candidates and to support manufacturing on a commercial scale;
- seek regulatory approvals for any product candidates that successfully complete clinical trials, if any;
- hire and retain additional personnel, such as non-clinical, clinical, pharmacovigilance, quality assurance, regulatory affairs, manufacturing, distribution, legal, compliance, medical affairs, finance, general and administrative, commercial, and scientific personnel;
- establish a sales, marketing, and distribution infrastructure and scale-up manufacturing capabilities, whether alone or with third parties, to commercialize any current and future product candidates for which we may obtain regulatory approval; and
- develop, maintain, expand, and protect our intellectual property portfolio.

Because of the numerous risks and uncertainties associated with developing pharmaceutical product candidates, we are unable to predict the extent of any future losses or when we will become profitable, if at all. Even if we succeed in commercializing one or more of our product candidates, we will continue to incur substantial research and development and other expenditures to develop and seek regulatory approval for additional product candidates or additional indications. We may encounter unforeseen expenses, difficulties, complications, delays, and other unknown factors that may adversely affect our business. The size of our future net losses will depend, in part, on the rate of future growth of our expenses and our ability to generate revenue. Our prior losses and expected future losses have had and will continue to have an adverse effect on our stockholders' equity and working capital.

We have not generated any revenue from the sale of our product candidates and may never be profitable.

Our ability to become profitable depends upon our ability to generate revenue. Other than a previous licensing agreement, we have not generated any other license or collaboration revenue or any sales revenue from any of our product candidates. We do not expect to generate significant sales revenue or commercial revenue from the sale or license of one or more of our preclinical programs or product candidates unless or until we successfully complete clinical development and obtain regulatory approval of, and then successfully commercialize, at least one of our product candidates or, alternatively, enter into agreements with third parties for the purchase, collaboration, or license of one of our product candidates. We are currently advancing CLN-619, CLN-978, zipalertinib (pursuant to the co-development agreement with Taiho), CLN-049, CLN-418, and CLN-617 in clinical development, in addition to our other programs that are in the preclinical stages of development and will require additional preclinical studies. All of our product candidates will require additional clinical development, regulatory review and approval, substantial investment, access to sufficient commercial manufacturing capacity, and significant marketing efforts before we can generate any revenue from product sales.

Our ability to generate revenue depends on a number of factors, including, but not limited to:

- timely completion of our preclinical studies and clinical trials, which may be significantly slower or cost more than we currently anticipate and will depend substantially upon the performance of third-party contractors;
- our ability to complete IND-enabling studies and successfully submit INDs or comparable applications for our product candidates;
- whether we are required by the FDA or similar foreign regulatory authorities to conduct additional clinical trials or other studies beyond those planned to support the approval and commercialization of our current and future product candidates;
- our ability to timely seek and obtain regulatory and marketing approvals for any of our current and future product candidates;
- the prevalence, duration, and severity of potential side effects or other safety issues experienced by patients receiving our current and future product candidates;
- the willingness of physicians, operators of clinics, and patients to utilize or adopt any of our current and future product candidates over alternative or more conventional therapies, such as chemotherapy;
- the actual and perceived availability, cost, risk profile, and efficacy of our current and future product candidates, if approved, relative to existing and future alternative cancer therapies and competitive product candidates and technologies;
- the equal cost-sharing structure for clinical development and commercialization costs of zipalertinib in the U.S. and the equal profit-sharing structure from potential future U.S. sales of zipalertinib, each pursuant to the co-development agreement with Taiho;
- our ability and the ability of third parties with whom we contract to manufacture adequate clinical and commercial supplies of our current and future product candidates, remain in good standing with regulatory authorities and develop, validate, and maintain commercially viable manufacturing processes that are compliant with current good manufacturing practices ("cGMP");
- our ability to successfully develop a commercial strategy and thereafter commercialize our current and future product candidates in the U.S. and internationally, if approved for marketing, reimbursement, sale, and distribution in such countries and territories, whether alone or in collaboration with others;
- patient demand for our current and future product candidates, if approved; and
- our ability to establish and enforce intellectual property rights in and for our current and future product candidates.

Many of the factors listed above are beyond our control and could cause us to experience significant delays or prevent us from obtaining regulatory approvals or commercializing our current and future product candidates. Even if we are able to commercialize our current and future product candidates, we may not achieve profitability soon after generating product sales, if ever. If we are unable to generate sufficient revenue through the commercial sale of our current and future product candidates, or from agreements with third parties for the purchase, collaboration, or license of one or more of our product candidates, we may be unable to continue operations without continued funding.

We will require substantial additional funding to develop and commercialize our current and future product candidates. If we are unable to raise capital when needed, we would be compelled to delay, reduce, or eliminate our product development programs or other operations.

The development of pharmaceutical products is capital intensive. We are currently advancing CLN-619, CLN-978, zipalertinib (pursuant to the co-development agreement with Taiho), CLN-049, CLN-418, and CLN-617 in clinical development and making further investments in our preclinical programs. We expect our expenses to increase in parallel with our ongoing activities, as described above under the risk factor entitled “We have incurred significant losses since inception, and we expect to incur losses over the next several years and may not be able to achieve or sustain revenues or profitability in the future.” We have estimated our current additional funding needs based on assumptions that may prove to be wrong. Changing circumstances may cause us to consume capital significantly faster than we currently anticipate, and we may need to spend more money than currently expected because of circumstances beyond our control. We cannot be certain that additional funding will be available on acceptable terms, or at all. Until such time, if ever, as we can generate substantial product revenue, we expect to finance our operations through a combination of public or private equity offerings, debt financings, governmental funding, collaborations, strategic partnerships, and alliances, or marketing, distribution, or licensing arrangements with third parties. If we are unable to raise capital when needed or on attractive terms, we would be forced to delay, reduce, or eliminate our identification, discovery, and preclinical or clinical development programs, or any future commercialization efforts.

We had cash and cash equivalents, short-term investments, and interest receivable of \$468.3 million as of December 31, 2023. We believe that, based upon our current operating plan, our existing capital resources will be sufficient to fund our anticipated operations into the second half of 2026.

Our future capital requirements will depend on many factors, including:

- the scope, progress, results, and costs of drug discovery, laboratory testing, manufacturing and preclinical and clinical development for our current and future product candidates;
- the extent to which we enter into additional collaboration arrangements with regard to product discovery or acquire or in-license products or technologies;
- the equal cost-sharing structure for clinical development and commercialization costs of zipalertinib in the U.S. and the equal profit-sharing structure from potential future U.S. sales of zipalertinib, each pursuant to the co-development agreement with Taiho;
- our ability to establish additional discovery collaborations on favorable terms, if at all;
- the costs, timing, and outcome of regulatory review of our product candidates;
- the costs of future commercialization activities, including product sales, marketing, manufacturing, and distribution, for any of our product candidates for which we receive marketing approval;
- revenue, if any, received from commercial sales of our product candidates, should any of our product candidates receive marketing approval, or from licensing or collaboration agreements pursuant to which we may receive milestone, royalty, or other revenue from third parties developing or commercializing our product candidates; and
- the costs of preparing, filing, and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending intellectual property-related claims.

If we engage in acquisitions or strategic partnerships, this may increase our capital requirements, dilute our stockholders, cause us to incur debt or assume contingent liabilities, and subject us to other risks.

In June 2022, we sold our equity interest in Cullinan Pearl, formerly a development subsidiary of the Company, to Taiho and we entered into a co-development agreement with an affiliate of Taiho to co-develop and, at our option, co-commercialize zipalertinib in the U.S. Pursuant to the terms of the co-development agreement with Taiho, development costs for zipalertinib incurred after the sale of our equity interest in Cullinan Pearl are shared equally between us and Taiho, with each party receiving 50% of any future pre-tax profits from potential U.S. sales of zipalertinib.

We intend to engage in various acquisitions and strategic partnerships in the future, including licensing or acquiring products, intellectual property rights, technologies, or businesses. Any acquisition or strategic partnership, including the co-development agreement with Taiho, may entail numerous risks to us, including:

- increased operating expenses and cash requirements;
- the assumption of indebtedness or contingent liabilities;
- the issuance of equity securities which would result in dilution;

- assimilation of operations, intellectual property, products, and product candidates of an acquired company, including difficulties associated with integrating new personnel;
- the diversion of financial and managerial resources from our existing product programs and initiatives in pursuing such an acquisition or strategic partnership;
- retention of key employees, the loss of key personnel, and uncertainties in our ability to maintain key business relationships;
- risks and uncertainties associated with the other party to such a transaction, including the prospects of that party and their existing products or product candidates and regulatory approvals;
- our inability to generate revenue from acquired intellectual property, technology, and/or products sufficient to meet our objectives or even to offset the associated transaction and maintenance costs;
- risk of conducting research and development activities in new therapeutic areas or treatment modalities in which we have little to no experience;
- successfully negotiating a proposed acquisition, in-license or investment in a timely manner and at a price or on terms and conditions favorable to us;
- successfully combining and integrating a potential acquisition into our existing business to fully realize the benefits of such acquisition;
- the impact of regulatory reviews on a proposed acquisition, in-license or investment; and
- the outcome of any legal proceedings that may be instituted with respect to the proposed acquisition, in-license or investment.

If we fail to properly evaluate potential acquisitions, in-licenses, investments or other transactions associated with the creation of new research and development programs or the maintenance of existing ones, we might not achieve the anticipated benefits of any such transaction, we might incur costs in excess of what we anticipate, and management resources and attention might be diverted from other necessary or valuable activities.

Raising additional capital may cause dilution to our existing stockholders, restrict our operations or require us to relinquish rights to our technologies or product candidates on unfavorable terms to us.

To the extent that we raise additional capital through the sale of equity or convertible debt securities, existing ownership interests will be diluted, and the terms may include liquidation or other preferences that adversely affect the rights of our stockholders. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take certain actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we raise additional funds through strategic partnerships with third parties, we may have to relinquish valuable rights to our technologies or product candidates, future revenue streams, research programs or product candidates or grant licenses on terms that are not favorable to us. If we are unable to raise additional capital when needed, we would be required to delay, limit, reduce or terminate our product development or commercialization efforts for our current and future product candidates.

Our stockholders will experience substantial additional dilution if outstanding stock options are exercised for common stock.

As of March 1, 2024, the number of shares of our common stock outstanding excludes approximately 12.1 million shares of common stock issuable upon the exercise of stock options, having a weighted-average exercise price of \$15.84 per share. The exercise of outstanding stock options for common stock would be substantially dilutive to existing stockholders. As of March 1, 2024, the number of shares of our common stock outstanding also excludes approximately 1.6 million shares of common stock issuable upon vesting of restricted stock units (assuming the Company achieves its corporate stock price metrics at the target achievement level), approximately 2.2 million shares of common stock reserved for future issuance under our 2021 Stock Option and Incentive Plan and 1.7 million shares of common stock reserved for future issuance under our 2021 Employee Stock Purchase Plan, as amended. Any dilution or potential dilution may cause our stockholders to sell their shares, which may contribute to a downward movement in the stock price of our common stock.

Our operations and financial condition have been and could continue to be adversely affected by global and regional economic conditions in ways we may not be able to predict or control.

Our operations and financial condition have been and could continue to be adversely affected by global or regional economic conditions if markets decline in the future, whether related to a public health crisis similar to the COVID-19 pandemic, the Russian invasion of Ukraine, the Israel-Hamas war, U.S.-China relations, U.S.-Iran relations, higher inflation or interest rates, recession, natural disasters, impacts of and issues related to climate change, business disruptions, our ability to adequately staff operations or otherwise. Additionally, escalation in interest rates, in conjunction with banking failures, may lead to financial institutions being more prudent with capital deployment and tightening lending, especially in relation to construction and real estate development.

Business disruptions could seriously harm our future revenue and financial condition and increase our costs and expenses.

Our operations, and those of our CROs, CMOs and other contractors and consultants, could be subject to earthquakes, power shortages, telecommunications failures, water shortages, floods, hurricanes, typhoons, fires, extreme weather conditions, medical epidemics and other natural or man-made disasters or business interruptions. The occurrence of any of these business disruptions could seriously harm our operations and financial condition and increase our costs and expenses. We rely on third-party manufacturers to produce our product candidates. Our ability to obtain clinical supplies of our product candidates could be disrupted if the operations of these suppliers are affected by a man-made or natural disaster or other business interruption.

Risks Related to Our Corporate Structure

We may not be successful in our efforts to build a pipeline of product candidates with commercial value.

A key element of our strategy is to form or seek strategic alliances, create joint ventures or collaborations, or enter into licensing arrangements with third parties for programs, product candidates, technologies or intellectual property that we believe are novel, employ differentiated mechanisms of action, are more advanced in development than competitors, or have a combination of these attributes. We face significant competition in seeking appropriate strategic partners and licensing and acquisition opportunities, and the negotiation process is time-consuming and complex. We may not be successful in our efforts in building a pipeline of product candidates for the treatment of various cancers through acquisitions, licensing or through internal development or in progressing these product candidates through clinical development. Although we analyze whether we can replicate scientific results observed prior to our acquisition or investment in a product candidate, we may not be successful in doing so after our investment. For example, we may not be successful in identifying additional genetic mutations which are oncogenic and which can be “basketed” into a group that is large enough to present a sufficient commercial opportunity or that is druggable with one chemical compound.

Additionally, we are pursuing additional in-licenses or acquisitions of development-stage assets or programs, which entails additional risk to us. Identifying, selecting, and acquiring promising product candidates requires substantial technical, financial and human resources expertise. Efforts to do so may not result in the actual acquisition or license of a successful product candidate, potentially resulting in a diversion of our management’s time and the expenditure of our resources with no resulting benefit. For example, if we are unable to identify programs that ultimately result in approved products, we may spend material amounts of our capital and other resources evaluating, acquiring, and developing products that ultimately do not provide a return on our investment. We have terminated programs and expect to terminate programs in the future if they do not meet our criteria for advancement.

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

Because we have limited financial and managerial resources, we focus on research programs and product candidates that we identify for specific indications. As a result, we may forego or delay pursuit of opportunities with other product candidates or for other indications that later prove to have greater commercial potential. If we do so, we may never realize the anticipated benefits of these decisions and, as a result, we may be required to forego or delay other opportunities. In addition, 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 for specific indications may not yield any commercially viable products. If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through collaboration, licensing or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such product candidate.

Certain agreements provide our licensors, collaborators, or other shareholders in our development subsidiaries with rights that could delay or impact the potential sale of our development subsidiaries or could impact our ability to sell assets, or enter into strategic alliances, collaborations, or licensing arrangements with other third parties.

We license intellectual property from third parties for several of our product candidates and have raised capital from third-party investors for CLN-619, CLN-049 and CLN-617. These third parties have certain rights that could delay collaboration, licensing or other arrangement with another third party, and the existence of these rights may adversely impact the ability to attract an acquirer or partner. These rights include rights of negotiation and fees payable upon a sale of assets or change of control of a subsidiary that are contained in license agreements, as well as rights such as drag-along rights in agreements with shareholders of the subsidiary.

In addition, we will also owe the licensors of CLN-049 and CLN-617 a success fee in the event of a sale or other disposition of the majority of the assets of the development subsidiaries holding these product candidates. These fees will reduce the net proceeds we receive from any such sale or disposition of assets.

We have also entered into investor rights and voting agreements with third-party investors, which may delay or impact our ability to sell our equity interests in or the assets of our development subsidiaries. For example, we would need to comply with certain notice and other provisions, such as a drag-along provision in the event of sale of the subsidiary, which may delay or prevent a specific transaction or make transacting with our subsidiaries and us less attractive to third parties.

We may enter into similar agreements with future partners or investors that in each case may contain similar provisions or other terms that are not favorable to us.

Our reliance on a central team consisting of a limited number of employees presents operational challenges that may adversely affect our business.

As of December 31, 2023, we had 85 full-time employees upon which we rely for various research and development, administrative and other support services. While we believe this structure enables us to reduce certain infrastructure costs, the small size of our centralized team may limit our ability to devote adequate personnel, time, and resources to our research and development activities, and the management of financial, accounting, and reporting matters. If our centralized team fails to provide adequate research and development, administrative, or other services across our entire organization, our business, financial condition, and results of operations could be harmed.

Risks Related to Potential Commercialization

Even if we obtain regulatory approval of our product candidates, the products may not gain market acceptance among physicians, patients, hospitals, cancer treatment centers, and others in the medical community.

The use of targeted oncology medicines as a potential cancer treatment is a recent development and may not become broadly accepted by physicians, patients, hospitals, cancer treatment centers, and others in the medical community. Various factors will influence whether our product candidates are accepted in the market, including:

- the clinical indications for which our product candidates are licensed;
- physicians, hospitals, cancer treatment centers, and patients considering our product candidates as a safe and effective treatment;
- the potential and perceived advantages of our product candidates over alternative treatments;
- the prevalence and severity of any side effects caused by our product candidates;
- the prevalence and severity of any side effects for other precision medicines and public perception of other precision medicines;
- product labeling or product insert requirements of the FDA or other regulatory authorities;
- limitations or warnings contained in the labeling approved by the FDA;
- the timing of market introduction of our product candidates as well as competitive products;
- the cost of treatment in relation to alternative treatments;
- the availability of adequate coverage, reimbursement and pricing by third-party payors and government authorities;
- the willingness of patients to pay out-of-pocket in the absence of coverage by third-party payors and government authorities;

- relative convenience and ease of administration, including as compared to alternative treatments and competitive therapies; and
- the effectiveness of our sales and marketing efforts.

If our product candidates are licensed but fail to achieve market acceptance among physicians, patients, hospitals, cancer treatment centers or others in the medical community, we will not be able to generate significant revenue.

Even if our product candidates achieve market acceptance, we may not be able to maintain that market acceptance over time if new products or technologies are introduced that are more favorably received than our products, are more cost effective or render our products obsolete.

We face substantial competition, which may result in others discovering, developing, or commercializing products before or more successfully than we do.

The biotechnology and pharmaceutical industries are characterized by the rapid evolution of technologies and understanding of disease etiology, intense competition, and a strong emphasis on intellectual property. We face, and will continue to face, competition from companies focused on more traditional therapeutic modalities, such as small-molecule inhibitors. We believe that our differentiated business model, approach, scientific capabilities, know-how, and experience provide us with competitive advantages. However, we expect substantial competition from multiple sources, including major pharmaceutical, specialty pharmaceutical, and existing or emerging biotechnology companies, academic research institutions, governmental agencies, and public and private research institutions worldwide. Many of our competitors, either alone or through collaborations, 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 companies also compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and recruiting patients in clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs. As a result, our competitors may discover, develop, license or commercialize products before or more successfully than we do.

Product candidates that we successfully develop and commercialize will compete with existing therapies and new therapies that may become available in the future. The key competitive factors affecting the success of all of our product candidates, if approved, are likely to be their efficacy, safety, convenience, price, the level of generic competition, and the availability of reimbursement from government and other third-party payors. Our competitors may obtain patent protection or other intellectual property rights that limit our ability to develop or commercialize our product candidates. The availability of reimbursement from government and other third-party payors will also significantly affect the pricing and competitiveness of our products. Our competitors may also obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for ours, which could result in our competitors establishing a strong market position before we are able to enter the market. If our competitors develop and commercialize drugs that are safer, more effective, have fewer or less severe side effects, are more convenient to administer, are less expensive or with a more favorable label than our product candidates, we could see a reduction or elimination in our commercial opportunity. For additional information regarding our competition, see the section of this Annual Report on Form 10-K titled “Business—Competition.”

The insurance coverage and reimbursement status of newly-approved products is uncertain. Our product candidates may become subject to unfavorable pricing regulations, third-party coverage and reimbursement practices, or healthcare reform initiatives, which would harm our business. Failure to obtain or maintain adequate coverage and reimbursement for new or current products could limit our ability to market those products and decrease our ability to generate revenue.

The regulations that govern marketing approvals, pricing, coverage, and reimbursement for new drugs vary widely from country to country. Some countries require approval of the sale price of a drug before the product can be marketed. In many countries, the pricing review period begins after marketing or product licensing approval is granted. In some foreign markets, prescription pharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted. As a result, we might obtain marketing approval for a product candidate 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 product candidates, even if any product candidates we may develop obtain marketing approval.

In the U.S. and markets in other countries, patients generally rely on third-party payors to reimburse all or part of the costs associated with their treatment. Adequate coverage and reimbursement from governmental authorities or healthcare programs, such as Medicare and Medicaid, and private payors, such as health plans, is critical to new product acceptance. Our ability to successfully commercialize our product candidates will depend in part on the extent to which adequate coverage and reimbursement for these products and related treatments will be available from government authorities and programs as well as private health insurers and other organizations. Government authorities and other third-party payors decide which products will be covered and establish reimbursement levels for the products (or the services provided using the products). If coverage and adequate reimbursement is not available, or is available but limited, we may not be able to successfully commercialize our product candidates. Under such circumstances, we may not be able to establish or maintain pricing sufficient to realize a sufficient return on our investment.

Within the U.S., no uniform policy of coverage and reimbursement for drug products exists among third-party payors. Coverage and reimbursement for new drug products is uncertain and, if applicable, can differ significantly from payor to payor. New products face particular coverage and reimbursement challenges. To obtain or maintain coverage and reimbursement for any approved drug product, we may need to conduct expensive pharmacoeconomic studies or otherwise provide evidence to demonstrate the medical necessity and cost-effectiveness of our product. These studies will be in addition to the studies required to obtain or maintain regulatory approvals. If third-party payors do not consider a product to be cost-effective compared to other available therapies, they may not cover the product or, if they do, the level of payment may not be sufficient to allow sale of a product at a profit.

Even if third-party payors provide some coverage, the third-party payors may impose limits on the coverage or controls to manage utilization of products. Third-party payors may limit coverage to specific products on an approved list, or formulary, which might not include all of the approved products for a particular indication and can exclude drugs from their formularies in favor of competitor drugs or alternative treatments. Payors may also impose step edits that require patients to try alternative, including generic, treatments before authorizing payment for our products, limit the types of diagnoses for which coverage will be provided, require pre-approval (known as “prior authorization”) for coverage of a prescription for each patient (to allow the payor to assess medical necessity) or impose a moratorium on coverage for products while the payor makes a coverage decision.

Moreover, a third-party payor’s decision to provide coverage for a product does not mean that an adequate reimbursement rate will be approved. We may be required to provide mandatory discounts or rebates to certain purchasers to obtain coverage under federal healthcare programs, or to sell products to government purchasers. We also may have to offer discounts or rebates to private third-party payors to obtain favorable coverage.

Reimbursement rates may vary according to the use of the drug and the clinical setting in which the drug is used; they may be based on reimbursement levels already set for lower cost drugs and may be incorporated into existing payments for other services. Adequate third-party reimbursement may not be available to enable us to maintain net price levels sufficient to realize an appropriate return on our investment in product development.

Our inability to promptly obtain coverage and profitable payment rates from both government-funded and private payors for any approved products we may develop could have a material adverse effect on our operating results, our ability to raise capital needed to commercialize product candidates, and our overall financial condition.

Outside the U.S., governmental authorities and other third-party payors have also attempted to control costs by limiting coverage and the amount of reimbursement for particular medications. In many countries, the prices of medical products are subject to varying price control mechanisms as part of national health systems. In general, the prices of medicines under such systems are substantially lower than in the U.S. Other countries allow companies to fix their own prices for medicines, but monitor and control company profits. Additional foreign price controls or other changes in pricing regulation could restrict the amount that we are able to charge for our product candidates. Accordingly, in markets outside the U.S., the reimbursement for products may be reduced compared with the U.S. and may be insufficient to generate commercially reasonable revenues and profits.

Additionally, we may develop companion diagnostic tests for use with our product candidates. We, or our collaborators, may be required to obtain coverage and reimbursement for these tests separate and apart from the coverage and reimbursement we seek for our product candidates, once approved. Even if we obtain regulatory approval or clearance for such companion diagnostics, there is significant uncertainty regarding our ability to obtain coverage and adequate reimbursement for the same reasons applicable to our product candidates. Our inability to promptly obtain coverage and adequate reimbursement from both third-party payors for the companion diagnostic tests that we develop and for which we obtain regulatory approval could have a material and adverse effect on our business, financial condition, results of operations and prospects.

We expect ongoing initiatives from government and private payors to control utilization and costs of healthcare generally and drug products specifically, which initiatives could reduce demand for any product candidates for which we obtain marketing approval or limit the prices that we may charge for such products.

Healthcare legislative measures aimed at reducing healthcare costs may have a material adverse effect on our business and results of operations.

The U.S. and many foreign jurisdictions have enacted or proposed legislative and regulatory changes affecting the healthcare system that could prevent or delay marketing approval of our product candidates or any future product candidates, restrict or regulate post-approval activities and affect our ability to profitably sell a product for which we obtain marketing approval. Changes in regulations, statutes or the interpretation of existing regulations could impact our business in the future by requiring, for example: (i) changes to our manufacturing arrangements; (ii) additions or modifications to product labeling; (iii) the recall or discontinuation of our products; or (iv) additional record-keeping requirements. If any such changes were to be imposed, they could adversely affect the operation of our business.

In the U.S. and some foreign jurisdictions, there have been, and we expect there will continue to be, a number of legislative and regulatory reforms affecting the delivery of, and payment for, healthcare services, including cost-containment measures that may limit coverage and reimbursement for newly approved drugs and affect our ability to profitably sell any product candidates for which we obtain marketing approval. In particular, there have been and continue to be a number of initiatives at the U.S. federal and state levels that seek to reduce healthcare costs and improve the quality of healthcare. For additional information regarding healthcare reform, see the section of this Annual Report on Form 10-K titled “Business—Governmental Regulation—Healthcare Reform.”

Within the U.S., for example, the ACA was enacted in 2010 and has substantially changed the way healthcare is financed by both governmental and private insurers and significantly affected the pharmaceutical industry. Since its enactment, there have been judicial, congressional, and executive branch challenges to the ACA. For example, tax reform legislation was enacted that eliminated the tax penalty established by ACA for individuals who do not maintain mandated health insurance coverage beginning in 2019 and, in 2021, the U.S. Supreme Court dismissed the latest judicial challenge to the ACA brought by several states without specifically ruling on the constitutionality of the ACA.

Beyond the ACA, there have been ongoing healthcare reform efforts, including under the Biden administration. Significantly, the IRA includes a number of healthcare reform provisions. The IRA, which has varying implementation dates, extends enhanced subsidies for individuals purchasing health insurance coverage in ACA marketplaces; eliminates the “donut hole” under the Medicare Part D program by lowering the beneficiary maximum out-of-pocket cost and establishing a new manufacturer discount program; imposes new Medicare Part B and Part D drug price inflation rebates, and implements a drug price negotiation program for certain high spend Medicare Part B and D drugs. Such healthcare reform efforts have been and likely will continue to be subject to legal challenge.

Further, there has been heightened governmental scrutiny in the U.S. of pharmaceutical pricing practices in light of the rising cost of prescription drugs. Such scrutiny 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 products. For example, in addition to the IRA drug pricing reforms, federal legislation enacted in 2021 eliminated the statutory cap on Medicaid drug rebate program rebates (currently set at 100% of a drug’s “average manufacturer price”) effective January 1, 2024.

At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, encourage importation from other countries and bulk purchasing. Legally mandated price controls on payment amounts by third-party payors or other restrictions could harm our business, financial condition, results of operations and prospects. In addition, hospitals and health systems are increasingly using bidding procedures to determine what pharmaceutical products and which suppliers will be included in their prescription drug and other healthcare services. This could reduce the ultimate demand for our product candidates, if approved, or put pressure on our product pricing, which could negatively affect our business, financial condition, results of operations and prospects.

The continuing efforts of the government as well as third-party payors to contain or reduce costs of healthcare and/or impose price controls may adversely affect:

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

- the availability of capital.

General legislative cost control measures may also affect reimbursement for our product candidates. The Budget Control Act, as amended, resulted in the imposition of reductions in Medicare (but not Medicaid) payments to providers in 2013 and will remain in effect through 2032 (except May 1, 2020 to March 31, 2022) unless additional Congressional action is taken. Any significant spending reductions affecting Medicare, Medicaid or other publicly funded or subsidized health programs that may be implemented and/or any significant taxes or fees that may be imposed on us could have an adverse impact on our results of operations.

We expect that current and any future healthcare or budget reform measures in the U.S. or abroad may result in more rigorous coverage criteria, new payment methodologies and additional downward pressure on the payment that we receive or price that we may charge for any approved product. The implementation of such reforms may prevent us from being able to generate revenue, attain profitability or commercialize our product candidates, if approved.

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

We face an inherent risk of product liability litigation as a result of the clinical testing of our product candidates and will face an even greater risk if we commercialize any products. For example, we may be sued if our product candidates cause or are perceived to cause injury or are found to be otherwise unsuitable during clinical testing, manufacturing, marketing or sale. Any such product liability claims may include allegations of defects in manufacturing, defects in design, a failure to warn of dangers inherent in the product, negligence, strict liability or a breach of warranties. Claims could also be asserted under state consumer protection acts. If we cannot successfully defend ourselves against product liability claims, we may incur substantial liabilities or be required to limit commercialization of our product candidates. Even a successful defense would require significant financial and management resources. Regardless of the merits or eventual outcome, product liability claims may result in:

- decreased demand for our product candidates or products that we may develop;
- injury to our reputation;
- withdrawal of clinical trial participants;
- initiation of investigations by regulators;
- costs to defend the related litigation;
- a diversion of management's time and our resources;
- substantial monetary awards to clinical trial participants or patients;
- product recalls, withdrawals or labeling, marketing or promotional restrictions;
- loss of revenue;
- exhaustion of any available insurance and our capital resources;
- the inability to commercialize any product candidate; and
- a decline in our share price.

Failure to obtain or retain sufficient product liability insurance at an acceptable cost to protect against potential product liability claims could prevent or inhibit the commercialization of product candidates we develop, alone or with corporate collaborators. Although we have clinical trial insurance, our insurance policies also have various exclusions, and we may be subject to a product liability claim for which we have no coverage. We may have to pay any amounts awarded by a court or negotiated in a settlement that exceed our coverage limitations or that are not covered by our insurance, and we may not have, or be able to obtain, sufficient capital to pay such amounts. Even if our agreements with any future corporate collaborators entitle us to indemnification against losses, such indemnification may not be available or adequate should any claim arise.

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

We are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. Our operations involve the use of hazardous and flammable materials, including chemicals and biological and radioactive materials. Our operations also produce hazardous waste products. We generally contract with third parties for the disposal of these materials and wastes. We cannot eliminate the risk of contamination or injury from these materials. In the event of contamination or injury resulting from our use of hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties.

Although we maintain workers' compensation insurance to cover us for costs and expenses, we may incur due to injuries to our employees resulting from the use of hazardous materials, this insurance may not provide adequate coverage against potential liabilities. We do not maintain insurance for environmental liability or toxic tort claims that may be asserted against us in connection with our storage or disposal of biological, hazardous or radioactive materials.

The market opportunities for our product candidates may be relatively small since the patients who may potentially be treated with our product candidates are those who are ineligible for or have failed prior treatments, and our estimates of the prevalence of our target patient populations may be inaccurate.

Cancer therapies are sometimes characterized by line of therapy (first line, second line, third line, fourth line, etc.), and the FDA often approves new therapies initially only for a particular line or lines of use. When cancer is detected early enough, first line therapy is sometimes adequate to cure the cancer or prolong life without a cure. Whenever first line therapy, usually chemotherapy, antibody drugs, tumor-targeted small molecules, hormone therapy, radiation therapy, surgery, or a combination of these, proves unsuccessful, second line therapy may be administered. Second line therapies often consist of more chemotherapy, radiation, antibody drugs, tumor-targeted small molecules, or a combination of these. Third line therapies can include chemotherapy, antibody drugs and small-molecule tumor-targeted therapies, more invasive forms of surgery, and new technologies. There is no guarantee that our product candidates, even if approved as a second or third or subsequent line of therapy, would be approved for an earlier line of therapy, and, prior to any such approvals, we may have to conduct additional clinical trials.

Our projections of both the number of people who have the cancers we are targeting, who may have their tumors genetically sequenced, as well as the subset of people with these cancers in a position to receive a particular line of therapy and who have the potential to benefit from treatment with our product candidates, are based on our beliefs and estimates. These estimates have been derived from a variety of sources, including scientific literature, surveys of clinics, patient foundations or market research, and may prove to be incorrect. Further, new therapies may change the estimated incidence or prevalence of the cancers that we are targeting. Consequently, even if our product candidates are approved for a second or third line of therapy, the number of patients that may be eligible for treatment with our product candidates may turn out to be much lower than expected. In addition, we have not yet conducted market research to determine how treating physicians would expect to prescribe a product that is approved for multiple tumor types if there are different lines of approved therapies for each such tumor type.

We currently have no marketing and sales organization and have no experience in marketing products. If we are unable to establish marketing and sales capabilities or enter into agreements with third parties to market and sell our product candidates, if approved, we may not be able to generate product revenue.

We currently have no sales, marketing or distribution capabilities and have no experience in marketing products. If we commercialize ourselves any of our product candidates that may be approved, we will need to develop an in-house marketing organization and sales force, which will require significant capital expenditures, management resources and time. We will have to compete with other pharmaceutical and biotechnology companies to recruit, hire, train and retain marketing and sales personnel.

If we are unable or decide not to establish internal sales, marketing and distribution capabilities, we will pursue arrangements with third-party sales, marketing, and distribution collaborators regarding the sales and marketing of our products, if approved. However, there can be no assurance that we will be able to establish or maintain such arrangements on favorable terms or at all, or if we are able to do so, that these third-party arrangements will provide effective sales forces or marketing and distribution capabilities. Any revenue we receive will depend upon the efforts of such third parties, which may not be successful. We may have little or no control over the marketing and sales efforts of such third parties and our revenue from product sales may be lower than if we had commercialized our product candidates ourselves. We also face competition in our search for third parties to assist us with the sales and marketing efforts of our product candidates.

There can be no assurance that we will be able to develop in-house sales and distribution capabilities or establish or maintain relationships with third-party collaborators to commercialize any product in the U.S. or overseas.

Risks Related to Government Regulation

If we are not able to obtain, or are delayed in obtaining, required regulatory approvals for our product candidates, we will not be able to commercialize, or will be delayed in commercializing, our product candidates, and our ability to generate revenue will be materially impaired.

Our product candidates and the activities associated with their development and commercialization, including their design, testing, manufacture, safety, efficacy, recordkeeping, labeling, storage, approval, advertising, promotion, sale, distribution, import, and export are subject to comprehensive regulation by the FDA and other regulatory agencies in the U.S. and by comparable authorities in other countries. Before we can commercialize any of our product candidates, we must obtain marketing approval. Whether the results from our current ongoing clinical trials and other trials will suffice to obtain approval will be a review issue and the FDA may not grant approval and may require that we conduct one or more controlled clinical trials to obtain approval. Additionally, even if the FDA grants approval for one or more of our product candidates, it may be for a narrower indication than we seek. Regulatory authorities, including the FDA, also may impose significant limitations in the form of narrow indications, warnings, or a REMS. These regulatory authorities may require labeling that includes precautions or contra-indications with respect to conditions of use, or they may grant approval subject to the performance of costly post-marketing clinical trials. In addition, regulatory authorities may not approve the labeling claims that are necessary or desirable for the successful commercialization of any product candidates we may develop.

To date, we have had interactions with regulatory authorities in Australia, mainland China, Hong Kong, Italy, Netherlands, Poland, Singapore, South Korea, Spain, Taiwan, and the U.S. for our current product candidates. There is limited experience of regulatory authorities outside of the U.S. with the approval of tumor-agnostic precision cancer medicines.

Securing regulatory approval also requires the submission of information about the product manufacturing process to, and inspection of manufacturing facilities by, the relevant regulatory authority. Further, our product candidates may not be effective, may be only moderately effective or may prove to have undesirable or unintended side effects, toxicities or other characteristics that may preclude our obtaining marketing approval or prevent or limit commercial use.

The process of obtaining regulatory approvals, both in the U.S. and abroad, is expensive, may take many years if additional clinical trials are required, if approval is obtained at all, and can vary substantially based upon a variety of factors, including the type, complexity, and novelty of the product candidates involved. Changes in marketing approval policies during the development period, changes in or the enactment of additional statutes or regulations, or changes in regulatory review for each submitted IND, CTA, Biologics License Application ("BLA"), New Drug Application ("NDA"), marketing authorization application, or equivalent application type, may cause delays in the approval or rejection of an application. The FDA and other competent authorities have substantial discretion in the approval process and may refuse to accept any application or may decide that our data are insufficient for approval and require additional preclinical, clinical or other studies.

Our product candidates could be delayed in receiving, or fail to receive, regulatory approval for many reasons, including the following:

- the FDA or comparable foreign regulatory authorities may disagree with the design or implementation of our clinical trials;
- the FDA or comparable foreign regulatory authorities may disagree with our tumor-agnostic development strategy;
- we may be unable to demonstrate to the satisfaction of the FDA or comparable foreign regulatory authorities that a product candidate is safe and effective for its proposed indication or a related companion diagnostic is suitable to identify appropriate patient populations;
- the results of clinical trials may not meet the level of statistical significance required by the FDA or comparable foreign regulatory authorities for approval;
- we may be unable to demonstrate that a product candidate's clinical and other benefits outweigh its safety risks;
- the FDA or comparable foreign regulatory authorities may disagree with our interpretation of data from preclinical studies or clinical trials;
- the data collected from clinical trials of our product candidates may not be sufficient to support the submission of a BLA, NDA or other submission or to obtain regulatory approval in the U.S. or elsewhere;
- the FDA or comparable foreign regulatory authorities may determine that the manufacturing processes or controls or the facilities of third-party manufacturers with which we contract for clinical and commercial supplies are inadequate; and

- the approval policies or regulations of the FDA or comparable foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval.

Of the large number of product candidates in development, only a small percentage successfully complete the FDA or foreign regulatory approval processes and are commercialized. The lengthy approval process as well as the unpredictability of future clinical trial results may result in our failing to obtain regulatory approval to market our product candidates, which would significantly harm our business, results of operations, and prospects.

We may in the future seek orphan drug status for some of our current and future product candidates, but we may be unable to obtain such designations or to maintain the benefits associated with orphan drug status, including market exclusivity, which may cause our revenue, if any, to be reduced.

Under the Orphan Drug Act, the FDA may grant orphan designation to a drug or biologic intended to treat a rare disease or condition, defined as a disease or condition with a patient population of fewer than 200,000 in the U.S., or a patient population greater than 200,000 in the U.S. when there is no reasonable expectation that the cost of developing and making available the drug or biologic in the U.S. will be recovered from sales in the U.S. for that drug or biologic. Orphan drug designation must be requested before submitting a BLA or NDA. In the U.S., orphan drug designation entitles a party to financial incentives such as opportunities for grant funding towards clinical trial costs, tax advantages, and user-fee waivers. After the FDA grants orphan drug designation, the generic identity of the drug or biologic and its potential orphan use are disclosed publicly by the FDA. Orphan drug designation does not convey any advantage in, or shorten the duration of, the regulatory review and approval process.

If a product that has orphan drug designation subsequently receives the first FDA approval for a particular drug for the disease for which it has such designation, the product is entitled to orphan product exclusivity, which means that the FDA may not approve any other applications, including a BLA or NDA, to market the same drug for the same indication for seven years, except in limited circumstances such as a showing of clinical superiority to the product with orphan drug exclusivity or if the FDA finds that the holder of the orphan drug exclusivity has not shown that it can assure the availability of sufficient quantities of the orphan drug to meet the needs of patients with the disease or condition for which the drug was designated. As a result, even if one of our product candidates receives orphan exclusivity, that exclusivity may not effectively protect the product candidate from competition because different product candidates can be approved for the same condition. In addition, even after an orphan drug is approved, the FDA can subsequently approve a later product candidate that is the same drug as the drug with orphan exclusivity for the same condition if the FDA concludes that the later product candidate is clinically superior in that it is shown to be safer, more effective or makes a major contribution to patient care compared with the product that has orphan exclusivity. Orphan drug exclusivity may also be lost if the FDA determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantity of the product to meet the needs of the patients with the rare disease or condition. The FDA has historically taken the position that the scope of orphan exclusivity aligns with the approved indication or use of a product, rather than the disease or condition for which the product received orphan designation. However, on September 30, 2021, the U.S. Court of Appeals for the Eleventh Circuit issued a decision in *Catalyst Pharms., Inc. v. Becerra* holding that the scope of orphan drug exclusivity must align with the disease or condition for which the product received orphan designation, even if the product's approval was for a narrower use or indication.

We may seek orphan drug designation for some or all of our current and future product candidates in additional orphan indications in which there is a medically plausible basis for the use of these products. Even when we obtain orphan drug designation, exclusive marketing rights in the U.S. may be limited if we seek approval for an indication broader than the orphan designated indication and 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. In addition, although we intend to seek orphan drug designation for other product candidates, we may never receive such designations. For example, the FDA has expressed concerns regarding the regulatory considerations for orphan drug designation as applied to tumor-agnostic therapies, and the FDA may interpret the federal Food, Drug and Cosmetic Act, as amended (the "FDCA"), and regulations promulgated thereunder in a way that limits or blocks our ability to obtain orphan drug designation or orphan drug exclusivity, if our product candidates are approved, for our targeted indications.

On August 18, 2017, the FDA Reauthorization Act of 2017 ("FDARA") was enacted. FDARA, among other things, codified the FDA's pre-existing regulatory interpretation, to require that a drug sponsor demonstrate the clinical superiority of an orphan drug that is otherwise the same as a previously approved drug for the same rare disease in order to receive orphan drug exclusivity. The legislation was made in response to a court ruling holding that the Orphan Drug Act unambiguously requires that the FDA recognize the orphan exclusivity period of a company obtains approval of a drug designated as an orphan drug, regardless of a showing of clinical superiority. Moreover, in the Consolidated Appropriations Act, 2021, Congress did not further change this interpretation when it clarified that the interpretation codified in FDARA would apply in cases where the FDA issued an orphan designation before the enactment of FDARA but where product approval came after the enactment of FDARA. Additionally, the Catalyst decision regarding interpretation of the Orphan Drug Act's exclusivity provisions as applied to drugs and biologics approved for orphan indications being narrower than the product's orphan designation has the potential to significantly broaden the scope of orphan exclusivity for such products. The FDA announced on January 24, 2023 that despite the Catalyst decision, it will continue to apply its longstanding regulations, which tie the scope of orphan exclusivity to the uses or indications for which the drug is approved, rather than to the designation. The FDA's application of its orphan drug regulations post-Catalyst could be the subject of future legislation or to further challenges in court, which could impact our ability to obtain or seek to work around orphan exclusivity and might affect our ability to retain orphan exclusivity that the FDA previously has recognized for our product candidates. The FDA and legislators may further reevaluate the Orphan Drug Act and its regulations and policies. We do not know if, when, or how the FDA may change the orphan drug regulations and policies in the future, and it is uncertain how any changes might affect our business. Depending on what changes the FDA may make to its orphan drug regulations and policies, our business could be adversely impacted.

A Fast Track designation by the FDA, even if granted for any of our current or future product candidates, may not lead to a faster development or regulatory review or approval process, and does not increase the likelihood that our product candidates will receive marketing approval.

If a drug or biologic is intended for the treatment of a serious or life-threatening condition and the product demonstrates the potential to address unmet medical needs for this condition, the product sponsor may apply for FDA Fast Track designation for a particular indication. We may seek Fast Track designation for certain current or future product candidates, but there is no assurance that the FDA will grant this status to any of our proposed product candidates. Marketing applications filed by sponsors of products in Fast Track development may qualify for priority review under the policies and procedures offered by the FDA, but the Fast Track designation does not assure any such qualification or ultimate marketing approval by the FDA. The FDA has broad discretion whether or not to grant Fast Track designation, so even if we believe a particular product candidate is eligible for this designation, there can be no assurance that the FDA would decide to grant it. Even if we do receive Fast Track designation, we may not experience a faster development process, review or approval compared to conventional FDA procedures, and receiving a Fast Track designation does not provide assurance of ultimate FDA approval. In addition, the FDA may withdraw Fast Track designation if it believes that the designation is no longer supported by data from our clinical development program. In addition, the FDA may withdraw any Fast Track designation at any time.

The Breakthrough Therapy designation by the FDA, even if granted for any of our current or future product candidates, may not lead to a faster development or regulatory review or approval process and it does not increase the likelihood that any of our product candidates will receive marketing approval.

In January 2022, the FDA granted Breakthrough Therapy designation for zipalertinib for the treatment of patients with locally advanced or metastatic NSCLC harboring epidermal growth factor exon 20 insertion mutations who have previously received platinum-based systemic chemotherapy. We may also seek Breakthrough Therapy designation for certain current or future product candidates. A Breakthrough Therapy is defined as a drug or biologic that is intended, alone or in combination with one or more other drugs or biologics, to treat a serious or life-threatening disease or condition and preliminary clinical evidence indicates that the drug or biologic may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints. Sponsors of product candidates that have been designated as Breakthrough Therapies are eligible to receive more intensive FDA guidance on developing an efficient drug development program, an organizational commitment involving senior managers, and eligibility for rolling review and priority review. Drugs and biologics designated as Breakthrough Therapies by the FDA may also be eligible for other expedited approval programs, including accelerated approval.

Designation as a Breakthrough Therapy is within the discretion of the FDA. Accordingly, even if we believe one of our product candidates meets the criteria for designation as a Breakthrough Therapy, the FDA may disagree and instead determine not to make such designation. In any event, the receipt of a Breakthrough Therapy designation for zipalertinib or any other product candidate may not result in a faster development process, review or approval compared to candidate products developed and considered for approval that have not received Breakthrough Therapy designation and does not assure ultimate approval by the FDA. Even though we may seek Breakthrough Therapy designation for some or all of our current or future product candidates for the treatment of various cancers, there can be no assurance that we will receive Breakthrough Therapy designation for such product candidates.

Accelerated approval by the FDA, even if granted for zipalertinib or any other current or future product candidates, may not lead to a faster development or regulatory review or approval process and it does not increase the likelihood that our product candidates will receive marketing approval.

We may seek approval of zipalertinib, and certain of our other current and future product candidates using the FDA's accelerated approval pathway. A product may be eligible for accelerated approval if it treats a serious or life-threatening condition, generally provides a meaningful advantage over available therapies, and demonstrates an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit. As a condition of approval, the FDA requires that a sponsor of a product receiving accelerated approval perform a post-marketing confirmatory clinical trial or trials. These confirmatory trials must be completed with due diligence. 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. The Food and Drug Omnibus Reform Act of 2022 ("FDORA"), enacted on December 29, 2022 as part of the Consolidated Appropriations Act, 2023, includes numerous reforms to the accelerated approval process for drugs and biologics and enables the FDA to require, as appropriate, that a post-approval study be underway prior to granting accelerated approval. FDORA also expands the expedited withdrawal procedures already available to the FDA to allow the agency to use expedited procedures if a sponsor fails to conduct any required post-approval study of the product with due diligence. FDORA also adds the failure of a sponsor of a product approved under accelerated approval to conduct with due diligence any required post-approval study with respect to such product or to submit timely reports with respect to such product to the list of prohibited acts in the FDCA. Even if we do receive accelerated approval, we may not experience a faster development or regulatory review or approval process, and receiving accelerated approval does not provide assurance of ultimate full FDA approval. In connection with the receipt of accelerated approval, we may be required to complete additional confirmatory clinical trials. Conducting such additional confirmatory clinical trials could delay or prevent our ability to receive full approval of our product. Accelerated approval may also be withdrawn if, among other things, a confirmatory trial required to verify the predicted clinical benefit of the product fails to verify such benefit or if such trial is not conducted with due diligence.

If approved, our investigational products regulated as biologics may face competition from biosimilars approved through an abbreviated regulatory pathway.

Most of our current product candidates, with the exception of zipalertinib, will be regulated by the FDA as biologics, which must be licensed by the FDA prior to marketing under a BLA. The ACA includes a subtitle called the Biologics Price Competition and Innovation Act of 2009 (the "BPCIA"), which created an abbreviated approval pathway for biologic products that are biosimilar to or interchangeable with an FDA-licensed reference biologic product. Under the BPCIA, a reference biological product is granted 12 years of data exclusivity from the time of first licensure of the product, and the FDA will not accept an application for a biosimilar or interchangeable product based on the reference biological product until four years after the date of first licensure of the reference product. In addition, the approval of a biosimilar product may not be made effective by the FDA until 12 years from the date on which the reference product was first licensed. During this 12-year period of exclusivity, another company may still market a competing version of the reference product if the FDA approves a BLA for the competing product containing the sponsor's own preclinical data and data from adequate and well-controlled clinical trials to demonstrate the safety, purity, and potency of the other company's product. The law is complex and is still being interpreted and implemented by the FDA. As a result, its ultimate impact, implementation, and meaning are subject to uncertainty.

We believe that any of our product candidates approved as a biologic product under a BLA should qualify for the 12-year period of exclusivity. However, there is a risk that this exclusivity could be shortened due to congressional action or otherwise, or that the FDA will not consider our investigational medicines to be reference products for competing products, potentially creating the opportunity for generic competition sooner than anticipated. Moreover, the extent to which a biosimilar, once licensed, will be substituted for any one of our reference products in a way that is similar to traditional generic substitution for non-biologic products is not yet clear, and will depend on a number of marketplace and regulatory factors that are still developing.

If competitors are able to obtain marketing approval for biosimilars referencing our products, our products may become subject to competition from such biosimilars, with the attendant competitive pressure and consequences.

If the FDA or comparable foreign regulatory authorities approve generic versions of any of our small-molecule investigational products that receive marketing approval, or such authorities do not grant our products appropriate periods of exclusivity before approving generic versions of those products, the sales of our products, if approved, could be adversely affected.

Once an NDA is approved, the product covered thereby becomes a “reference listed drug” in the FDA’s publication, “Approved Drug Products with Therapeutic Equivalence Evaluations,” commonly known as the Orange Book. Manufacturers may seek approval of generic versions of reference listed drugs through submission of abbreviated new drug applications (“ANDAs”), in the U.S. In support of an ANDA, a generic manufacturer need not conduct clinical trials to assess safety and efficacy. Rather, the applicant generally must show that its product has the same active ingredient(s), dosage form, strength, route of administration and conditions of use or labelling as the reference listed drug and that the generic version is bioequivalent to the reference listed drug, meaning it is absorbed in the body at the same rate and to the same extent. Generic products may be significantly less costly to bring to market than the reference listed drug and companies that produce generic products are generally able to offer them at lower prices. Thus, following the introduction of a generic drug, a significant percentage of the sales of any branded product or reference listed drug is typically lost to the generic product.

The FDA may not approve an ANDA for a generic product until any applicable period of non-patent exclusivity for the reference listed drug has expired. The FDCA provides a period of five years of non-patent exclusivity for a new drug containing a new chemical entity. Specifically, in cases where such exclusivity has been granted, an ANDA may not be submitted to the FDA until the expiration of five years unless the submission is accompanied by a Paragraph IV certification that a patent covering the reference listed drug is either invalid or will not be infringed by the generic product, in which case the applicant may submit its application four years following approval of the reference listed drug.

Generic drug manufacturers may seek to launch generic products following the expiration of any applicable exclusivity period we obtain if our products are approved, even if we still have patent protection for such products. Competition that our products could face from generic versions of our products could materially and adversely affect our future revenue, profitability, and cash flows and substantially limit our ability to obtain a return on the investments we have made in those product candidates.

Obtaining and maintaining regulatory approval of our product candidates in one jurisdiction does not mean that we will be successful in obtaining regulatory approval of our product candidates in other jurisdictions.

Obtaining and maintaining regulatory approval of our product candidates in one jurisdiction does not guarantee that we will be able to obtain or maintain regulatory approval in any other jurisdiction, while a failure or delay in obtaining regulatory approval in one jurisdiction may have a negative effect on the regulatory approval process in others. For example, even if the FDA grants marketing approval of a product candidate, comparable regulatory authorities in foreign jurisdictions must also approve the manufacturing, marketing, and promotion of the product candidate in those countries. Approval procedures vary among jurisdictions and can involve requirements and administrative review periods different from, and greater than, those in the U.S., including additional preclinical studies or clinical trials as clinical trials conducted in one jurisdiction may not be accepted by regulatory authorities in other jurisdictions. In many jurisdictions outside the U.S., a product candidate must be approved for reimbursement before it can be approved for sale in that jurisdiction. In some cases, the price that we intend to charge for our products is also subject to approval.

We may also submit marketing applications in other countries. Regulatory authorities in jurisdictions outside of the U.S. have requirements for approval of product candidates with which we must comply prior to marketing in those jurisdictions. Obtaining foreign regulatory approvals and compliance with foreign regulatory requirements could result in significant delays, difficulties, and costs for us and could delay or prevent the introduction of our products in certain countries. If we fail to comply with the regulatory requirements in international markets and/or receive applicable marketing approvals, our target market will be reduced and our ability to realize the full market potential of our product candidates will be harmed.

Even if we receive regulatory approval of our product candidates, we will be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense and we may be subject to penalties if we fail to comply with regulatory requirements or experience unanticipated problems with our product candidates.

Any product candidate for which we obtain marketing approval will be subject to extensive and ongoing regulatory requirements governing, among other things, the research, development, testing, manufacturing, labeling, packaging, distribution, storage, advertising, promotion, import, export, recordkeeping, monitoring, and reporting of our products. These requirements include submissions of safety and other post-marketing information and reports, facility registration and drug listing requirements, as well as continued compliance with cGMPs, good laboratory practices, regulations, and GCPs, for any clinical trials that we conduct post-approval. Even if marketing approval of a product candidate is granted, the approval may be subject to limitations on the indicated uses for which the product may be marketed or to the conditions of approval, or contain requirements for costly post-marketing testing and surveillance to monitor the safety or efficacy of the product.

The FDA may require a REMS, in order to approve our product candidates, which could entail requirements for a medication guide, physician communication plans or additional elements to ensure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. Later discovery of previously unknown problems with our product candidates, 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 our product candidates, withdrawal of the product from the market or voluntary or mandatory product recalls;
- manufacturing delays and supply disruptions where regulatory inspections identify observations of noncompliance requiring remediation;
- revisions to the labeling, including limitation on approved uses or the addition of additional warnings, contraindications or other safety information, including boxed warnings;
- imposition of a REMS, which may include distribution or use restrictions;
- requirements to conduct additional post-market clinical trials to assess the safety of the product;
- 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 suspension or revocation of approvals;
- product seizure or detention, or refusal to permit the import or export of our product candidates; and
- injunctions or the imposition of civil or criminal penalties.

The FDA's and other regulatory authorities' policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the U.S. 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.

The FDA and other regulatory agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses.

The FDA and other regulatory agencies closely regulate the post-approval marketing and promotion of products to ensure that they are marketed only for the approved indications and in accordance with the provisions of the approved labeling. The FDA and other regulatory agencies impose stringent restrictions on manufacturers' communications regarding off-label use. If any of our product candidates are approved and we are found to have promoted such off-label uses, we may become subject to significant liability. The federal government has levied large civil and criminal fines against companies for alleged improper promotion of off-label use and has enjoined several companies from engaging in off-label promotion. Violation of the FDCA, and other statutes, including the False Claims Act (the "FCA") and equivalent legislation in other countries relating to the promotion and advertising of prescription products may also lead to investigations or allegations of violations of federal and state and other countries' health care fraud and abuse laws and state consumer protection laws. Even if it is later determined we were not in violation of these laws, we may be faced with negative publicity, incur significant expenses defending our actions and have to divert significant management resources from other matters.

Inadequate funding for the FDA, the SEC and other government agencies, including from government shut downs, or other disruptions to these agencies' operations, could hinder their ability to hire and retain key leadership and other personnel, prevent new products and services from being developed or commercialized in a timely manner or otherwise prevent those agencies from performing normal business functions on which the operation of our business may rely, which could negatively impact our business.

The ability of the FDA to review and approve new products can be affected by a variety of factors, including government budget and funding levels, ability to hire and retain key personnel and accept the payment of user fees, and statutory, regulatory and policy changes. Disruptions at the FDA and other agencies may also slow the time necessary for new product candidates to be reviewed and/or approved by necessary government agencies, which would adversely affect our business. For example, over the last several years the U.S. government has shut down several times and certain regulatory agencies, such as the FDA, have had to furlough critical employees and stop critical activities. If a prolonged government shutdown or other disruption occurs, it could significantly impact the ability of the FDA to timely review and process our regulatory submissions, which could have a material adverse effect on our business. Further, future government shutdowns or other disruptions could impact our ability to access the public markets and obtain necessary capital in order to properly capitalize and continue our operations.

Our employees, independent contractors, consultants, commercial partners and vendors may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements which could have a significant adverse impact on our business.

We are exposed to the risk of employee fraud or other illegal activity by our employees, independent contractors, consultants, commercial partners and vendors. Misconduct by these parties could include intentional, reckless and/or negligent conduct that fails to: comply with the regulations of the FDA and other similar foreign regulatory authorities, provide true, complete and accurate information to the FDA and other similar foreign regulatory authorities, comply with manufacturing standards we have established, comply with healthcare fraud and abuse laws in the U.S. and similar foreign fraudulent misconduct laws or report financial information or data accurately or to disclose unauthorized activities to us. If we obtain FDA approval of any of our product candidates and begin commercializing those products in the U.S., our potential exposure under such laws and regulations will increase significantly, and our costs associated with compliance with such laws and regulations are also likely to increase. These laws may impact, among other things, our current activities involving principal investigators and research patients, as well as proposed and future sales, marketing and education programs. We adopted a code of conduct applicable to all of our employees, but it is not always possible to identify and deter employee 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 these 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 significant impact on our business, including the imposition of significant fines or other sanctions.

We are or may become subject to additional healthcare regulation and enforcement by various government entities, and our failure to strictly adhere to these regulatory regimes could have a significant adverse impact on our business.

Pharmaceutical manufacturers and their products are subject to extensive federal and state regulation, including laws intended to prevent fraud and abuse in the healthcare industry. These laws may constrain the business or financial arrangements and relationships through which we conduct business, including how we conduct research regarding, market, sell, and distribute our products. In the U.S., these laws include, but are not limited to the following, some of which are likely to apply only if or when we obtain marketing approval for a product candidate:

- federal false claims, false statements, and civil monetary penalties laws prohibiting, among other things, any person from knowingly presenting, or causing to be presented, a false claim for payment of government funds or knowingly making, or causing to be made, a false statement to get a false claim paid;
- the federal anti-kickback law, which prohibits, among other things, persons from offering, soliciting, receiving, or providing remuneration, directly or indirectly, to induce either the referral of an individual for, or the purchasing or ordering of, a good or service for which payment may be made under federal healthcare programs such as Medicare and Medicaid;
- the federal Health Insurance Portability and Accountability Act of 1996 (“HIPAA”), which, in addition to privacy protections applicable to healthcare providers and other entities, prohibits executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters;
- the FDCA, which among other things, strictly regulates drug marketing, prohibits manufacturers from marketing products prior to approval or for off-label use and regulates the distribution of samples;
- federal laws that require pharmaceutical manufacturers to report certain calculated product prices to the government or provide certain discounts or rebates to government authorities or private entities, often as a condition of reimbursement under government healthcare programs;
- the federal Open Payments (or federal “sunshine” law), which requires pharmaceutical and medical device companies to monitor and report certain financial interactions with certain healthcare providers to the Center for Medicare & Medicaid Services within the U.S. Department of Health and Human Services for re-disclosure to the public, as well as ownership and investment interests held by physicians and their immediate family members;
- federal consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm consumers;
- analogous state laws and regulations, including state anti-kickback and false claims laws, consumer protection and unfair competition laws and laws governing privacy, security and breaches of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts; and

- state laws that require pharmaceutical companies to comply with specific compliance standards, restrict financial interactions between pharmaceutical companies and healthcare providers, report drug product pricing information, financial interactions with health care providers, or marketing expenditures and/or require the registration of pharmaceutical sales representatives.

Ensuring compliance is time-consuming and costly. Given the breadth of the laws and regulations, limited guidance for certain laws and regulations and evolving government interpretations of the laws and regulations, governmental authorities may possibly conclude that our business practices are non-compliant. Any action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. If our operations are found to be in violation of any of the laws described above or any other government regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines, exclusion from participation in government healthcare programs, such as Medicare and Medicaid, imprisonment, and the curtailment or restructuring of our operations, any of which could adversely affect our business, financial condition, results of operations, and prospects.

Outside the U.S., our activities may also be subject to extensive regulation, including anti-kickback and false claims laws. The provision of benefits or advantages to physicians to induce or encourage the prescription, recommendation, endorsement, purchase, supply, order or use of medicinal products is also prohibited in the EU. The provision of benefits or advantages to induce or reward improper performance generally is usually governed by the national anti-bribery laws of EU member states, and the Bribery Act 2010 in the UK. Infringement of these laws could result in substantial fines and imprisonment. EU Directive 2001/83/EC, which is the EU Directive governing medicinal products for human use, further provides that, where medicinal products are being promoted to persons qualified to prescribe or supply them, no gifts, pecuniary advantages or benefits in kind may be supplied, offered or promised to such persons unless they are inexpensive and relevant to the practice of medicine or pharmacy. This provision has been transposed into the Human Medicines Regulations 2012 and so remains applicable in the UK despite its departure from the EU. Payments made to physicians in certain EU member states must be publicly disclosed.

Moreover, agreements with physicians often must be the subject of prior notification and approval by the physician's employer, his or her competent professional organization and/or the regulatory authorities of the individual EU member states.

These requirements are provided in the national laws, industry codes or professional codes of conduct, applicable in the EU member states.

Failure to comply with these requirements could result in administrative, civil and criminal penalties, damages, fines, disgorgement, the exclusion from participation in federal and state healthcare programs, individual imprisonment, reputational harm, and the curtailment or restructuring of our operations, as well as additional reporting obligations and oversight if we become subject to a corporate integrity agreement or other agreement to resolve allegations of non-compliance with these laws.

Data collection is governed by restrictive regulations governing the use, processing and cross-border transfer of personal information.

We may be subject to additional data privacy restrictions as we continue to enroll subjects in our ongoing or future clinical trials. The collection, use, storage, disclosure, transfer, or other processing of personal data regarding individuals in the EEA, including personal health data, is subject to the EU General Data Protection Regulation (the "GDPR") which became effective on May 25, 2018. The GDPR is wide-ranging in scope and imposes numerous requirements on companies that are established in the EEA or which are not established in the EEA but collect and use personal data in relation to (i) offering goods or services to, or (ii) monitoring the behavior of, individuals located in the EEA. The GDPR imposes stringent operational requirements for controllers and processors of personal data, including, for example, requirements relating to processing health and other sensitive data, obtaining consent of the individuals to whom the personal data relates, providing information to individuals regarding data processing activities, implementing and maintaining a process to address data subject rights, implementing safeguards to protect the security and confidentiality of personal data, providing notification to data subjects and government authorities of data breaches, and taking certain measures when engaging third-party processors. The GDPR also imposes strict rules on the transfer of personal data to most countries outside the EEA, including the U.S., and permits data protection authorities to impose large penalties for violations of the GDPR, including potential fines of up to €20 million or 4% of annual global revenues, whichever is greater. The GDPR also confers a private right of action on data subjects and consumer associations to lodge complaints with supervisory authorities, seek judicial remedies, and obtain compensation for damages resulting from violations of the GDPR. The GDPR increased our responsibility and potential liability in relation to personal data that we process where such processing is subject to the GDPR, and we may be required to put in place additional mechanisms to ensure compliance with the GDPR, including as implemented by individual countries within the EEA. Compliance with the GDPR will continue to be a rigorous and time-intensive process that may increase our cost of doing business or require us to change our business practices, and despite those efforts, there is a risk that we may be subject to fines and penalties, litigation, and reputational harm in connection with our European data processing activities. Following the UK's exit from the EU, our processing of personal data of persons located in the United Kingdom subjects us to the UK Data Protection Act 2018 and the "UK GDPR" as defined by the Data Protection Act 2018, as amended by the Data Protection, Privacy and Electronic Communications (Amendments etc.) (EU Exit) Regulations 2019 (SI 2019/419) ("UK GDPR"). The UK GDPR imposes similar obligations on data controllers and processors to those found in the GDPR and carries with it fines similar to those of the GDPR.

Recent legal developments in the EU and UK have also created complexity and uncertainty regarding transfers of personal data from the EEA and the UK to the U.S. and other countries. On December 13, 2022, the European Commission published a draft EU-U.S. data adequacy decision which sets out a new framework for transatlantic data flows, but there remains uncertainty as to when the proposed framework will become operational. It is also likely that the proposed framework will be subject to legal challenge. The impact of these developments on the ability to lawfully transfer personal information from the EEA and UK to the U.S. and other countries has led to increased scrutiny on data transfers out of the EEA and UK and may increase our costs of compliance with data privacy legislation.

In addition, several U.S. states have recently enacted or are considering enacting comprehensive privacy legislation. Most notably, California recently enacted the California Consumer Privacy Act (the "CCPA"), which creates new GDPR-like individual privacy rights for California consumers (as defined in the law) and places increased privacy and security obligations on covered businesses handling personal data of California consumers or households. The CCPA requires covered businesses to provide new disclosures to consumers about such businesses' data collection, use and sharing practices, provide such consumers new ways to opt-out of certain sales or sharing of personal information, and provide consumers with additional causes of action in the event of a data security breach. The CCPA went into effect on January 1, 2020, and the California Attorney General commenced enforcement actions for violations on July 1, 2020. Further, the California Privacy Rights Act (the "CPRA"), was passed by California voters on November 3, 2020. The CPRA, which amends the CCPA, creates additional obligations with respect to processing and storing personal information that took effect on January 1, 2023 (with certain provisions having retroactive effect to January 1, 2022). While there are currently exceptions in the CCPA for protected health information that is subject to HIPAA and information collected in research studies, including clinical trials, that are conducted in accordance with certain regulations, we continue to monitor the impact the CCPA may have on our business activities. New data privacy laws have been proposed in more than half of the states in the U.S. and in the U.S. Congress, reflecting a trend toward more stringent privacy legislation in the U.S., which trend may accelerate under the current U.S. presidential administration. The effects of this legislation are potentially far-reaching and may require us to modify our data processing practices and policies and to incur substantial costs and expenses in an effort to comply.

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

Risks Related to Our Intellectual Property

If we are unable to obtain and maintain patent and other intellectual property protection for our current and future product candidates and technology, or if the scope of intellectual property protection obtained is not sufficiently broad, our competitors could develop and commercialize products and technology similar or identical to ours, and our ability to commercialize any of our current or future product candidates or technology may be adversely affected.

Our success depends in large part on our ability to obtain and maintain patent and other intellectual property protection in the U.S. and other countries with respect to our product candidates, their respective components, formulations, combination therapies, methods used to manufacture them and methods of treatment and development that are important to our business, as well as successfully defending these patents against third-party challenges. If we do not adequately protect our intellectual property rights, competitors may be able to erode or negate any competitive advantage we may have, which could harm our business and ability to achieve profitability.

We intend to rely upon a combination of patent applications, confidentiality agreements, trade secret protection and license agreements to protect the intellectual property related to our product candidates and technologies. Any disclosure to, or misappropriation by, third parties of our confidential proprietary information could enable competitors to quickly duplicate or surpass our technological achievements, thus eroding our competitive position in our market. We, or any future partners, collaborators, or licensees, may fail to identify patentable aspects of inventions made in the course of development and commercialization activities before it is too late to obtain patent protection on them. Therefore, we may miss potential opportunities to establish our patent position.

To protect our proprietary position, we have filed or in-licensed, and plan to file or in-license, patents and patent applications in the U.S. and abroad relating to our product candidates that are important to our business. Our ability to stop unauthorized third parties from making, using, selling, offering to sell, or importing our product candidates is dependent upon the extent to which we have rights under valid and enforceable patents or trade secrets that cover these activities. If we are unable to secure or maintain patent protection with respect to any of our current or future product candidates, or any other proprietary products and technology we develop, our business, financial condition, results of operations, and prospects would be materially harmed.

The degree of patent protection we require to successfully compete in the marketplace may be unavailable or severely limited in some cases and may not adequately protect our rights or permit us to gain or keep any competitive advantage. We cannot provide any assurances that any patents we may own, have licensed, or in-license in the future will have, or that any of our patent applications that mature into issued patents will include, claims with a scope sufficient to protect our current and future product candidates or otherwise provide any competitive advantage. In addition, to the extent that we currently or in the future in-license intellectual property, we cannot assure you that those licenses will remain in force. In addition, the laws of foreign countries may not protect our rights to the same extent as the laws of the U.S. Furthermore, patents have a limited lifespan, and the term of any patents we may own or in-license may be inadequate to protect our competitive position of our product candidates or technology for an adequate amount of time. In the U.S., the natural expiration of a patent is generally 20 years after it is filed. Various extensions may be available; however, the life of a patent, and the protection it affords, is limited. Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized.

Even if they are unchallenged, our patent applications, if issued, and any patents we may own or in-license, may not provide us with any meaningful protection or prevent competitors from designing around our patent claims to circumvent any patents we may own or in-license by developing similar or alternative technologies or therapeutics in a non-infringing manner. For example, a third party may develop a competitive therapy that provides benefits similar to one or more of our product candidates but that uses a formulation and/or a device that falls outside the scope of any patent protection we may have in the future. If the patent protection provided by our patent applications or any patents, we may pursue with respect to our product candidates is not sufficiently broad to impede such competition, our ability to successfully commercialize our product candidates could be negatively affected, which would harm our business.

Patent positions of life sciences companies can be uncertain and involve complex factual and legal questions. Changes in either the patent laws or their interpretation in any jurisdiction that we seek patent protection may diminish our ability to protect our inventions, maintain and enforce our intellectual property rights; and, more generally, may affect the value of our intellectual property, including the narrowing of the scope of our patent applications or any patents we may own or in-license.

The patent prosecution process is complex, expensive, time-consuming, and inconsistent across jurisdictions. 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 patent rights at a commercially reasonable cost or in a timely manner. In addition, we may not pursue or obtain patent protection in all relevant markets. It is possible that we will fail to identify important patentable aspects of our research and development efforts in time to obtain appropriate or any patent protection. While we enter into non-disclosure and confidentiality agreements with parties who have access to confidential or patentable aspects of our research and development efforts, including for example, our employees, corporate collaborators, external academic scientific collaborators, CROs, contract manufacturers, consultants, advisors and other third parties, any of these parties may breach the agreements and disclose results before a patent application is filed, thereby endangering our ability to seek patent protection. In addition, publications of discoveries in the scientific and scholarly literature often lag behind the actual discoveries, and patent applications in the U.S. and other jurisdictions are typically not published until 18 months after filing, or in some cases not at all. Consequently, we cannot be certain that we were the first to file for patent protection on the inventions claimed in our patent applications.

It is possible that defects of form in the preparation or filing of our patent applications, or any patents we may own or in-license, may exist or may arise in the future, for example with respect to proper priority claims, inventorship, claim scope, or requests for patent term adjustments. If we or our partners, collaborators, licensees, or licensors fail to establish, maintain, or protect such patents and other intellectual property rights, such rights may be reduced or eliminated. If our partners, collaborators, licensees, or licensors are not fully cooperative or disagree with us as to the prosecution, maintenance or enforcement of any patent rights, such patent rights could be compromised. If there are material defects in the form, preparation, prosecution, or enforcement of our patent applications or patents we may own or in-license, such patents may be invalid and/or unenforceable, and such applications may never result in valid, enforceable patents. Any of these outcomes could impair our ability to prevent competition from third parties, which may have an adverse impact on our business.

Additionally, we cannot be certain that the claims in our patent applications covering composition of matter of our product candidates or technology will be considered patentable by the U.S. Patent and Trademark Office (the "USPTO") or by patent offices in foreign countries, or that the claims in any issued patents we may own or in-license will be considered patentable by courts in the U.S. or foreign countries.

Method of use patents protect the use of a product for the specified method. These types of patents do not prevent a competitor from making and marketing a product that is identical to our product for an indication that is outside the scope of the patented method. Moreover, even if competitors do not actively promote their product for our targeted indications, physicians may prescribe these products "off-label." Although off-label prescriptions may induce or contribute to the infringement of method of use patents, the practice is common and such infringement is difficult to prevent or prosecute.

The patent position of pharmaceutical and biotechnology companies generally is highly uncertain and involves complex legal and factual questions for which many legal principles remain unresolved. In recent years, patent rights have been the subject of significant litigation. As a result, the issuance, scope, validity, enforceability, and commercial value of any rights we may have from our patent applications are highly uncertain. Our patent applications may not result in patents being issued in the U.S. or in other jurisdictions which protect our technology or products, or which effectively prevent others from commercializing competitive technologies and products. Moreover, our ability to obtain and maintain valid and enforceable patents depends on whether the differences between our inventions and the prior art, including our own previously filed patent applications and scientific publications, allow our inventions to be patentable over the prior art. Even if our patent applications issue as patents, third parties could challenge the validity of such patents based on such scientific publications and we could potentially lose valuable patent rights. Further, the scope of the invention claimed in a patent application can be significantly reduced before the patent is issued, and this scope can be reinterpreted after issuance. Even where our patent applications, whether owned or in-licensed, issue as patents, they may not issue in a form that will provide us with any meaningful protection, prevent competitors or other third parties from competing with us, or otherwise provide us with a competitive advantage. Any patents that eventually issue may be challenged, narrowed, or invalidated by third parties. Consequently, we do not know whether any of our product candidates will be protectable or remain protected by valid and enforceable patent rights. Our competitors or other third parties may be able to evade any rights we may have by developing new compounds or alternative technologies or products in a non-infringing manner.

The issuance or grant of a patent is not irrefutable as to its inventorship, scope, validity, or enforceability, and any of our current or future patents, whether owned or in-licensed may be challenged in the courts or patent offices in the U.S. and abroad. Such challenges may result in the patent claims of any such patents being narrowed, invalidated, or held unenforceable, which could limit our ability to stop or prevent us from stopping others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of our technology and products. There may be prior art of which we are not aware that may affect the validity or enforceability of a patent claim. There also may be prior art of which we are aware, but which we do not believe affects the validity or enforceability of a claim, which may, nonetheless, ultimately be found to affect the validity or enforceability of a claim. We may in the future, become subject to a third-party pre-issuance submission of prior art or opposition, derivation, revocation, re-examination, post-grant and *inter partes* review, or interference proceeding and other similar proceedings challenging any rights we may have from our patent applications or the patent rights of others in the USPTO or other foreign patent office, or in declaratory judgment actions or counterclaims. An unfavorable determination in any such submission, proceeding or litigation could reduce the scope of, or invalidate, any rights we may have from our patents or patent applications, allow third parties to commercialize our technology or products and compete directly with us, without payment to us, or extinguish our ability to manufacture or commercialize products without infringing third-party patent rights.

Moreover, some of our intellectual property, may 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. In addition, we or our licensors may need the cooperation of any such co-owners of our owned and in-licensed intellectual property, including patents and patent applications, in order to enforce such intellectual property against third parties, and such cooperation may not be provided to us or our licensors. Any of the foregoing could have a material adverse effect on our competitive position, business, financial conditions, results of operations and prospects.

If we fail to comply with our obligations in any agreements under which we may license intellectual property rights from third parties or otherwise experience disruptions to our business relationships with our licensors, we could lose license rights that are important to our business.

We are currently, and may in the future be, party to license or collaboration agreements with third parties to advance our research or allow commercialization of our product candidates. Our current agreements impose, and we expect that future agreements may impose numerous obligations, such as development, diligence, payment, commercialization, funding, milestone, royalty, sublicensing, insurance, patent prosecution, enforcement and other obligations on us and may require us to meet development timelines, or to exercise commercially reasonable efforts to develop and commercialize licensed products, in order to maintain the licenses. If our licensors conclude that we have materially breached our license agreements they may seek to terminate the license agreements, thereby removing or limiting our ability to develop and commercialize products and technologies covered by these license agreements.

Any termination of these licenses, or if the underlying patents fail to provide the intended exclusivity, could result in the loss of significant rights and could harm our ability to commercialize our product candidates, and competitors or other third parties would have the freedom to seek regulatory approval of, and to market, products identical to ours and we may be required to cease our development and commercialization of certain of our product candidates. Any of the foregoing could have a material adverse effect on our competitive position, business, financial conditions, results of operations, and prospects.

Disputes may also arise between us and our licensors regarding intellectual property subject to a license agreement, including:

- the scope of rights granted under the license agreement and other interpretation-related issues;
- whether and the extent to which our technology and processes infringe, misappropriate or otherwise violate intellectual property rights of the licensor that is not subject to the licensing agreement;
- our right to sublicense patent and other rights to third parties under collaborative development relationships;
- our diligence obligations with respect to the use of the licensed technology in relation to our development and commercialization of our product candidates, and what activities satisfy those diligence obligations;
- the priority of invention of any patented technology; and
- the ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and us and our partners.

In addition, licensing agreements are complex, and certain provisions in such agreements may be susceptible to multiple interpretations. The resolution of any contract interpretation disagreement that may arise could narrow what we believe to be the scope of our rights to the relevant intellectual property or technology, or increase what we believe to be our financial or other obligations under the relevant agreement, either of which could have a material adverse effect on our business, financial condition, results of operations and prospects. For example, we will owe the licensors of CLN-049 and CLN-617 a success fee in the event of a sale or other disposition of the majority of the assets of the development subsidiaries holding these product candidates. These fees will reduce the net proceeds we receive from any such sale or disposition of assets.

Moreover, if disputes over intellectual property prevent or impair our ability to maintain licensing arrangements on acceptable terms, we may be unable to successfully develop and commercialize the affected product candidates, which could have a material adverse effect on our business, financial conditions, 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.

In addition to the protection afforded by our owned and in-licensed patents, we seek to rely on trade secret protection, confidentiality agreements, and license agreements to protect proprietary know-how that is not patentable, processes for which patents are difficult to enforce and any other elements of our product identification, discovery, and development processes, including our differentiated hub-and-spoke business model that involve proprietary know-how, information, or technology that is not covered by patents. Although we require all of our employees, consultants, advisors and any third parties who have access to our proprietary know-how, information, or technology to enter into confidentiality agreements, trade secrets can be difficult to protect, and we have limited control over the protection of trade secrets used by our collaborators and suppliers. We cannot be certain that we have or will 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. Any party with whom we have executed such an agreement may breach that agreement and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive, and time-consuming, and the outcome is unpredictable. Additionally, if the steps taken to maintain our trade secrets are deemed inadequate, we may have insufficient recourse against third parties for misappropriating the trade secret. 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 such third party, or those to whom they communicate such technology or information, from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to or independently developed by a competitor, our business and competitive position could be harmed.

Third-party claims of intellectual property infringement, misappropriation or other violations may be costly and time consuming and may prevent or delay our product identification, discovery and development efforts.

The intellectual property landscape around precision medicine is crowded, and 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 effect on the success of our business. Our commercial success depends upon our ability, or the ability of our third parties, to develop, manufacture, market and sell our current and future product candidates and use our proprietary technologies without infringing, misappropriating or otherwise violating the intellectual property rights of third parties. There is a substantial amount of litigation involving patents and other intellectual property rights in the biotechnology and pharmaceutical industries, as well as administrative proceedings for challenging patents, including derivation, interference, reexamination, *inter partes* review, and post grant review proceedings before the USPTO or oppositions and other comparable proceedings in foreign jurisdictions. We or any of our licensors or strategic partners may be party to, exposed to, or threatened with, future adversarial proceedings or litigation by third parties having patent or other intellectual property rights alleging that our current or future product candidates and/or proprietary technologies infringe, misappropriate or otherwise violate their intellectual property rights. We cannot assure you that our product candidates and other technologies that we have developed, are developing or may develop in the future do not or will not infringe, misappropriate or otherwise violate existing or future patents or other intellectual property rights owned by third parties. Numerous U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in the fields in which we are developing our product candidates. As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that our product candidates may give rise to claims of infringement of the patent rights of others. Moreover, it is not always clear to industry participants, including us, which patents cover various types of drugs, products or their methods of use or manufacture. Thus, because of the large number of patents issued and patent applications filed in our fields, there may be a risk that third parties may allege they have patent rights encompassing our product candidates, technologies, or methods.

If a third party claims that we infringe, misappropriate or otherwise violate its intellectual property rights, we may face a number of issues, including, but not limited to:

- infringement, misappropriation and other intellectual property claims which, regardless of merit, may be expensive and time-consuming to litigate and may divert our management's attention from our core business and may impact our reputation;
- substantial damages for infringement, misappropriation or other violations, which we may have to pay if a court decides that the product candidate or technology at issue infringes, misappropriates or violates the third party's rights, and, if the court finds that the infringement was willful, we could be ordered to pay treble damages and the patent owner's attorneys' fees;
- a court prohibiting us from developing, manufacturing, marketing or selling our current and future product candidates, or from using our proprietary technologies, unless the third party licenses its product rights to us, which it is not required to do, on commercially reasonable terms or at all;
- if a license is available from a third party, we may have to pay substantial royalties, upfront fees and other amounts, and/or grant cross-licenses to intellectual property rights for our products, or the license to us may be non-exclusive, which would permit third parties to use the same intellectual property to compete with us;
- redesigning our product candidates or processes so they do not infringe, misappropriate or violate third-party intellectual property rights, which may not be possible or may require substantial monetary expenditures and time; and
- 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, it could have a substantial adverse effect on the price of our common stock.

Some of our competitors may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. In addition, any uncertainties resulting from the initiation and continuation of any litigation could have a material adverse effect on our ability to raise the funds necessary to continue our operations or could otherwise have a material adverse effect on our business, results of operations, financial condition and prospects. The occurrence of any of the foregoing could have a material adverse effect on our business, financial condition, results of operations or prospects.

We may choose to challenge the patentability of claims in a third party's U.S. patent by requesting that the USPTO review the patent claims in an *ex-parte* re-exam, *inter partes* review or post-grant review proceedings. These proceedings are expensive and may consume our time or other resources. We may choose to challenge a third party's patent in patent opposition proceedings in the European Patent Office (the "EPO") or other foreign patent office. The costs of these opposition proceedings could be substantial, and may consume our time or other resources. If we fail to obtain a favorable result at the USPTO, EPO or other patent office then we may be exposed to litigation by a third party alleging that the patent may be infringed by our product candidates or proprietary technologies.

Third parties may assert that we are employing their proprietary technology without authorization. Patents issued in the U.S. by law enjoy a presumption of validity that can be rebutted only with evidence that is “clear and convincing,” a heightened standard of proof. There may be issued third-party patents of which we are currently unaware with claims to compositions, formulations, methods of manufacture or methods for treatment related to the use or manufacture of our product candidates. Patent applications can take many years to issue. In addition, because some patent applications in the U.S. may be maintained in secrecy until the patents are issued, patent applications in the U.S. and many foreign jurisdictions are typically not published until 18 months after filing, and publications in the scientific literature often lag behind actual discoveries, we cannot be certain that others have not filed patent applications covering our product candidates or technology. If any such patent applications issue as patents, and if such patents have priority over our patent applications or patents we may own or in-license, we may be required to obtain rights to such patents owned by third parties which may not be available on commercially reasonable terms or at all, or may only be available on a non-exclusive basis. There may be currently pending patent applications which may later result in issued patents that may be asserted in infringement claims against our current and future product candidates. It is also possible that patents owned by third parties of which we are aware, but which we do not believe are relevant to our current and future product candidates or other technologies, could be found by a court of competent jurisdiction to be infringed by our product candidates or other technologies. In addition, third parties may obtain patents in the future and claim that use of our technologies infringes upon these patents. Moreover, we may fail to identify relevant patents or incorrectly conclude that a patent is invalid, not enforceable, exhausted, or not infringed by our activities. If any third-party patents were held by a court of competent jurisdiction to cover the manufacturing process of our product candidates, molecules used in or formed during the manufacturing process, or any final product itself, the holders of any such patents may be able to block our ability to commercialize the product candidate unless we obtained a license under the applicable patents, or until such patents expire or they are finally determined to be held invalid or unenforceable. Similarly, if any third-party patent were held by a court of competent jurisdiction to cover aspects of our formulations, processes for manufacture or methods of use, including combination therapy or patient selection methods, the holders of any such patent may be able to block our ability to develop and commercialize the product candidate unless we obtained a license or until such patent expires or is finally determined to be held invalid or unenforceable. In either case, such a license may not be available on commercially reasonable terms or at all. If we are unable to obtain a necessary license to a third-party patent on commercially reasonable terms, or at all, our ability to commercialize our product candidates may be impaired or delayed, which could in turn significantly harm our business.

Parties making claims against us may seek and obtain injunctive or other equitable relief, which could effectively block our ability to further develop and commercialize our product candidates. Defense of these claims, regardless of their merit, could involve substantial litigation expense and would be a substantial diversion of employee resources from our business. In the event of a successful claim of infringement, misappropriation or other violation against us, we may have to pay substantial damages, including treble damages and attorneys’ fees for willful infringement, obtain one or more licenses from third parties, pay royalties or redesign our infringing products, which may be impossible or require substantial time and monetary expenditure. We cannot predict whether any such license would be available at all or whether it would be available on commercially reasonable terms. Furthermore, even in the absence of litigation, we may need or may choose to obtain licenses from third parties to advance our research or allow commercialization of our product candidates. We may fail to obtain any of these licenses at a reasonable cost or on reasonable terms, if at all. In that event, we would be unable to further develop and commercialize our product candidates, which could harm our business significantly.

We may not be successful in obtaining or maintaining necessary rights to product components and processes for our development pipeline through acquisitions and in-licenses.

We own four patent families related to CLN-619. We own six patent families related to CLN-978. We have in-licensed six patent families related to zipalertinib as part of our co-development agreement with Taiho. We have in-licensed one and own another patent family related to CLN-049. We have in-licensed six U.S. patent applications related to CLN-418. We have in-licensed one patent family and own two patent families related to CLN-617.

Because additional product candidates may require the use of proprietary rights held by third parties, the growth of our business will likely depend in part on our ability to acquire, in-license or use these proprietary rights.

Our product candidates may also require specific formulations to work effectively and efficiently, and these rights may be held by others. Similarly, efficient production or delivery of our product candidates may also require specific compositions or methods, and the rights to these may be owned by third parties. We may be unable to acquire or in-license any compositions, methods of use, processes or other third-party intellectual property rights from third parties that we identify as necessary or important to our business operations. We may fail to obtain any of these licenses at a reasonable cost or on reasonable terms, if at all, which would harm our business. We may need to cease use of the compositions or methods covered by such third-party intellectual property rights, and may need to seek to develop alternative approaches that do not infringe on such intellectual property rights which may entail additional costs and development delays, even if we were able to develop such alternatives, which may not be feasible. Even if we are able to obtain a license, it may be nonexclusive, thereby giving our competitors access to the same technologies licensed to us. In such circumstances, we may be required to expend significant time and resources to develop or license replacement technology. Moreover, the molecules that will be used with our product candidates may be covered by the intellectual property rights of others.

Additionally, we sometimes collaborate with academic institutions to accelerate our preclinical research or development under written agreements with these institutions. In certain cases, these institutions provide us with an option to negotiate a license to any of the institution's rights in technology resulting from the collaboration. Regardless of such option, we may be unable to negotiate a license within the specified timeframe or under terms that are acceptable to us. If we are unable to do so, the institution may offer the intellectual property rights to others, potentially blocking our ability to pursue our program and allowing third parties to compete with us. If we are unable to successfully obtain rights to required third-party intellectual property or to maintain the existing intellectual property rights we have, we may have to abandon development of such program and our business and financial condition could suffer.

The licensing and acquisition of third-party intellectual property rights is a competitive area, and companies, which may be more established, or have greater resources than we do, may also be pursuing strategies to license or acquire third-party intellectual property rights that we may consider necessary or attractive in order to commercialize our product candidates. More established companies may have a competitive advantage over us due to their size, cash 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 also may be unable to in-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. There can be no assurance that we will be able to successfully complete such negotiations and ultimately acquire the rights to the intellectual property surrounding the additional product candidates that we may seek to acquire. If we are unable to successfully obtain rights to required third-party intellectual property or to maintain the existing intellectual property rights we have, we may have to abandon development of such program and our business, results of operations, financial condition and prospects could suffer.

We may be involved in lawsuits to protect or enforce our owned or in-licensed intellectual property rights, which could be expensive, time-consuming and unsuccessful.

Competitors may infringe any patents we may own or in-license. In addition, any patents we may own, or in-license may become involved in inventorship, priority, validity or unenforceability disputes. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time-consuming. We may not prevail in any lawsuits that we initiate, and the damages or other remedies awarded, if any, may not be commercially meaningful. In addition, in an infringement proceeding, a court may decide that one or more of any patents we may own or in-license is not valid or is unenforceable or that the other party's use of our technology that may be patented falls under the safe harbor to patent infringement under 35 U.S.C. §271(e)(1). There is also the risk that, even if the validity of these patents is upheld, the court may refuse to stop the other party from using the technology at issue on the grounds that any of our owned or in-licensed patents do not cover the technology in question or that such third party's activities do not infringe our patents. An adverse result in any litigation or defense proceedings could put one or more of our owned or in-licensed patents at risk of being invalidated, held unenforceable, or interpreted narrowly, or could put our patent applications at risk of not issuing. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of employee resources from our business. In the event of a successful claim of infringement against us, we may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, obtain one or more licenses from third parties, pay royalties or redesign our infringing products, which may be impossible or require substantial time and monetary expenditure. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing, or distribution activities. We may not have sufficient financial or other resources to conduct such litigation or proceedings adequately. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources and more mature and developed intellectual property portfolios. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could have a material adverse effect on our ability to compete in the marketplace.

Post-grant proceedings provoked by third parties or brought by the USPTO may be necessary to determine the validity or priority of inventions with respect to our owned or in-licensed patents or patent applications. These proceedings are expensive and an unfavorable outcome could result in a loss of our current patent rights and could require us to cease using the related technology or to attempt to license rights to it from the prevailing party. Our business could be harmed if a party prevailing against us does not offer us a license on commercially reasonable terms. In addition to potential USPTO review proceedings, we may become a party to patent opposition proceedings in the EPO or similar proceedings in other foreign patent offices, where our foreign patents are challenged. The costs of these opposition or similar proceedings could be substantial, and may result in a loss of scope of some claims or a loss of the entire patent. An unfavorable result at the USPTO, EPO or other patent office may result in the loss of our right to exclude others from practicing one or more of our inventions in the relevant country or jurisdiction, which could have a material adverse effect on our business.

Litigation or post-grant proceedings may result in a decision adverse to our interests and, even if we are successful, may result in substantial costs and distract our management and other employees. We may not be able to prevent, misappropriation of our trade secrets or confidential information, particularly in countries where the laws may not protect those rights as fully as in the U.S.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock.

We may not be able to detect infringement against any of our owned or in-licensed patents. Even if we detect infringement by a third party, we may choose not to pursue litigation against or settlement with the third party. If we later sue such third party for patent infringement, the third party may have certain legal defenses available to it, which otherwise would not be available except for the delay between when the infringement was first detected and when the suit was brought. Such legal defenses may make it impossible for us to enforce any patents we may own or in-license against such third party.

Obtaining and maintaining patent protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by governmental patent agencies, and 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 any issued patent are due to be paid to the USPTO and foreign patent agencies in several stages over the lifetime of the patent. The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process and following the issuance of a patent. While an inadvertent lapse can in some cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance 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. Noncompliance events that could result in abandonment or lapse of a patent include, but are not limited to, failure to respond to official actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. In such an event, our competitors might be able to enter the market with similar or identical products or platforms, which could have a material adverse effect on our business prospects and financial condition.

Changes to patent law in the U.S. and in foreign jurisdictions could diminish the value of patents in general, thereby impairing our ability to protect our products.

As is the case with other biopharmaceutical companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biopharmaceutical industry involve both technological and legal complexity, and are therefore costly, time-consuming and inherently uncertain. Recent U.S. Supreme Court rulings have narrowed the scope of patent protection available in certain circumstances and weakened the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on decisions by the U.S. Congress, the federal courts, and the USPTO, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce patents that we might obtain in the future. For example, in the case *Assoc. for Molecular Pathology v. Myriad Genetics, Inc.*, the U.S. Supreme Court held that certain claims to DNA molecules are not patentable. Any adverse changes in the patent laws of other jurisdictions could have a material adverse effect on our business and financial condition. Changes in the laws and regulations governing patents in other jurisdictions could similarly have an adverse effect on our ability to obtain and effectively enforce any rights we may have in our patent applications or any patents we may own or in-license.

Recent or future patent reform legislation could also increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of any patents we may own or in-license. The U.S. has enacted and implemented wide-ranging patent reform legislation. On September 16, 2011, the Leahy-Smith America Invents Act, was signed into law, which includes a number of significant changes to U.S. patent law. These include provisions that affect the way patent applications are prosecuted, redefine prior art, may affect patent litigation, establish a new post-grant review system and switch the U.S. patent system from a “first-to-invent” system to a “first-to-file” system. Under a “first-to-file” system, assuming the other requirements for patentability are met, the first inventor to file a patent application generally will be entitled to a patent on the invention regardless of whether another inventor had made the invention earlier.

We have limited foreign intellectual property rights and may not be able to protect our intellectual property rights throughout the world.

We may not be able to pursue generic coverage of our product candidates outside of the U.S. Filing, prosecuting and defending patents on product candidates in all countries throughout the world would be prohibitively expensive, and intellectual property rights in some countries outside the U.S. can be less extensive than those in the U.S. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the U.S. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the U.S., or from selling or importing products made using our inventions in and into the U.S. or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and further, may export otherwise infringing products to territories where we have patent protection, but where enforcement is not as strong as that in the U.S. These products may compete with our product candidates and in jurisdictions where we do not have any issued patents or patent applications or other intellectual property rights, we may not have effective or sufficient protection to prevent them from competing. Our patent portfolio is at the very early stages of prosecution. We will need to decide whether and in which jurisdictions to pursue protection for the various inventions in our portfolio prior to applicable deadlines.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets and other intellectual property protection, particularly those relating to biopharmaceutical products, which could make it difficult for us to stop the infringement of any patents we may own or in-license or marketing of competing products in violation of our proprietary rights generally. Proceedings to enforce any rights we may have in our patents and patent applications in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put any of our owned or in-licensed patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

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 such patents. If we are forced to grant a license to third parties with respect to any of our owned or in-licensed patents that are relevant to our business, our competitive position may be impaired, and our business, financial condition, results of operations, and prospects may be adversely affected.

We may be subject to claims challenging the inventorship or ownership of any intellectual property, including any patents we may own or in-license.

We may be subject to claims that former employees, collaborators or other third parties have an interest in our owned or in-licensed patents, trade secrets, or other intellectual property as an inventor or co-inventor. For example, we may have inventorship disputes arise from conflicting obligations of employees, consultants or others who are involved in developing our product candidates or other technologies. We generally enter into confidentiality and intellectual property assignment agreements with our employees, consultants, and contractors. These agreements generally provide that inventions conceived by the party in the course of rendering services to us will be our exclusive property. However, those agreements may not be honored and may ineffectively assign intellectual property rights to us. Moreover, there may be some circumstances where we are unable to negotiate for such ownership rights. Disputes regarding ownership or inventorship of intellectual property can also arise in other contexts, such as collaborations and sponsored research. If we are subject to a dispute challenging our rights in or to patents or other intellectual property, such a dispute could be expensive and time consuming. Litigation may be necessary to defend against these and other claims challenging inventorship of any of our owned or in-licensed patents, trade secrets or other intellectual property. If we were unsuccessful, in addition to paying monetary damages, we could lose valuable rights in intellectual property that we regard as our own, such as exclusive ownership of, or right to use, intellectual property that is important to our product candidates and other technologies. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees. Any of the foregoing could have a material adverse effect on our business, financial condition, results of operations and prospects.

We may be subject to claims that our employees, consultants or independent contractors have wrongfully used or disclosed confidential information or alleged trade secrets of third parties or competitors or are in breach of non-competition or non-solicitation agreements with our competitors.

We have received confidential and proprietary information from third parties. In addition, as is common in the biotechnology and pharmaceutical industries, we employ individuals who were previously employed at universities or other biotechnology or pharmaceutical companies, including our competitors or potential competitors, in some cases until recently. We may be subject to claims that we or our employees, consultants or independent contractors have inadvertently or otherwise used or disclosed confidential information or trade secrets of these third parties or our employees' former employers or our consultants' or contractors' current or former clients or customers. In addition, we may become subject to claims that we caused an employee to breach the terms of his or her non-competition or non-solicitation agreement. Litigation or arbitration may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Even if we are successful in defending against such claims, litigation or other legal proceedings relating to intellectual property claims and possible aftermath could result in substantial cost and be a distraction to our management and employees. Any litigation or the threat thereof may adversely affect our ability to hire employees. A loss of key personnel or their work product could hamper or prevent our ability to commercialize product candidates, which could have an adverse effect on our business, results of operations and financial condition. 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, it could have a substantial adverse effect on the price of our common stock. This type of litigation or proceeding could substantially increase our operating losses and reduce our resources available for development activities. We may not have sufficient financial or other resources to adequately conduct such litigation or proceedings. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their substantially greater financial resources. Uncertainties resulting from the initiation and continuation of patent litigation or other intellectual property related proceedings could adversely affect our ability to compete in the marketplace.

If we do not obtain patent term extension and data exclusivity for any of our current or future product candidates we may develop, our business may be materially harmed.

Depending upon the timing, duration and specifics of any FDA marketing approval of any of our current or future product candidates we may develop, one or more U.S. patents we may own or in-license may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984 (the "Hatch-Waxman Amendments"). The Hatch-Waxman Amendments permit a patent term extension of up to five years as compensation for patent term lost during the FDA regulatory review process. A patent term extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval, only one patent may be extended and only those claims covering the approved drug, a method for using it, or a method for manufacturing it may be extended. However, we may not be granted an extension because of, for example, failing to exercise due diligence during the testing phase or regulatory review process, failing to apply within applicable deadlines, failing to apply prior to expiration of relevant patents, or otherwise failing to satisfy applicable requirements. Moreover, the applicable time period or the scope of patent protection afforded could be less than we request. If we are unable to obtain patent term extension or the term of any such extension is shorter than what we request, our competitors may obtain approval of competing products following expiration of any patents that issue from our patent applications, and our business, financial condition, results of operations, and prospects could be materially harmed.

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

Our trademarks or trade names may be challenged, infringed, diluted, circumvented, or declared generic or determined to be infringing on other marks. We intend to rely on both registration and common law protection for our trademarks. 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 need for name recognition by potential partners or customers in our markets of interest. During the trademark registration process, we may receive Office Actions from the USPTO objecting to the registration of our trademark. Although we would be given an opportunity to respond to those objections, we may be unable to overcome such rejections. In addition, in the USPTO and in comparable agencies in many foreign jurisdictions, third parties are given an opportunity to oppose pending trademark applications and/or to seek the cancellation of registered trademarks. Opposition or cancellation proceedings may be filed against our trademarks, and our trademarks may not survive such proceedings. If we are unable to obtain a registered trademark or establish name recognition based on our trademarks and trade names, we may not be able to compete effectively, and our business may be adversely affected.

Risks Related to Our Reliance on Third Parties

We currently rely and expect to continue to rely on the outsourcing of the majority of our development functions to third parties to conduct our preclinical studies and clinical trials. If these third parties do not properly and successfully carry out their contractual duties or meet expected deadlines, we may not be able to obtain regulatory approval of or commercialize our product candidates.

We utilize and depend upon independent investigators and collaborators, such as medical institutions, CROs, CMOs, and strategic partners to conduct and support our preclinical studies and clinical trials under agreements with us and expect to rely on such parties in the future.

We negotiate budgets and contracts with CROs, clinical trial sites and CMOs and we may not be able to do so on favorable terms, which may result in delays to our development timelines and increased costs. We rely heavily on these third parties over the course of our preclinical studies and clinical trials, and we control only certain aspects of their activities. As a result, we have less direct control over the conduct, timing and completion of our preclinical studies and clinical trials and the management of data developed through preclinical studies and clinical trials than would be the case if we relied entirely upon our own staff. Nevertheless, we are responsible for ensuring that each of our studies and trials is conducted in accordance with the applicable protocol, legal and regulatory requirements and scientific standards, and our reliance on third parties does not relieve us of our regulatory responsibilities. We and these third parties are required to comply with good manufacturing, clinical, laboratory practices ("GxPs"), which are regulations and guidelines enforced by the FDA and comparable foreign regulatory authorities for product candidates in clinical development. Regulatory authorities enforce these GxPs through periodic inspections of clinical trial sponsors, principal investigators and clinical trial sites. If we or any of these third parties fail to comply with applicable GxP regulations, the clinical data generated in our clinical trials may be deemed unreliable and the FDA or comparable foreign regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. We cannot assure you that, upon inspection, such regulatory authorities will determine that any of our clinical trials comply with the GxP regulations. In addition, our clinical trials must be conducted with pharmaceutical product produced under GxP regulations and will require a large number of test patients. Our failure or any failure by these third parties to comply with these regulations or to recruit a sufficient number of patients may delay ongoing or planned clinical trials or require us to repeat clinical trials, which would delay the regulatory approval process. Failure by us or by third parties we engage to comply with regulatory requirements can also result in fines, adverse publicity, and civil and criminal sanctions. Moreover, our business may be implicated if any of these third parties violates federal or state fraud and abuse or false claims laws and regulations or healthcare privacy and security laws.

Any third parties conducting our clinical trials are not and will not be our employees and, except for remedies available to us under our agreements with such third parties, we cannot control whether or not they devote sufficient time and resources to our current and future preclinical studies and clinical trials. These third parties may also have relationships with other commercial entities, including our competitors, for whom they may also be conducting clinical trials or other product development activities, which could affect their performance on our behalf. If these third parties do not successfully carry out their contractual duties or obligations or meet expected deadlines, if they need to be replaced or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols or regulatory requirements or for other reasons, our clinical trials may be extended, delayed or terminated and we may not be able to complete development of, obtain regulatory approval of or successfully commercialize our product candidates. As a result, our financial results and the commercial prospects for our product candidates would be harmed, our costs could increase and our ability to generate revenue could be delayed.

Switching or adding third parties to conduct our preclinical studies and clinical trials involves substantial cost and requires extensive time and focus of our management. In addition, there is a natural transition period when a new third party commences work. As a result, delays occur, which can materially impact our ability to meet our desired clinical development timelines.

Additionally, we do not directly control the manufacturing facilities where our product candidates are made, and we must depend on CMOs to make our product candidates according to standards for quality and reliability. We do not own any manufacturing facilities or equipment. We cannot provide assurance that we will be able to obtain qualified contract manufacturing services on reasonable terms. If any CMO with whom we contract fails to perform its obligations or has challenges sourcing raw materials, we may be forced to enter into an agreement with a different CMO, which we may not be able to do on reasonable terms, if at all. In such a scenario, our clinical trials supply could be delayed significantly as we establish alternative supply sources. In some cases, the technical skills required to manufacture our products or product candidates may be unique or proprietary to the original CMO and we may have difficulty, or there may be contractual restrictions prohibiting us from, transferring such skills to a back-up or alternate supplier, or we may be unable to transfer such skills at all. In addition, if we are required to change CMOs for any reason, we will be required to verify that the new CMO maintains facilities and procedures that comply with quality standards and with all applicable regulations. We may need to verify, such as through a manufacturing comparability or bridging study, that any new manufacturing process will produce our product candidate according to the specifications previously submitted to the FDA or another regulatory authority. The delays associated with the verification of a new CMO could negatively affect our ability to advance clinical trials or otherwise develop product candidates or commercialize our products in a timely manner or within budget. Furthermore, a CMO may possess technology related to the manufacture of our product candidate that such CMO owns independently, which may increase our reliance on such CMO or require us to obtain a license from such CMO in order to have another CMO manufacture our product candidates. In addition, changes in manufacturers often involve changes in manufacturing procedures and processes, which could require that we conduct bridging studies between our prior clinical supply used in our clinical trials and that of any new manufacturer. We may be unsuccessful in demonstrating the comparability of clinical supplies which could require us to conduct further additional clinical trials.

In addition to our existing collaborations, we may form or seek additional collaborations or strategic alliances or enter into additional licensing arrangements in the future, and we may not realize the benefits of such collaborations, alliances or licensing arrangements.

As noted above, in June 2022, we completed the sale of our equity interest in Cullinan Pearl, formerly a development subsidiary of the Company, to Taiho for an upfront payment of \$275.0 million. We may receive up to an additional \$130.0 million upon the achievement of certain regulatory milestones related to zipalertinib. There is no guarantee that these milestones will be achieved or that we will receive any of the additional \$130.0 million. In connection with the sale of our equity interest in Cullinan Pearl, we entered into a co-development agreement with an affiliate of Taiho to co-develop and, at our option, co-commercialize zipalertinib in the U.S. Pursuant to the terms of the co-development agreement, we will each equally contribute to the future clinical development costs of zipalertinib in the U.S., and will each receive 50% of any future pre-tax profits from potential U.S. sales of zipalertinib. There is no guarantee that the co-development and co-commercialization will be successful or that we will receive any net profits and we could lose money.

We may form or seek additional strategic alliances, create joint ventures or collaborations, or enter into additional licensing arrangements with third parties that we believe will complement or augment our development and commercialization efforts with respect to our product candidates and any future product candidates that we may develop. Any of these relationships may require us to incur non-recurring and other charges, increase our near and long-term expenditures, issue securities that dilute our existing stockholders or disrupt our management and business.

Further, collaborations involving our product candidates are subject to numerous risks, which may include the following:

- collaborators have significant discretion in determining the efforts and resources that they will apply to a collaboration;
- collaborators may not pursue development and commercialization of our product candidates or may elect not to continue or renew development or commercialization of our product candidates based on clinical trial results, changes in their strategic focus due to the acquisition of competitive products, availability of funding or other external factors, such as a business combination that diverts resources or creates competing priorities;
- collaborators may delay clinical trials, provide insufficient funding for a clinical trial, stop a clinical trial, abandon a product candidate, repeat or conduct new clinical trials or require a new formulation of a product candidate for clinical testing;
- collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with our product candidates;
- a collaborator with marketing and distribution rights to one or more products may not commit sufficient resources to their marketing and distribution;
- collaborators may not properly maintain or defend our intellectual property rights or may use our intellectual property or proprietary information in a way that gives rise to actual or threatened litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to potential liability;
- disputes may arise between us and a collaborator that cause the delay or termination of the research, development or commercialization of our product candidates, or that result in costly litigation or arbitration that diverts management attention and resources;
- collaborations may be terminated and, if terminated, may result in a need for additional capital to pursue further development or commercialization of the applicable product candidates; and
- collaborators may own or co-own intellectual property covering our product candidates that results from our collaborating with them, and in such cases, we would not have the exclusive right to commercialize such intellectual property.

As a result, if we enter into additional collaboration agreements and strategic partnerships or license our product candidates, we may not be able to realize the benefit of such transactions if we are unable to successfully integrate them with our existing operations and company culture, which could delay our timelines or otherwise adversely affect our business. We also cannot be certain that, following a strategic transaction or license, we will achieve the revenue or specific net income that justifies such transaction. Any delays in entering into new collaborations or strategic partnership agreements related to our product candidates could delay the development and commercialization of our product candidates in certain geographies for certain indications, which would harm our business prospects, financial condition and results of operations.

We currently rely and expect to rely in the future on the use of manufacturing suites in third-party facilities or third parties to manufacture our product candidates. Our business could be harmed if we are unable to use third-party manufacturing suites or if the third-party manufacturers fail to provide us with sufficient quantities of our product candidates or fail to do so at acceptable quality levels or prices.

We do not currently own any facility that may be used as our clinical-scale manufacturing and processing facility and must currently rely on outside vendors to manufacture our product candidates. We will need to negotiate and maintain contractual arrangements with these outside vendors for the supply of our product candidates and we may not be able to do so on favorable terms. We have not yet caused our product candidates to be manufactured on a commercial scale and may not be able to do so for any of our product candidates.

Our anticipated reliance on a limited number of third-party manufacturers exposes us to a number of risks, including the following:

- we may be unable to identify manufacturers on acceptable terms or at all because the number of potential manufacturers is limited and the FDA must inspect any manufacturers for cGMP compliance as part of our marketing application;
- a new manufacturer would have to be educated in, or develop substantially equivalent processes for, the production of our current and future product candidates;
- our third-party manufacturers might be unable to timely manufacture our current and future product candidates or produce the quantity and quality required to meet our clinical and commercial needs, if any;
- contract manufacturers may not be able to execute our manufacturing procedures and other logistical support requirements appropriately;
- our future contract manufacturers may not perform as agreed, may not devote sufficient resources to our current and future product candidates or may not remain in the contract manufacturing business for the time required to supply our clinical trials or to successfully produce, store, and distribute our products, if any;
- manufacturers are subject to ongoing periodic unannounced inspection by the FDA and corresponding state agencies, as well as foreign regulatory authorities, to ensure strict compliance with cGMP and other government regulations and corresponding foreign standards and we have no control over third-party manufacturers' compliance with these regulations and standards;
- we may not own, or may have to share, the intellectual property rights to any improvements made by our third-party manufacturers in the manufacturing process for our current and future product candidates;
- our third-party manufacturers could breach or terminate their agreements with us;
- raw materials and components used in the manufacturing process, particularly those for which we have no other source or supplier, may not be available or may not be suitable or acceptable for use due to material or component defects; and
- our contract manufacturers and critical reagent suppliers may be subject to inclement weather, as well as natural or man-made disasters.

Each of these risks could delay or prevent the completion of our clinical trials or the approval of any of our current and future product candidates by the FDA, result in higher costs or adversely impact commercialization of our current and future product candidates. In addition, we will rely on third parties to perform certain specification tests on our product candidates prior to delivery to patients. If these tests are not appropriately done and test data are not reliable, patients could be put at risk of serious harm and the FDA could place significant restrictions on our company until deficiencies are remedied.

Significant non-compliance could also result in the imposition of sanctions, including warning or untitled letters, fines, injunctions, civil penalties, failure of regulatory authorities to grant marketing approvals for our product candidates, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of products, operating restrictions and criminal prosecutions, any of which could damage our reputation and our business.

Additionally, for some of our product candidates, we rely on third parties located in China to manufacture and supply certain raw materials, drug substances, and/or drug products used in our product candidates, and we expect to continue to use such third-party manufacturers for such purposes. A natural disaster, epidemic or pandemic disease outbreak, trade war, political unrest or other event(s) in China or in adjacent geopolitical territories could disrupt the business or operations of our CMOs with whom we conduct business now or in the future. Any disruption in China or in adjacent geopolitical territories that significantly impacts such third parties, including their ability to produce and deliver materials according to our contracts in adequate quantities to meet our needs could impede, delay, limit, or prevent the research and development of our current and future product candidates. In addition, for any activities conducted in China, we are exposed to the possibility of product supply disruption and increased costs in the event of changes in the policies of the U.S. or Chinese governments, political unrest or unstable economic conditions in China. For example, in February 2024, certain U.S. lawmakers called for possible sanctions against the Chinese CMOs, WuXi AppTec and WuXi Biologics (collectively, “WuXi”), over alleged ties to China’s Communist Party and its military. Any unfavorable government policies on international trade, such as export controls, capital controls or tariffs, new legislation or regulations, renegotiation of existing trade agreements, or any retaliatory trade actions due to recent trade tension, may impede, delay, limit, or increase the cost of manufacturing our product candidates including pursuant to any of our manufacturing service arrangements with WuXi. Such events could have an adverse effect on our business, financial condition and results of operations.

The manufacture of drug products, and particularly biologics, is complex and our third-party manufacturers may encounter difficulties in production. If any of our third-party manufacturers encounter such difficulties, our ability to provide supply of our current and future product candidates, if approved, could be delayed or prevented.

Manufacturing drugs, particularly biologics, especially in large quantities, is often complex and may require the use of innovative technologies to handle living cells. Each lot of an approved biologic must undergo thorough testing for identity, strength, quality, purity, potency and stability. Manufacturing biologics requires facilities specifically designed for and validated for this purpose, and sophisticated quality assurance and quality control procedures are necessary. Slight deviations anywhere in the manufacturing process, including filling, labeling, packaging, storage and shipping and quality control and testing, may result in lot failures, product recalls or spoilage. When changes are made to the manufacturing process, we may be required to provide preclinical and clinical data showing the comparable identity, strength, quality, purity or potency of the products before and after such changes. If microbial, viral or other contaminations are discovered at the facilities of our manufacturers, such facilities may need to be closed for an extended period of time to investigate and remedy the contamination, which could delay clinical trials and adversely harm our business.

In addition, there are risks associated with large scale manufacturing for clinical trials or commercial scale including, among others, cost overruns, potential problems with process scale-up, process reproducibility, stability issues, compliance with good manufacturing practices, lot consistency and timely availability of raw materials. Even if we obtain marketing approval for any of our current and future product candidates, there is no assurance that our manufacturers will be able to manufacture the approved product to specifications acceptable to the FDA or other comparable foreign regulatory authorities, to produce it in sufficient quantities to meet the requirements for the potential commercial launch of the product or to meet potential future demand. If our manufacturers are unable to produce sufficient quantities for clinical trials or for commercialization, our development and commercialization efforts would be impaired, which would have an adverse effect on our business, financial condition, results of operations and growth prospects.

If our third-party manufacturers use hazardous and biological materials in a manner that causes injury or violates applicable law, we may be liable for damages.

Our research and development activities involve the controlled use of potentially hazardous substances, including chemical and biological materials, by our third-party manufacturers. Our manufacturers are subject to federal, state and local laws and regulations in the U.S. governing the use, manufacture, storage, handling and disposal of medical and hazardous materials. Although we believe that our manufacturers’ procedures for using, handling, storing and disposing of these materials comply with legally prescribed standards, we cannot completely eliminate the risk of contamination or injury resulting from medical or hazardous materials. As a result of any such contamination or injury, we may incur liability or local, city, state or federal authorities may curtail the use of these materials and interrupt our business operations. In the event of an accident, we could be held liable for damages or penalized with fines, and the liability could exceed our resources. We do not have any insurance for liabilities arising from medical or hazardous materials. Compliance with applicable environmental laws and regulations is expensive, and current or future environmental regulations may impair our research, development and production efforts, which could harm our business, prospects, financial condition or results of operations.

Risks Related to Managing Growth and Employee Matters

We are highly dependent on our key personnel. If we are not successful in retaining highly qualified personnel, we may not be able to successfully implement our business strategy.

Our ability to compete in the highly competitive biotechnology and pharmaceutical industries depends upon our ability to retain highly qualified managerial, scientific and medical personnel. We are highly dependent on our senior management, including scientific and medical personnel, and other key employees. While we expect to engage in an orderly transition process as we integrate newly appointed officers and managers, we face a variety of risks and uncertainties relating to management transition, including diversion of management attention from business concerns, failure to retain other key personnel or loss of institutional knowledge. In addition, the loss of the services of any of our executive officers, other key employees, and other scientific and medical advisors, and an inability to find suitable replacements could result in delays in product development and harm our business. In particular, due to our small number of employees, the loss of one employee may have a larger impact on our business than compared to a loss at one of our peers.

We conduct our operations at our facilities in Cambridge, Massachusetts. The Massachusetts region is headquarters to many other biopharmaceutical companies and many academic and research institutions. Competition for skilled personnel in our market is intense and may limit our ability to hire and retain highly qualified personnel on acceptable terms or at all. Changes to U.S. immigration and work authorization laws and regulations, including those that restrain the flow of scientific and professional talent, can be significantly affected by political forces and levels of economic activity. Our business may be materially adversely affected if legislative or administrative changes to immigration or visa laws and regulations impair our hiring processes and goals or projects involving personnel who are not U.S. citizens.

To encourage valuable employees to remain at our company, in addition to salary and cash incentives, we have provided equity that vests over time. The value to employees of stock options that vest over time may be significantly affected by movements in our stock price that are beyond our control and may at any time be insufficient to counteract more lucrative offers from other companies. Despite our efforts to retain valuable employees, members of our management, scientific, and development teams may terminate their employment with us on short notice. Although we have employment agreements with our key employees, these employment agreements provide for at-will employment, which means that any of our employees could leave our employment at any time, with or without notice. Our success also depends on our ability to continue to attract, retain, and motivate highly skilled junior, mid-level and senior managers as well as junior, mid-level and senior scientific and medical personnel.

We will need to grow the size of our organization, and we may experience difficulties in managing this growth.

As of December 31, 2023, we had 85 full-time employees. As our development and commercialization plans and strategies develop, we expect to need additional managerial, operational, sales, marketing, financial and other personnel. Future growth would impose significant added responsibilities on members of management, including:

- identifying, recruiting, integrating, maintaining and motivating additional employees;
- managing our internal development efforts effectively, including the clinical and FDA review process for our product candidates, while complying with our contractual obligations to contractors and other third parties; and
- improving our operational, financial and management controls, reporting systems and procedures.

Our future financial performance and our ability to commercialize our current and future product candidates that are approved for marketing will depend, in part, on our ability to effectively manage any future growth, and our management may also have to divert a disproportionate amount of its attention away from day-to-day activities in order to devote a substantial amount of time to managing these growth activities.

If we are not able to effectively expand our organization by hiring new employees and expanding our groups of consultants and contractors, we may not be able to successfully implement the tasks necessary to further develop and potentially commercialize our current and future product candidates and, accordingly, may not achieve our research, development and commercialization goals.

Our internal computer systems, or those used by our third-party CROs or other contractors or consultants, may fail or suffer security breaches, which could result in a material disruption to the development programs of our current and future product candidates.

Despite the implementation of security measures, our internal computer systems and those of our current and future CROs and other contractors and consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, and telecommunication and electrical failures. While we have not experienced any such material system failure or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our development programs and our business operations. For example, the loss of data from completed or future preclinical studies and clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. Likewise, we rely on third parties for the manufacture of our product candidates and to conduct clinical trials, and similar events relating to their computer systems could also have a material adverse effect on our business. To the extent that any disruption or security breach were to result in a loss of, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability and the further development and commercialization of our product candidates could be delayed.

We may be unable to adequately protect our information systems from cyberattacks, which could result in the disclosure of confidential or proprietary information, including personal data, damage our reputation, and subject us to significant financial and legal exposure.

We rely on information technology systems that we or our third-party providers operate to process, transmit and store electronic information in our day-to-day operations. In connection with our product discovery efforts, we may collect and use a variety of personal data, such as name, mailing address, email addresses, phone number and clinical trial information. A successful cyberattack could result in the theft or destruction of intellectual property, data, or other misappropriation of assets, or otherwise compromise our confidential or proprietary information and disrupt our operations. Cyberattacks are increasing in their frequency, sophistication and intensity, and have become increasingly difficult to detect. We also continue to provide for remote work for our employees, which may increase our vulnerability to cyber and other information technology risks. Cyberattacks could include wrongful conduct by hostile foreign governments, industrial espionage, wire fraud and other forms of cyber fraud, the deployment of harmful malware, denial-of-service, social engineering fraud or other means to threaten data security, confidentiality, integrity and availability. A successful cyberattack could cause serious negative consequences for us, including, without limitation, the disruption of operations, the misappropriation of confidential business information, including financial information, trade secrets, financial loss and the disclosure of corporate strategic plans. Although we devote resources to protect our information systems, we realize that cyberattacks are a threat, and there can be no assurance that our efforts will prevent information security breaches that would result in business, legal, financial or reputational harm to us, or would have a material adverse effect on our results of operations and financial condition. Any failure to prevent or mitigate security breaches or improper access to, use of, or disclosure of our clinical data or patients' personal data could result in significant liability under state (e.g., state breach notification laws), federal (e.g., HIPAA, as amended by HITECH), and international law (e.g., the GDPR) and may cause a material adverse impact to our reputation, affect our ability to conduct new studies and potentially disrupt our business. For example, the loss of clinical trial data from completed or ongoing or planned clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. In some cases, data cannot be reproduced. To the extent that any disruption or security breach was to result in a loss of or damage to our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur material legal claims and liability, damage to our reputation, and the further development of our devices and drugs or any future product candidate could be delayed. If a security breach results in the exposure or unauthorized disclosure of personal information, we could incur additional costs associated with data breach notification and remediation expenses, investigation costs, regulatory penalties and fines, and legal proceedings. Our insurance coverage may not be adequate to cover all the costs related to such breaches or attacks.

In addition, the computer systems of various third parties on which we rely, including our CROs and other contractors, consultants and law and accounting firms, may sustain damage from computer viruses, unauthorized access, data breaches, phishing attacks, cybercriminals, natural disasters (including hurricanes and earthquakes), terrorism, war and telecommunication and electrical failures. We rely on our third-party providers to implement effective security measures and identify and correct for any such failures, deficiencies or breaches. If we or our third-party providers fail to maintain or protect our information technology systems and data integrity effectively or fail to anticipate, plan for or manage significant disruptions to our information technology systems, we or our third-party providers could have difficulty preventing, detecting and controlling such cyber-attacks and any such attacks could result in losses described above as well as disputes with physicians, patients and our partners, regulatory sanctions or penalties, increases in operating expenses, expenses or lost revenues or other adverse consequences, any of which could have a material adverse effect on our business, results of operations, financial condition, prospects and cash flows. Any failure by such third parties to prevent or mitigate security breaches or improper access to or disclosure of such information could have similarly adverse consequences for us. If we are unable to prevent or mitigate the impact of such security or data privacy breaches, we could be exposed to litigation and governmental investigations, which could lead to a potential disruption to our business.

Risks Related to Ownership of Our Common Stock

The price of our stock may be volatile, and you could lose all or part of your investment.

The trading price of our common stock is likely to be highly volatile and could be subject to wide fluctuations in response to various factors, some of which are beyond our control, including limited trading volume. In addition to the factors discussed in this “Risk Factors” section and elsewhere in this Annual Report on Form 10-K, these factors include:

- the results of our ongoing, planned or any future preclinical studies, clinical trials or clinical development programs;
- the commencement, enrollment, or results of clinical trials of our current and future product candidates, or changes in the development status of our product candidates;
- adverse results or delays in preclinical studies and clinical trials, including as a result of clinical holds;
- our decision to initiate a clinical trial, not to initiate a clinical trial, or to terminate an existing clinical trial;
- any delay in our regulatory filings or any adverse regulatory decisions, including failure to receive regulatory approval of our current and future product candidates;
- changes in laws or regulations applicable to our products, including but not limited to clinical trial requirements for approvals;
- adverse developments concerning our manufacturers or our manufacturing plans;
- our inability to obtain adequate product supply for any licensed product or inability to do so at acceptable prices;
- our inability to establish collaborations if needed;
- our failure to commercialize our current and future product candidates;
- additions or departures of key scientific or management personnel;
- unanticipated serious safety concerns related to the use of our current and future product candidates;
- introduction of new products or services offered by us or our competitors;
- announcements of significant acquisitions, strategic partnerships, joint ventures or capital commitments by us or our competitors;
- our ability to effectively manage our growth;
- the size and growth of our initial cancer target markets;
- our ability to successfully treat additional types of cancers or at different stages;
- actual or anticipated variations in quarterly operating results;
- our cash position;
- our failure to meet the estimates and projections of the investment community or that we may otherwise provide to the public;

- publication of research reports about us or our industry, or immunotherapy in particular, or positive or negative recommendations or withdrawal of research coverage by securities analysts;
- changes in the market valuations of similar companies;
- overall performance of the equity markets;
- sales of our common stock by us or our stockholders in the future;
- trading volume of our common stock;
- changes in accounting practices;
- ineffectiveness of our internal controls;
- disputes or other developments relating to intellectual property or proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our technologies;
- significant lawsuits, including intellectual property or stockholder litigation;
- general political and economic conditions; and
- other events or factors, many of which are beyond our control.

In addition, the stock market in general, and The Nasdaq Global Select Market and market for biopharmaceutical companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these companies. Broad market and industry factors may negatively affect the market price of our common stock, regardless of our actual operating performance. In the past, securities class action litigation has often been instituted against companies following periods of volatility in the market price of a company's securities. This type of litigation, if instituted, could result in substantial costs and a diversion of management's attention and resources, which would harm our business, financial condition, results of operation and future prospects.

We expect our financial condition and results of operations to continue to fluctuate significantly from quarter to quarter and year to year due to a variety of factors, many of which are beyond our control. Accordingly, you should not rely upon the results of any quarterly or annual periods as indications of future operating performance.

We do not intend to pay dividends on our common stock, so any returns will be limited to the value of our stock.

We currently anticipate that we will retain future earnings for the development, operation, and expansion of our business and do not anticipate declaring or paying any cash dividends for the foreseeable future. In addition, we may enter into agreements that prohibit us from paying cash dividends without prior written consent from our contracting parties, or which other terms prohibiting or limiting the amount of dividends that may be declared or paid on our common stock. Any return to stockholders will therefore be limited to the appreciation of their stock, which may never occur.

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

Our executive officers, directors, and 5% stockholders beneficially owned approximately 53.8% of our voting stock, based on 44,108,892 shares of our common stock deemed to be outstanding as of December 31, 2023, which assumes conversion of 1,208,809 shares of outstanding Series A convertible preferred stock into shares of common stock. These stockholders have the ability to influence us through their ownership position. Accordingly, these stockholders may be able to determine all matters requiring stockholder approval. For example, these stockholders may be able to control elections of directors, amendments of our organizational documents, or approval of any merger, sale of assets, or other major corporate transaction. This may prevent or discourage unsolicited acquisition proposals or offers for our common stock that you may feel are in your best interest as one of our stockholders.

We are an emerging growth company and a smaller reporting company, and we cannot be certain if the reduced reporting requirements applicable to emerging growth companies and smaller reporting companies will make our common stock less attractive to investors.

We are an emerging growth company, as defined in the Jumpstart Our Business Startups Act (the "JOBS Act"), enacted in April 2012. 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 of 2002 (as amended, the "Sarbanes-Oxley Act"), reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and exemptions from the requirements of holding nonbinding advisory votes on executive compensation and stockholder approval of any golden parachute payments not previously approved. We will remain an emerging growth company until the earlier of (1) the last day of the fiscal year (a) following the fifth anniversary of the closing of our initial public offering, (b) in which we have total annual gross revenue of at least \$1.235 billion or (c) in which we are deemed to be a large accelerated filer, which requires the market value of our common stock that is held by non-affiliates to exceed \$700 million as of the last business day of the most recently completed second fiscal quarter, and (2) the date on which we have issued more than \$1 billion in non-convertible debt during the prior three-year period.

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 not "opt out" of this exemption from complying with new or revised accounting standards and, therefore, we will adopt new or revised accounting standards at the time private companies adopt the new or revised accounting standard and will do so until such time that we either (i) irrevocably elect to "opt out" of such extended transition period or (ii) no longer qualify as an emerging growth company.

Even after we no longer qualify as an emerging growth company, we may still qualify as a "smaller reporting company," which would allow us to continue 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 of the Sarbanes-Oxley Act and reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements. We may take advantage of scaled disclosures available to smaller reporting companies until the fiscal year following the determination that either (i) the market value of our voting and non-voting common stock held by non-affiliates is greater than \$700 million, as measured on the last business day of the most recently completed second fiscal quarter, or (ii) the market value of our voting and non-voting common stock held by non-affiliates, as measured on the last business day of our most recently completed second fiscal quarter, is less than \$700 million but greater than \$250 million and our annual revenues during our most recently completed fiscal year are greater than \$100 million. 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 stock price may be more volatile.

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

Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, if a corporation undergoes an "ownership change" (generally defined as a greater than 50% change (by value) in its equity ownership by 5% stockholders over a three-year period), the corporation's ability to use its pre-change net operating loss ("NOL") carryforwards and other pre-change tax attributes to offset its post-change taxable income may be limited. As a result of our most recent private placements and other transactions that have occurred over the past three years, we may have experienced, and may experience, an "ownership change." We may also experience ownership changes in the future as a result of subsequent shifts in our stock ownership. As of December 31, 2023, we had U.S. federal and state NOL carryforwards of \$54.3 million and \$56.8 million, respectively, which could be limited if we experience an "ownership change." As of December 31, 2023, \$52.9 million of our federal NOLs can be carried forward indefinitely and \$1.4 million, which were generated prior to 2018, expire in 2037. As of December 31, 2023, state NOL carryforwards begin to expire in 2031. As of December 31, 2023, we had federal and state research and development tax credit carryforwards of \$1.6 million and \$2.0 million, respectively, which could be limited if we experience an "ownership change." As of December 31, 2023, our federal research and development tax credit carryforwards begin to expire in 2036, \$0.3 million of our state research and development tax credit carryforwards can be carried forward indefinitely, and the remaining \$1.7 million of our state research and development tax credit carryforwards expires beginning in 2036. The reduction of the corporate tax rate under the Tax Cuts and Jobs Act of 2017 (the "TCJA"), may cause a reduction in the economic benefit of our NOL carryforwards and other deferred tax assets available to us. Under the TCJA, federal NOLs generated after December 31, 2017 will not be subject to expiration but will not be permitted to be carried back. In addition, under the TCJA, the amount of post-2017 NOLs that we are permitted to deduct in any taxable year is limited to 80% of our taxable income in such year, where taxable income is determined without regard to the NOL deduction itself.

Anti-takeover provisions under our charter documents and Delaware law could delay or prevent a change of control, which could limit the market price of our common stock and may prevent or frustrate attempts by our stockholders to replace or remove our current management.

Our second amended and restated certificate of incorporation and second amended and restated bylaws contain provisions that could delay or prevent a change of control of our company or changes in our board of directors that our stockholders might consider favorable. Some of these provisions include:

- a board of directors divided into three classes serving staggered three-year terms, such that not all members of the board will be elected at one time;
- a prohibition on stockholder action through written consent, which requires that all stockholder actions be taken at a meeting of our stockholders;
- a requirement that special meetings of stockholders be called only by the board of directors acting pursuant to a resolution approved by the affirmative vote of a majority of the directors then in office;
- advance notice requirements for stockholder proposals and nominations for election to our board of directors;
- a requirement that no member of our board of directors may be removed from office by our stockholders except for cause and, in addition to any other vote required by law, upon the approval of not less than two-thirds of all outstanding shares of our voting stock then entitled to vote in the election of directors;
- a requirement of approval of not less than two-thirds of all outstanding shares of our voting stock to amend any bylaws by stockholder action or to amend specific provisions of our certificate of incorporation; and
- the authority of the board of directors to issue preferred stock on terms determined by the board of directors without stockholder approval and which preferred stock may include rights superior to the rights of the holders of common stock.

In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporate Law, which may prohibit certain business combinations with stockholders owning 15% or more of our outstanding voting stock. These anti-takeover provisions and other provisions in our second amended and restated certificate of incorporation and second amended and restated bylaws could make it more difficult for stockholders or potential acquirers to obtain control of our board of directors or initiate actions that are opposed by the then-current board of directors and could also delay or impede a merger, tender offer, or proxy contest involving our company. These provisions could also discourage proxy contests and make it more difficult for you and other stockholders to elect directors of your choosing or cause us to take other corporate actions you desire. Any delay or prevention of a change of control transaction or changes in our board of directors could cause the market price of our common stock to decline.

Our second amended and restated bylaws designate specific courts as the exclusive forum for certain litigation that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us.

Pursuant to our second amended and restated bylaws, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for state law claims for (1) any derivative action or proceeding brought on our behalf; (2) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers, or other employees to us or our stockholders; (3) any action asserting a claim arising pursuant to any provision of the Delaware General Corporation Law or our certificate of incorporation or bylaws; (4) any action to interpret, apply, enforce or determine the validity of our certificate of incorporation or bylaws; or (5) any action asserting a claim governed by the internal affairs doctrine, or the Delaware Forum Provision. The Delaware Forum Provision will not apply to any causes of action arising under the Securities Act or the Exchange Act. Our second amended and restated bylaws will further provide that unless we consent in writing to the selection of an alternative forum, the U.S. District Court for the District of Delaware will be the sole and exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act, or the Federal Forum Provision, as the Company is incorporated in the State of Delaware. In addition, our second amended and restated bylaws will provide that any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock will be deemed to have notice of and consented to the Delaware Forum Provision and the Federal Forum Provision; provided, however, that stockholders cannot and will not be deemed to have waived our compliance with the U.S. federal securities laws and the rules and regulations thereunder.

The Delaware Forum Provision and the Federal Forum Provision in our second amended and restated bylaws may impose additional litigation costs on stockholders in pursuing any such claims. Additionally, these forum selection clauses may limit our stockholders' ability to bring a claim in a judicial forum that they find favorable for disputes with us or our directors, officers or employees, which may discourage the filing of lawsuits against us and our directors, officers and employees, even though an action, if successful, might benefit our stockholders. In addition, while the Delaware Supreme Court ruled in March 2020 that federal forum selection provisions purporting to require claims under the Securities Act be brought in federal court are "facially valid" under Delaware law, there is uncertainty as to whether other courts will enforce our Federal Forum Provision. If the Federal Forum Provision is found to be unenforceable, we may incur additional costs associated with resolving such matters. The Federal Forum Provision may also impose additional litigation costs on stockholders who assert that the provision is not enforceable or invalid. The Court of Chancery of the State of Delaware and the U.S. District Court for the District of Delaware may also reach different judgments or results than would other courts, including courts where a stockholder considering an action may be located or would otherwise choose to bring the action, and such judgments may be more or less favorable to us than our stockholders.

If we fail to establish and maintain proper and effective internal control over financial reporting, our operating results and our ability to operate our business could be harmed.

Ensuring that we have adequate internal financial and accounting controls and procedures in place so that we can produce accurate financial statements on a timely basis is a costly and time-consuming effort that needs to be re-evaluated frequently. Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with generally accepted accounting principles.

Implementing any appropriate changes to our internal controls may distract our officers and employees, entail substantial costs to modify our existing processes, and take significant time to complete. These changes may not, however, be effective in maintaining the adequacy of our internal controls, and any failure to maintain that adequacy, or consequent inability to produce accurate financial statements on a timely basis, could increase our operating costs and harm our business. In addition, investors' perceptions that our internal controls are inadequate or that we are unable to produce accurate financial statements on a timely basis may harm our stock price.

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

The trading market for our common stock depends in part on the research and reports that securities or industry analysts publish about us or our business. In the event one or more of the analysts who cover us downgrades our stock or publishes inaccurate or unfavorable research about our business, our stock price may decline. If one or more of these analysts ceases coverage of our company or fails to publish reports on us regularly, demand for our stock could decrease, which might cause our stock price and trading volume to decline.

Item 1B. Unresolved Staff Comments.

None.

Item 1C. Cybersecurity.

Our board of directors recognizes the critical importance of maintaining the trust and confidence of our vendors, partners, and employees. The Board is actively involved in oversight of the Company's risk management program, and cybersecurity represents an important component of the Company's overall approach. The Company's cybersecurity standards, processes, and practices are based on recognized frameworks established by the National Institute of Standards and Technology, the International Organization for Standardization and other applicable industry standards. In general, the Company seeks to address cybersecurity risks through a comprehensive, cross-functional approach that is focused on preserving the confidentiality, security, and availability of the information that the Company collects and stores by identifying, preventing, and mitigating cybersecurity threats and effectively responding to cybersecurity incidents when they occur.

Risk Management and Strategy

As one of the critical elements of the Company's overall risk management approach, the Company's cybersecurity program is focused on the following key areas:

- **Governance:** As discussed in more detail under the heading below titled, "Governance", the Board's oversight of cybersecurity risk management is supported by the audit committee's regular interactions with the Company's Head of Information Technology, and other members of management or a subcommittee thereof.
- **Collaborative Approach:** The Company has developed a comprehensive, cross-functional approach to identifying, preventing, and mitigating cybersecurity threats and incidents, while also developing tools and processes that provide for the prompt escalation of certain cybersecurity incidents so that decisions regarding the public disclosure and reporting of such incidents can be made by management in a timely manner.
- **Technical Safeguards:** The Company deploys technical safeguards that are designed to protect the Company's information systems from cybersecurity threats, including firewalls, intrusion prevention and detection systems, antimalware functionality, and access controls, which are evaluated and improved through vulnerability assessments and cybersecurity managed detection and response.
- **Incident Response and Recovery Planning:** The Company has developed a comprehensive incident response and recovery plan that addresses the Company's response to a cybersecurity incident.
- **Third-Party Risk Management:** The Company has various controls relating to cybersecurity threats originating from third parties, including vendors, service providers and other external users of the Company's systems, as well as the systems of third parties that could adversely impact our business in the event of a cybersecurity incident affecting those third-party systems.
- **Education and Awareness:** The Company provides regular, mandatory training for personnel regarding cybersecurity threats to equip the Company's personnel with tools to address cybersecurity threats, and to communicate the Company's information technology policies, standards, processes, and practices.

The Company engages in the periodic assessment and testing of the Company's policies, standards, processes and practices that are designed to address cybersecurity threats and incidents. These efforts include a wide range of activities, assessments, vulnerability testing, and other exercises focused on evaluating the effectiveness of our cybersecurity measures and planning. The Company regularly engages third parties to perform assessments on our cybersecurity measures. The results of such assessments are reported to the audit committee, and the Company adjusts its cybersecurity policies, standards, processes and practices as necessary based on the information provided by these assessments.

Governance

The audit committee of the Board oversees the Company's risk management program, including the management of risks arising from cybersecurity threats. The audit committee receives regular presentations and reports on cybersecurity risks, which address a wide range of topics including recent developments, evolving standards, the threat environment, technological trends, and information security considerations arising with respect to the Company's peers and third parties. When necessary, the Board receives prompt and timely information regarding any material cybersecurity incident, as well as ongoing updates regarding any such incident until it has been addressed. On a semi-annual basis, the audit committee of the Board discusses the Company's approach to cybersecurity risk management with the Company's Head of Information Technology.

The Company's Head of Information Technology, in coordination with the Board and audit committee, works collaboratively across the Company to implement and execute a program designed to protect the Company's information systems from cybersecurity threats and to promptly respond to any cybersecurity incidents in accordance with the Company's incident response and recovery approach. To facilitate the success of the Company's cybersecurity risk management program, the Company's Head of Information Technology and his team monitor the prevention, detection, mitigation, and remediation of cybersecurity threats and incidents in real time and, when necessary, report such threats and incidents to the Board. The Head of Information Technology has served in various roles in information technology and information security for over 20 years, including serving as the Head of Information Technology of another clinical-stage biopharmaceutical company. The Head of Information Technology holds undergraduate and graduate degrees in mathematics and computer information systems, respectively.

Cybersecurity threats, including as a result of any previous cybersecurity incidents, have not materially affected the Company, including its business strategy, results of operations, or financial condition.

Item 2. Properties.

Our corporate headquarters is located in Cambridge, Massachusetts, where we lease and occupy approximately 14,000 square feet of office space in a multi-tenant building. The current term of our Cambridge lease expires in July 2026. We also lease approximately 8,000 square feet of office space in a multi-tenant building in Cambridge, Massachusetts. The term of that lease will expire in June 2024. We believe our existing facilities are sufficient for our needs for the foreseeable future.

Item 3. Legal Proceedings.

From time to time, we may become involved in litigation or other legal proceedings. We are not currently a party to any litigation or legal proceedings that, in the opinion of our management, are probable to have a material adverse effect on our business. Regardless of outcome, litigation can have an adverse impact on our business, financial condition, results of operations and prospects because of defense and settlement costs, diversion of management resources and other factors.

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.

Our common stock is publicly traded on the Nasdaq Global Select Market under the symbol “CGEM”.

Stockholders

As of December 31, 2023, there were 15 stockholders of record of our common stock. The actual number of holders of our common stock 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 or held by other nominees. This number of holders of record also does not include stockholders whose shares may be held in trust by other entities.

Dividend Policy

We have never paid or declared any cash dividends on our common stock, and we do not anticipate paying any cash dividends on our common stock in the foreseeable future. We intend to retain all available funds and any future earnings to fund the development and expansion of our business. Any future determination to pay dividends will be at the discretion of our board of directors and will depend upon a number of factors, including our results of operations, financial condition, future prospects, contractual restrictions, restrictions imposed by applicable law and other factors that our board of directors deems relevant.

Equity Compensation Plans

The information required by Item 5 of Form 10-K regarding equity compensation plans is incorporated herein by reference to Item 12 of Part III of this Annual Report on Form 10-K.

Issuer Purchases of Equity Securities

We did not purchase any of our registered equity securities during the period covered by this Annual Report on Form 10-K.

Use of Proceeds from our Public Offering of Common Stock

On January 7, 2021, our Registration Statement on Form S-1, as amended (Registration No. 333-251512) was declared effective by the SEC for our initial public offering (“IPO”). The aggregate net proceeds to us from our IPO, after underwriting discounts and offering expenses, were approximately \$264.5 million. As of December 31, 2023, we have used \$172.2 million of the net proceeds from the IPO. We have invested the unused net proceeds from the IPO into money market funds and marketable securities. Information related to use of proceeds from registered securities is incorporated herein by reference to the “Use of Proceeds” section of our IPO as described in our final prospectus dated January 7, 2021 and filed with the SEC on January 11, 2021 pursuant to Rule 424(b)(4) of the Securities Act. There has been no material change in the planned use of proceeds as described in our final prospectus.

Item 6. Reserved

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

You should read the following discussion and analysis of our financial condition and results of operations together with our consolidated financial statements and the related notes appearing elsewhere in this Annual Report on Form 10-K. This discussion and other parts of this Annual Report on Form 10-K contain forward-looking statements that involve risks and uncertainties, such as statements regarding our plans, objectives, expectations, intentions and projections. Our actual results could differ materially from those discussed in these forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed in the "Risk Factors" section of this Annual Report on Form 10-K.

Overview

We are a clinical-stage biopharmaceutical company focused on developing modality-agnostic targeted oncology therapies. Our mission is creating new standards of care for patients. Our strategy is to identify high-impact cancer targets, which we define as those that play key roles as either oncogenic drivers or immune system activators, and then select what we believe is the optimal therapeutic modality for those targets. We source innovation both internally and externally, focusing on product candidates with novel technology or differentiated mechanisms. Before we advance a product candidate into clinical development, we evaluate its potential for anti-tumor activity as a single agent as well as its ability to generate an immune response or to inhibit oncogenic processes. Using this strategy, we have built a broad and deep pipeline of targeted oncology programs that includes six distinct clinical-stage product candidates.

- Our lead unpartnered program, CLN-619, is a monoclonal antibody that stabilizes expression of MICA/B on the tumor cell surface to promote tumor cell lysis mediated by both cytotoxic innate and adaptive immune cells. CLN-619 is being investigated as both monotherapy and in combination with checkpoint inhibitor therapy in an ongoing Phase 1 clinical trial in patients with advanced solid tumors. We intend to present initial data from the checkpoint inhibitor therapy combination dose escalation module of the clinical trial, as well as updated data from the monotherapy dose escalation module, in the second quarter of 2024. Initial data from the disease specific expansion cohorts are anticipated in the first half of 2025. Separately, in February 2024, the United States ("U.S.") Food and Drug Administration ("FDA") cleared our Investigational New Drug ("IND") application to evaluate CLN-619 in a Phase 1 clinical trial in relapsed/refractory multiple myeloma patients.
- CLN-978 is a CD19xCD3 T cell engager with extended serum half-life and, based on preclinical data, robust potency against target cells expressing low levels of CD19. In August 2023, we dosed the first patient in our Phase 1 clinical trial of CLN-978 in patients with relapsed/refractory B cell non-Hodgkin lymphoma ("B-NHL"). Recently, academic and industry groups have generated clinical data and case series demonstrating that CD19 targeted CAR T cell therapy could lead to sustained improvements in disease, including durable remission in some cases, in several B cell mediated autoimmune indications. Nonetheless, cell therapy has many limitations, including the need for lymphodepleting chemotherapy, which is associated with significant toxicities, an FDA-recognized risk of secondary malignancies, and extended manufacturing timelines due to complexity of production. Based on the emerging clinical data supporting the efficacy of CD19 directed therapy in multiple autoimmune diseases and our belief that CLN-978 may address these limitations of CAR T cell therapy, we are also exploring the development of CLN-978 in autoimmune diseases.
- Ziplertinib (CLN-081/TAS6417), which we are co-developing with an affiliate of Taiho Pharmaceutical Co., Ltd ("Taiho"), is an orally-available small-molecule, irreversible epidermal growth factor receptor ("EGFR") inhibitor that is designed to selectively target cells expressing EGFR exon 20 ("EGFRex20") insertion mutations with relative sparing of cells expressing wild-type EGFR. The FDA has granted Breakthrough Therapy designation to ziplertinib. In collaboration with our partners at Taiho, we are evaluating ziplertinib in the pivotal Phase 2b portion of the REZILIENT1 clinical trial in patients with EGFRex20 non-small-cell lung cancer ("NSCLC") who progressed after prior systemic therapy, and in a global Phase 3 clinical trial ("REZILIENT3") in combination with chemotherapy as a potential first-line treatment for EGFRex20 NSCLC adult patients. We expect to complete enrollment in the pivotal Phase 2b portion of the REZILIENT1 clinical trial by year-end 2024. Taiho and we will each receive 50% of any future pre-tax profits from potential U.S. sales of ziplertinib.
- CLN-049 is a FLT3xCD3 T cell engaging bispecific antibody being investigated in patients with relapsed/refractory acute myeloid leukemia ("AML") or myelodysplastic syndrome ("MDS"). CLN-049 is currently in an ongoing Phase 1 clinical trial with updated clinical data expected in the second half of 2024. In December 2023, we initiated a second Phase 1 clinical trial designed to evaluate the safety of CLN-049 in minimal residual disease-positive AML.

- CLN-418 is a B7H4x4-1BB fully human bispecific immune activator designed to achieve conditional activation of 4-1BB by targeting B7H4, a tumor-associated antigen that is highly expressed across multiple cancers with minimal expression on normal tissues. CLN-418 is being investigated in an ongoing Phase 1 clinical trial in patients with advanced solid tumors with initial clinical data expected in the second half of 2024.
- CLN-617 is a fusion protein combining two potent antitumor cytokines, interleukin-2 ("IL-2") and interleukin-12 ("IL-12") with tumor retention domains for the treatment of solid tumors. In December 2023, we dosed the first patient in the CLN-617 first-in-human Phase 1 clinical trial.

In addition to the product candidates described above, we are actively developing several preclinical oncology programs, all in the discovery stage, including our collaboration with Icahn School of Medicine at Mount Sinai for the development of novel hematopoietic progenitor kinase 1 degraders.

When we were a private company, we established development subsidiaries when we acquired or licensed exclusive worldwide rights to intellectual property, including for CLN-619, CLN-049, and CLN-617. The structure of our financing arrangements with each development subsidiary enables us to increase our economic ownership when we provide additional capital. We have not established development subsidiaries for our other current product candidates and programs. In June 2022, we sold our equity interest in our development subsidiary for zipalertinib to Taiho, and in connection with the sale and pursuant to a co-development agreement, we are co-developing zipalertinib with an affiliate of Taiho. We hold the intellectual property rights for CLN-978 and CLN-418, and we hold intellectual property rights or exclusive options for worldwide intellectual property for our earlier-stage programs. The following table shows our ownership interest as of December 31, 2023 in our development subsidiaries and their product candidates:

Development Subsidiary (Product Candidate)	Ownership as of December 31, 2023
Cullinan MICA Corp. (CLN-619)	95%
Cullinan Florentine Corp. (CLN-049)	96%
Cullinan Amber Corp. (CLN-617)	94%

Since our inception in 2016, we have focused all of our efforts and financial resources on raising capital, organizing and staffing our company, identifying, acquiring or in-licensing and developing product and technology rights, establishing and protecting our intellectual property portfolio and developing and advancing our programs. We do not have any products approved for sale and have not generated any revenue from product sales.

We have funded our operations primarily through the sale of equity securities and from licensing or selling the rights to our product candidates. As of December 31, 2023, we have received net proceeds of \$579.6 million from equity financings, inclusive of our net proceeds of \$264.5 million from our initial public offering ("IPO"). We have received \$18.9 million in revenue from a previous license agreement and cash proceeds of \$275.0 million from the sale of our equity interest in Cullinan Pearl Corp. ("Cullinan Pearl") to Taiho in June 2022.

As of December 31, 2023, we had cash, cash equivalents, short-term investments, and interest receivable of \$468.3 million. Interest receivable is included in prepaid expenses and other current assets on the consolidated balance sheets and represents accrued and unpaid interest on our marketable securities. We have incurred significant operating losses, with the exception of 2022, and have had negative cash flows from operations since our inception. As of December 31, 2023, we had an accumulated deficit of \$200.9 million. We expect to continue to generate operating losses for the foreseeable future. Our future viability is dependent on the success of our research and development and our ability to access additional capital to fund our operations. There can be no assurance that our current operating plan will be achieved or that additional funding will be available on terms acceptable to us, or at all.

We are subject to risks and uncertainties common to early-stage companies in the biotechnology industry including, but not limited to, new technological innovations, protection of proprietary technology, dependence on key personnel, compliance with government regulations and the ability to obtain additional capital to fund operations. Our current and future product candidates will require significant additional research and development efforts, including preclinical and clinical testing and regulatory approval prior to commercialization. These efforts require additional capital, adequate personnel and extensive compliance-reporting capabilities. There can be no assurance that our research and development will be successfully completed, that adequate protection for our intellectual property will be obtained, that any products developed will obtain necessary government regulatory approval or that any approved products will be commercially viable.

Components of Our Results of Operations

Revenue

We have not generated any revenue from the sale of products since our inception and do not expect to generate any revenue from the sale of products in the near future, if at all.

Research and Development Expenses

Research and development expenses consist primarily of costs incurred in connection with the research and development of our product candidates and programs. These expenses include:

- compensation costs for employees engaged in research and development functions;
- expenses incurred under agreements with organizations that support our drug discovery and development activities;
- expenses incurred in connection with the preclinical and clinical development of our product candidates and programs, including under agreements with contract research organizations ("CROs");
- costs related to contract manufacturing organizations, that are primarily engaged to provide drug substance, raw materials, and drug product for our clinical trials, research and development programs, as well as investigative sites and consultants that conduct our clinical trials, nonclinical studies, and other scientific development services;
- the costs of acquiring and manufacturing nonclinical and clinical trial materials, including manufacturing registration and validation batches;
- costs related to compliance with quality and regulatory requirements;
- payments made under third-party licensing agreements; and
- direct and allocated costs related to facilities, information technology, personnel and other overhead.

Following the sale of our equity interest in Cullinan Pearl in the second quarter of 2022, development costs and any future potential pre-tax profits from potential U.S. sales of zipalertinib are shared equally between us and Taiho.

General and Administrative Expenses

General and administrative expenses consist primarily of compensation costs for personnel in executive management, finance, legal, corporate and business development, and other administrative functions. General and administrative expenses also include legal fees relating to patent and corporate matters; professional fees for accounting, auditing, tax, and administrative consulting services; insurance costs; administrative travel expenses; marketing expenses; and other operating costs.

Gain on Sale of Cullinan Pearl

Gain on sale of Cullinan Pearl represents the excess of the consideration received over the carrying value of the non-financial assets sold. Refer to Note 3 of our notes to the consolidated financial statements included in this Annual Report on Form 10-K for additional details relating to the transaction.

Impairment of Long-Lived Assets

Impairment of long-lived assets represents the impairment charge for the carrying value in excess of the fair value of the assets. Refer to Note 12 of our notes to the consolidated financial statements in this Annual Report on Form 10-K for additional details relating to the impairment.

Other Income

Other income consists primarily of interest income earned on our cash, cash equivalents, and investments.

Income Taxes

Income taxes consist primarily of federal and state income taxes.

Results of Operations

Comparison of 2023 and 2022

The following table presents our results of operations for 2023 and 2022 (in thousands):

	2023	2022
Operating expenses:		
Research and development	\$ 148,156	\$ 91,948
General and administrative	42,493	40,189
Total operating expenses	190,649	132,137
Impairment of long-lived assets	(440)	—
Gain on sale of Cullinan Pearl	—	276,785
Income (loss) from operations	(191,089)	144,648
Other income (expense):		
Interest income	21,627	6,611
Other income (expense), net	239	57
Net income (loss) before income taxes	(169,223)	151,316
Income tax expense (benefit)	(14,122)	42,121
Net income (loss)	(155,101)	109,195
Net loss attributable to noncontrolling interests	(1,939)	(2,019)
Net income (loss) attributable to common stockholders of Cullinan	<u>\$ (153,162)</u>	<u>\$ 111,214</u>

Research and Development Expenses

The following table summarizes our research and development expenses for 2023 and 2022 (in thousands):

	2023	2022
CLN-619	\$ 22,854	\$ 16,815
CLN-978	5,493	10,822
Zipalertinib	31,234	16,889
CLN-049	9,236	6,605
CLN-418	38,539	—
CLN-617	8,272	12,110
Clinical-stage product candidates	115,628	63,241
Early-stage research	4,645	6,894
Unallocated personnel and other	15,715	10,795
Equity-based compensation	12,168	11,018
Total research and development expenses	<u>\$ 148,156</u>	<u>\$ 91,948</u>

The \$56.2 million increase in research and development expenses in 2023 compared to 2022 was primarily related to increased clinical costs (\$33.3 million), an upfront fee due upon in-licensing CLN-418 (\$25.0 million), higher personnel costs due to increased headcount and expansion of operations to support our research and development activities (\$9.1 million), and higher equity-based compensation costs (\$1.2 million), partially offset by lower preclinical costs (\$11.0 million) some of which is allocated to product candidates in the above table.

General and Administrative Expenses

The increase of \$2.3 million in general and administrative expenses in 2023 compared to 2022 was primarily due to an increase in personnel costs (\$3.1 million), an increase in equity-based compensation expense (\$1.3 million), and higher occupancy and other costs to support our expanded operations (\$0.8 million), partially offset by one-time costs related to the sale of Cullinan Pearl in 2022 that did not recur in 2023 (\$2.0 million), and lower legal and other professional service fees (\$0.9 million).

Impairment of Long-Lived Assets

Impairment of long-lived assets represents the impairment charge for the carrying value in excess of the fair value of the assets. Refer to Note 12 of our notes to the consolidated financial statements in this Annual Report on Form 10-K for additional details relating to the impairment.

Gain on Sale of Cullinan Pearl

Gain on sale of Cullinan Pearl represents the excess of the consideration received over the carrying value of the non-financial assets sold. Refer to Note 3 of our notes to the consolidated financial statements included in this Annual Report on Form 10-K for additional details relating to the transaction.

Other Income

The \$15.2 million increase in other income in 2023 compared to 2022 was primarily related to higher interest income earned.

Income Tax Expense (Benefit)

The income tax benefit recognized for 2023 represents return to provision adjustments for the utilization of 2022 and historical tax attributes against the gain on sale of Cullinan Pearl and the expected utilization of tax attributes generated during 2023 that can be carried back to 2022. The income tax expense recognized for 2022 represents the tax from the gain on sale of Cullinan Pearl, including the expected utilization of tax attributes generated during 2022 and the release of valuation allowance for the expected utilization of certain historical tax attributes against the gain from the sale.

Net Loss Attributable to Noncontrolling Interests

Net loss attributable to noncontrolling interests is determined as the difference in the noncontrolling interests in the consolidated balance sheets between the start and end of each reporting period, after taking into account any capital transactions between our development subsidiaries and third parties. Refer to Note 8 of our notes to the consolidated financial statements included in this Annual Report on Form 10-K for additional details of capital transactions between our development subsidiaries and third parties.

Liquidity and Capital Resources

Overview

We have incurred significant operating losses, with the exception of 2022, and have had negative cash flows from operations since our inception and expect to continue to generate operating losses for the foreseeable future. We have not yet commercialized any products and we do not expect to generate revenue from sales of products for several years, if at all. To date, we have funded our operations primarily with proceeds from the sale of equity securities and from licensing or selling the rights to our product candidates. As of December 31, 2023, we had cash, cash equivalents, short-term investments, and interest receivable of \$468.3 million.

Based on our current operational plans and assumptions, we expect that our current cash, cash equivalents, investments, and interest receivable, will be sufficient to fund operations into the second half of 2026. We have based these estimates on assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we expect. We cannot guarantee that we will be able to raise additional capital on reasonable terms or at all.

In February 2023, we entered into a license and collaboration agreement (the "Harbour License Agreement") with Harbour BioMed US Inc. ("Harbour"), pursuant to which Harbour granted us an exclusive license for the development, manufacturing and commercialization of CLN-418 in the U.S. Under the terms of the Harbour License Agreement, we paid Harbour an upfront license fee of \$25.0 million at signing.

In May 2023, we entered into an agreement with Cowen and Company, LLC ("Cowen") to establish an at-the-market equity offering program (the "ATM"), pursuant to which we may offer and sell up to \$125.0 million of our common stock from time to time through Cowen, acting as our sales agent. In the second quarter of 2023, we sold approximately 3.3 million shares under the ATM and received net proceeds of \$38.4 million, after deducting commissions. We have not subsequently made sales under the ATM. As of December 31, 2023, we had \$85.6 million in shares of our common stock remaining under the ATM.

Cash Flows

Comparison of 2023 and 2022

The following table summarizes our sources and uses of cash for 2023 and 2022 (in thousands):

	2023	2022
Net cash used in operating activities	\$ (134,275)	\$ (126,664)
Net cash provided by investing activities	35,806	248,975
Net cash provided by (used in) financing activities	40,751	(25,933)
Net increase (decrease) in cash and cash equivalents	<u>\$ (57,718)</u>	<u>\$ 96,378</u>

Cash Flow from Operating Activities

During 2023, our operating activities used \$134.3 million of cash, which primarily consisted of our operating expenses of \$159.9 million excluding non-cash items, partially offset by interest income of \$11.5 million excluding accretion on marketable securities, a benefit of \$9.3 million from the net change in our non-tax operating assets and liabilities, income tax refunds of \$4.4 million, and sublease income of \$0.5 million. The non-cash operating expenses primarily consisted of equity-based compensation expense.

During 2022, our operating activities used \$126.7 million of cash, which primarily consisted of our operating expenses of \$103.7 million excluding non-cash items and \$37.8 million in payments for a portion of our estimated tax liability from the gain on sale of Cullinan Pearl, partially offset by interest income of \$7.9 million excluding amortization on marketable securities, and a benefit of \$6.9 million from the net change in our non-tax operating assets and liabilities. The non-cash operating expenses primarily consisted of equity-based compensation expense.

Cash Flow from Investing Activities

During 2023, our investing activities provided \$35.8 million of cash, which primarily consisted proceeds of \$409.4 million from the maturities of marketable securities, partially offset by the purchase of marketable securities of \$373.4 million.

During 2022, our investing activities provided \$249.0 million of cash, which primarily consisted of proceeds of \$352.9 million from the maturities of marketable securities and proceeds of \$275.0 million from the sale of our equity interest in Cullinan Pearl, partially offset by \$377.9 million used for the purchase of marketable securities and \$1.1 million for the purchase of property and equipment to improve and furnish our leased office space.

Cash Flow from Financing Activities

During 2023, our financing activities provided \$40.8 million of cash, which primarily consisted of \$38.4 million of net proceeds from the issuance of common stock under our ATM, proceeds of \$1.8 million from the issuance of a convertible note by our CLN-619 development subsidiary to a noncontrolling interest, and net issuance of common stock under equity-based compensation plans of \$0.5 million.

During 2022, our financing activities used \$25.9 million of cash, which primarily consisted of \$33.3 million paid to acquire shares of our CLN-619 development subsidiary that were held by noncontrolling interests, partially offset by proceeds of \$6.0 million from stock option exercises and proceeds of \$1.2 million from the issuance of noncontrolling interests in our CLN-619 development subsidiary.

Future Funding Requirements

We expect our expenses to continue to increase in connection with our ongoing activities, particularly as we advance the clinical trials and manufacturing of our product candidates along with preclinical activities for our current and potential future product candidates. In addition, we have and will continue to incur additional costs associated with operating as a public company, including significant legal, accounting, investor relations and other expenses.

Our expenses will also increase as we:

- continue our research and development efforts and submit INDs for our current and future product candidates and programs;
- conduct preclinical studies and clinical trials for our current and future product candidates;
- experience any delays or encounter any issues with any of the above, including but not limited to failed studies, or trials, complex results, safety issues, or other regulatory challenges;
- develop the necessary processes, controls, and manufacturing capabilities to obtain marketing approval for our current and future product candidates and to support manufacturing on a commercial scale;
- develop and implement plans to establish and operate in-house manufacturing operations and facilities, if deemed appropriate;
- seek regulatory approvals for our current and future product candidates that successfully complete clinical trials;
- hire and retain additional personnel, such as non-clinical, clinical, pharmacovigilance, quality assurance, regulatory affairs, manufacturing, distribution, legal, compliance, medical affairs, finance, general and administrative, commercial, and scientific personnel; and
- develop, maintain, expand, and protect our intellectual property portfolio.

Based on our current operational plans and assumptions, we expect that our current cash, cash equivalents, investments, and interest receivable will be sufficient to fund operations into the second half of 2026. We have based these estimates on assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we expect. As we progress with our development programs and the regulatory review process, we expect to incur significant expenses related to product manufacturing, pre-commercial activities and commercialization. We may also require additional capital to pursue in-licenses or acquisitions of other programs to further expand our pipeline.

Because of the numerous risks and uncertainties associated with research, development and commercialization of our product candidates and programs, we are unable to estimate the exact amount of our working capital requirements. Our future funding requirements will depend on and could increase significantly as a result of many factors, including:

- the scope, progress, results, and costs of drug discovery, laboratory testing, and preclinical and clinical development for our current and future product candidates;
- timely completion of our preclinical studies and clinical trials, which may be significantly slower or cost more than we currently anticipate and will depend substantially upon the performance of third-party contractors;
- the prevalence, duration, and severity of potential side effects or other safety issues experienced by patients receiving our current and future product candidates;
- our ability to establish and maintain collaborations and license agreements on favorable terms, if at all, and the extent to which we acquire or in-license technologies or programs, if at all;
- our ability to enroll clinical trials in a timely manner and to quickly resolve any delays or clinical holds that may be imposed on our development programs;
- the costs of expanding our facilities to accommodate our expected growth in personnel;
- our ability and the ability of third parties with whom we contract to manufacture adequate clinical and commercial supplies of our current and future product candidates, remain in good standing with regulatory authorities and develop, validate, and maintain commercially viable manufacturing processes that are compliant with current good manufacturing practices;
- the costs of preparing, filing, and prosecuting patent applications, maintaining and enforcing our intellectual property rights, and defending intellectual property-related claims;
- the extent to which we acquire or in-license technologies or programs;
- the sales price and availability of adequate third-party coverage and reimbursement for our product candidates, if and when approved; and
- the ongoing costs of operating as a public company.

Until such time, if ever, that we can generate product revenue sufficient to achieve profitability, we expect to finance our cash needs through equity offerings, debt financings, government or other third-party funding, marketing and distribution arrangements, and other collaborations, strategic alliances and licensing arrangements. To the extent that we raise additional capital through the sale of equity, current ownership interests will be diluted. If we raise additional funds through government or third-party funding, collaboration agreements, strategic alliances, licensing arrangements, or marketing and distribution arrangements, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates, or grant licenses on terms that may not be favorable to us. 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 are unable to raise additional funds 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 products or product candidates that we would otherwise prefer to develop and market ourselves.

Contractual Obligations and Other Commitments

We have certain payment obligations under various license and collaboration agreements. Under these agreements, we are required to make milestone payments upon successful completion and achievement of certain intellectual property, clinical, regulatory, and sales milestones. The payment obligations under the license and collaboration agreements are contingent upon future events, such as our achievement of specified development, clinical, regulatory, and commercial milestones, and we will be required to make milestone and royalty payments in connection with the sale of products developed under these agreements. As the achievement and timing of these future milestone payments are not probable or estimable, such amounts have not been included in our consolidated balance sheet as of December 31, 2023 and 2022.

As of December 31, 2023, total future minimum lease payments were \$4.1 million with \$1.7 million payable within 12 months. See Note 13 of our consolidated financial statements included in this Annual Report on Form 10-K for further detail on our lease obligations and the timing of expected future payments.

In addition, we enter into agreements in the normal course of business with CROs for clinical trials and with other vendors for preclinical studies, manufacturing services, and other services and products for operating purposes, which are generally cancelable upon written notice.

Critical Accounting Policies and Estimates

Our consolidated financial statements are prepared in accordance with U.S. generally accepted accounting principles ("GAAP"). The preparation of our consolidated financial statements and related disclosures requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, costs and expenses, and the disclosure of contingent assets and liabilities in our consolidated financial statements. We base our estimates on historical experience, known trends and events and various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. We evaluate our estimates and assumptions on an ongoing basis. Our actual results may differ from these estimates under different assumptions or conditions.

While our significant accounting policies are described in more detail in Note 2 of our consolidated financial statements included in this Annual Report on Form 10-K, we believe that the following accounting policies are those most critical to the judgments and estimates used in the preparation of our consolidated financial statements.

Research and Development Contract Costs and Accruals

Research and development costs are expensed as incurred. We record accrued liabilities for estimated costs of research and development activities conducted by third-party service providers, which include the conduct of preclinical studies, clinical trials and contract manufacturing activities. We record the estimated costs of research and development activities based upon the estimated amount of services provided but not yet invoiced and include these costs in accrued research and development liabilities in our consolidated balance sheets and within research and development expense in our consolidated statements of operations and comprehensive income (loss). These costs are a significant component of our research and development expenses.

We accrue for these costs based on factors such as estimates of the amount of work completed through discussions with internal personnel and external service providers as to the progress or stage of completion of the services and in accordance with agreements established with our third-party service providers for such services. We make significant judgments and estimates in determining the accrued research and development liabilities balance at each reporting period. As actual costs become known, we adjust our accrued estimates. Although we do not expect our estimates to be materially different from amounts actually incurred, the status and timing of services performed, the number of patients enrolled in clinical trials and the rate of patient enrollment may vary from our estimates and could result in us reporting amounts that are too high or too low in any particular period. Our accrued expenses are dependent, in part, upon the receipt of timely and accurate reporting from clinical research organizations and other third-party service providers. We record advance payments to service providers as prepaid assets, which are expensed as the contracted services are performed.

Equity-Based Compensation Expense

We measure the fair value of market-based restricted stock units ("RSUs") on the grant date using a Monte Carlo simulation model. We estimate the fair value of stock options using the Black-Scholes option pricing model. Both the Monte Carlo simulation model and the Black-Scholes option pricing model require the input of objective and subjective assumptions. Certain assumptions used, including our expected stock price volatility, represent management's estimates and involve inherent uncertainties and the application of management's judgment. As a result, if factors change and management uses different assumptions, equity-based compensation expense could be materially different for future awards.

We do not have sufficient historical or implied volatility data for our common stock necessary to estimate expected volatility over a period of time commensurate with the expected term of our stock option awards. Prior to 2023, the expected volatility used in the Black-Scholes option pricing model for new options was based on historical volatilities of the stock prices of similar entities within our industry over a period of time commensurate with the expected term assumption. In 2023, we determined that a sufficient amount of historical information was available regarding the volatility of our stock price to begin using a blended rate that combines our historical volatility with the historical volatilities of the stock prices of similar entities within our industry over a period of time commensurate with the expected term assumption.

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. A reduction in the carrying value of the deferred tax assets is required when it is not more likely than not that such deferred tax assets are not realizable. Judgment is required to if certain income tax positions are more likely than not of being sustained and may change from period to period when there is a change in judgment.

Emerging Growth Company Status

In April 2012, the JOBS Act was enacted. Section 107 of the JOBS Act provides that an “emerging growth company,” (“EGC”) can take advantage of the extended transition period provided in Section 7(a)(2)(B) of the Securities Act for complying with new or revised accounting standards. Thus, an EGC can delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have elected to use the extended transition period for new or revised accounting standards during the period in which we remain an emerging growth company; however, we may adopt certain new or revised accounting standards early.

We will remain an emerging growth company until the earliest to occur of (1) the last day of the fiscal year (a) following the fifth anniversary of the closing of our initial public offering, (b) in which we have total annual gross revenue of at least \$1.235 billion or (c) in which we are deemed to be a large accelerated filer, which requires the market value of our common stock that is held by non-affiliates to exceed \$700 million as of the prior June 30th, and (2) the date on which we have issued more than \$1 billion in non-convertible debt during the prior three-year period.

Recently Issued and Adopted Accounting Pronouncements

A description of recently issued accounting pronouncements that may potentially impact our financial position and results of operations is disclosed in Note 2 of our consolidated financial statements included in this Annual Report on Form 10-K.

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

We are a smaller reporting company as defined by Item 10 of Regulation S-K and are not required to provide the information otherwise required under this Item.

Item 8. Financial Statements and Supplementary Data.

The financial statements required to be filed pursuant to this Item 8 are appended to this Annual Report on Form 10-K. An index of those financial statements is found in Item 15, Exhibits and Financial Statement Schedules, of this Annual Report on Form 10-K.

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

There has been no change of accountants nor any disagreements with accountants on any matter of accounting principles or practices of financial disclosure required to be reported under this Item.

Item 9A. Controls and Procedures.**Evaluation of Disclosure Controls and Procedures**

We have established disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934 (as amended, the "Exchange Act"), designed to ensure that information required to be disclosed in the reports that we file or submit 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 management, including the principal executive officer (our Chief Executive Officer) and principal financial officer (our Chief Financial Officer), to allow timely decisions regarding required disclosure. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply judgment in evaluating the benefits of possible controls and procedures relative to their costs.

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated, as of December 31, 2023, the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act). Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives and management necessarily applies our judgment in evaluating the cost-benefit relationship of possible controls and procedures. Our disclosure controls and procedures have been designed to provide reasonable assurance of achieving their objectives. Based on that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) were effective at the reasonable assurance level as of December 31, 2023.

Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over our financial reporting. Internal control over financial reporting is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act as the process designed by, or under the supervision of, our Chief Executive Officer and our Chief Financial Officer, and effected by our board of directors, management, and other personnel, to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of our financial statements for external purposes in accordance with GAAP, and includes those policies and procedures that:

1. Pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of assets;
2. Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP, and that receipts and expenditures are being made only in accordance with the authorizations of management and directors; and
3. Provide reasonable assurance regarding the prevention or timely detection of unauthorized acquisition, use or disposition of assets that could have a material effect on our financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of the 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 policies or procedures may deteriorate.

Our management assessed the effectiveness of our internal control over financial reporting based on the framework provided in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, our management concluded that our internal control over financial reporting was effective as of December 31, 2023.

As an emerging growth company as defined in the JOBS Act, our independent registered accounting firm is not required to issue an attestation report on the internal control over financial reporting.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting (as defined in Rules 13a-15(f) or 15(d)-15(f) under the Exchange Act) that occurred during the fiscal quarter ended December 31, 2023 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information.

Departure of Jeffrey Trigilio as Chief Financial Officer

On March 14, 2024, Cullinan Oncology, Inc. (the “Company”) announced the departure of Jeffrey Trigilio from the Company, effective as of March 29, 2024 (the “Transition Date”). Until the Transition Date, Mr. Trigilio will continue to be employed by the Company as the Chief Financial Officer and Treasurer pursuant to the terms and conditions of his employment agreement.

The Company and Mr. Trigilio will enter into a Separation and Transition Agreement (the “Separation Agreement”) to govern the terms of his separation from the Company. In recognition of Mr. Trigilio’s service to the Company and in consideration of his execution of a general release of claims, under the Separation Agreement, Mr. Trigilio will be entitled to severance in an amount equal to twelve (12) months of Mr. Trigilio’s base salary, plus the pro-rata portion of his target annual bonus for 2024, measured as of the Transition Date, payable in accordance with normal Company payroll practices. Subject to Mr. Trigilio’s proper election to receive benefits under COBRA and copayment of his portion of the COBRA premiums, the Company will also pay up to nine (9) months of a portion of each COBRA premium payment equal to the portion the Company contributed to such health insurance premium cost as of the Transition Date (or until Mr. Trigilio becomes eligible for alternative health benefits from a subsequent employer or ineligible for COBRA, if earlier). The Separation Agreement also contains non-disparagement covenants and a reaffirmation of Mr. Trigilio’s confidentiality and non-solicitation obligations to the Company.

Following the Transition Date and to ensure an orderly transition, Mr. Trigilio has agreed to be available to consult with the Company through September 30, 2024 (the “Transition Period”). The Separation Agreement will also govern the terms of his consulting arrangement with the Company for the Transition Period. Mr. Trigilio will receive (i) the payment of an agreed flat rate for the consulting work provided between the Transition Date and April 30, 2024, (ii) the payment of an agreed hourly rate for any consulting work provided between May 1, 2024 and September 30, 2024, (iii) continued vesting of his equity awards through the Transition Period, subject to continued service and (iv) on the last date of the Transition Period, accelerated vesting of the unvested equity awards that would have vested through April 30, 2025, subject to continued service through the Transition Period.

The foregoing summary is not complete and is qualified in its entirety by the Separation Agreement, a copy of which the Company intends to file with the Securities and Exchange Commission as an exhibit to the Company’s Quarterly Report on Form 10-Q for the three months ended March 31, 2024.

Appointment of Nate Nguyen as Interim Principal Financial Officer and Principal Accounting Officer

On March 11, 2024, in connection with Mr. Trigilio’s separation from the Company, the Board appointed Nate Nguyen as the Company’s Interim Principal Financial Officer (“PFO”) and Principal Accounting Officer (“PAO”), effective March 29, 2024. Mr. Nguyen will serve in this role during the search for and until the appointment of a permanent Chief Financial Officer, or until his earlier resignation or removal.

Mr. Nguyen, age 36, joined the Company in January 2021 and has served in a variety of roles including Director of Accounting, Controller from January 2021 to December 2021, Senior Director, Controller from January 2022 to June 2022, and, most recently, as Vice President, Controller where he has served since July 2022. Prior to joining the Company, Mr. Nguyen worked at Corporate Finance Group, Inc. as a senior manager from September 2017 to December 2020. Mr. Nguyen holds a B.S. in Finance and Accounting from Villanova University.

There are no arrangements or understandings between Mr. Nguyen and any other persons pursuant to which he was appointed as Interim PFO and PAO. There are no family relationships between Mr. Nguyen and any of the Company’s directors or executive officers and Mr. Nguyen has no direct or indirect material interest in any transaction required to be disclosed by the Company pursuant to Item 404(a) of Regulation S-K.

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

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

Information About Our Executive Officers

The following table sets forth the name, age as of February 15, 2024, and position of each of our executive officers.

Name	Position at Cullinan Oncology	Officer Since	Age
Nadim Ahmed	President, Chief Executive Officer and Director	2021	56
Jeffrey Jones, M.D.	Chief Medical Officer	2022	53
Jennifer Michaelson, Ph.D.	Chief Scientific Officer	2018	57
Corinne Savill, Ph.D.	Chief Business Officer	2017	64
Jacquelyn Sumer, Esq.	Chief Legal Officer, Chief Compliance Officer and Secretary	2022	46
Jeffrey Trigilio	Chief Financial Officer and Treasurer	2020	40

Nadim Ahmed Mr. Ahmed has served as our President and Chief Executive Officer and member of our board of directors since October 2021. Before joining the Company, Mr. Ahmed served as President, Hematology at Bristol Myers Squibb (“BMS”), from November 2019 through January 2021. Prior to this, he served in increasing roles of responsibility at Celgene Corporation (“Celgene”) from March 2010 to November 2019, most recently as the President, Global Hematology & Oncology. Prior to his tenure at Celgene, Mr. Ahmed served in increasing roles of responsibility at GlaxoSmithKline plc (“GlaxoSmithKline”) from June 1998 through March 2010, most recently as the Senior Marketing Director, Hematologic Oncology Franchise. Mr. Ahmed holds a Master of Science degree from Loughborough University and a Bachelor of Science degree from University College London. We believe that Mr. Ahmed is qualified to serve as a member of our board of directors due to his extensive leadership experience in the biopharmaceutical industry.

Jeffrey Jones, M.D. Dr. Jones has served as our Chief Medical Officer since February 2022. Before joining the Company, Dr. Jones served as Vice President, Global Drug Development, Lymphoma and Myeloid Diseases at BMS from April 2020 to February 2022 and as Executive Medical Director, Global Clinical Research and Development at BMS from August 2017 to April 2020. Prior to this, Dr. Jones served as Associate Professor of Clinical Internal Medicine at The Ohio State University College of Medicine. Prior to that, Dr. Jones served as a Clinical Instructor from 2006 to 2014 at The Ohio State University. Dr. Jones received his M.D. from University of Michigan Medical School in Ann Arbor, Michigan and completed his residency in internal medicine at McGill University Faculty of Medicine in Montreal and a fellowship in hematology and medical oncology at MD Anderson Cancer Center in Houston, Texas. Dr. Jones also holds an M.B.A. from The Ohio State University Fisher College of Business and an M.P.H. from the University of Texas School of Public Health.

Jennifer Michaelson, Ph.D. Dr. Michaelson has served as our Chief Scientific Officer since June 2023. Previously, she was Chief Development Officer of the Company from February 2022 to June 2023 and prior to that, Chief Development Officer, Biologics of the Company from January 2020 to February 2022 and Vice President, Preclinical Research and Early Development of the Company from January 2018 through December 2019. Before joining the Company, Dr. Michaelson served as the Head of Biologics at Celsius Therapeutics, Inc., a biotechnology company, from July 2017 through December 2017. Prior to this, she served in increasing roles of responsibility at Jounce Therapeutics, Inc., from September 2012 through July 2017, most recently as Senior Director and Executive Program Leader and previously as Director of Tumor Immunology and as a consultant. Previously, during her 10-year tenure at Biogen Idec Inc., Dr. Michaelson served as project leader for several monoclonal antibody and bispecific antibody programs in both the oncology and immunology therapeutic areas. Dr. Michaelson holds a B.A. in Biology from Princeton University and Ph.D. from the Department of Cell Biology at Albert Einstein College of Medicine and completed a post-doctoral fellowship in Philip Leder’s laboratory in the Department of Genetics at Harvard Medical School.

Corinne Savill, Ph.D. Dr. Savill has served as our Chief Business Officer since February 2017. Before joining the Company, Dr. Savill served in increasing roles of responsibility at Novartis Pharma AG (“Novartis”), including Global Head of Business Development and Licensing from June 2013 through February 2017, Global Head of Pricing and Market Access from September 2010 through June 2013, Global Head Search and Evaluation, Business Development and Licensing from January 2005 through August 2010 and Regional Manager Europe, Transplantation and Immunology Business Unit from August 2002 through Jan 2005. Prior to her tenure at Novartis, Dr. Savill was Chief Executive Officer of Imutran, a UK based biotechnology company, which was acquired by Novartis. She also previously worked in research at AstraZeneca. Dr. Savill holds a B.S. in Biochemistry from the University of Manchester and obtained her Ph.D. at University College and Middlesex School of Medicine and the Charing Cross Sunley Research Centre in London.

Jacquelyn Sumer, Esq. Ms. Sumer has served as our Chief Legal Officer since August 2022. Before joining the Company, Ms. Sumer served as Chief Legal and Compliance Officer at Genocoe Biosciences, Inc. (“Genocoe”) from February 2021 to June 2022. Prior to Genocoe, Ms. Sumer was Vice President, Assistant General Counsel at BMS from November 2019 to February 2021. Prior to this, she served as head of Celgene’s CAR T legal team from July 2018 to November 2019. She previously worked at Kaye Scholer, LLP and clerked for the Honorable Gladys Kessler at the United States District Court in Washington D.C. Ms. Sumer holds a J.D. and a Master of Laws in international and comparative law from Duke University School of Law and a B.A. from Bucknell University.

Jeffrey Trigilio Mr. Trigilio has served as our Chief Financial Officer since September 2020. Before joining the Company, Mr. Trigilio served as the Chief Financial Officer at Amylyx Pharmaceuticals, Inc., a pharmaceutical company, from January 2020 through July 2020. Prior to this, he was Vice President, Corporate Finance at BlueRock Therapeutics, Inc. (“Bluerock”), from August 2018 through January 2020. Prior to his tenure at BlueRock, Mr. Trigilio was a Director, Healthcare Investment Banking at RBC Capital Markets LLC from November 2017 through August 2018. He previously served in increasing roles of responsibility at Alexion Pharmaceuticals, Inc. from April 2013 through November 2017 and at Credit Suisse Securities from July 2008 to March 2013. Mr. Trigilio holds a B.A. in Industrial and Labor Relations from Cornell University and an M.B.A. from Columbia University.

The principal occupation and employment during the past five years of each of our executive officers was carried on, in each case except as specifically identified in this Annual Report on Form 10-K, with a corporation or organization that is not a parent, subsidiary or other affiliate of us. There is no arrangement or understanding between any of our executive officers and any other person or persons pursuant to which he or she was or is to be selected as an executive officer.

There are no material legal proceedings to which any of our executive officers is a party adverse to us or our subsidiaries or in which any such person has a material interest adverse to us or our subsidiaries.

Directors

The following table sets forth the name and age as of February 15, 2024 of each of our non-employee directors.

Name	Director Since	Age
Thomas Ebeling	2017	65
Anne-Marie Martin, Ph.D.	2022	52
Anthony Rosenberg	2017	70
David P. Ryan, M.D.	2022	57
Stephen Webster	2020	62

Thomas Ebeling Mr. Ebeling has served as a member of our board of directors since August 2017. He also serves as an Advisor at MPM. Since 2018, he has served as Chief Executive Officer at TE Convast AG, a consulting and executive coaching company. Prior to that, Mr. Ebeling served as the Chief Executive Officer of ProSieben Media SE, a mass media company, from March 2009 through February 2017. Mr. Ebeling previously served as the Chief Executive Officer of Novartis Consumer Health from September 2007 through September 2008, and as Chief Executive Officer of Novartis Pharmaceuticals Corporation from July 2000 through September 2007. He served in numerous leadership roles at PepsiCo Germany from 1991 through 1996. He is a member of the boards of Qiagen N.V. and Orna Therapeutics. Additionally, he currently serves on the board of several private companies. Previously, Mr. Ebeling served on the board of directors of Bayer AG from April 2012 to September 2019 and on the board of directors of Lonza Group AG from March 2013 to March 2017. Mr. Ebeling holds a B.S. in Psychology from the University of Hamburg. We believe that Mr. Ebeling is qualified to serve as a member of our board of directors due to his extensive leadership experience in the life sciences industry.

Anne-Marie Martin, Ph.D. Dr. Martin has served as a member of our board of directors since March 2022. Dr. Martin currently serves as Senior Vice President, Global Head of the Experimental Medicine Unit at GlaxoSmithKline and has held this position since August 2020. She previously served as Senior Vice President, Global Head of Precision Medicine at Novartis from February 2016 to July 2020. Prior to her position at Novartis, she was Vice President, Head of Biomarker Research & Diagnostic Development at Adaptimmune Therapeutics plc (“Adaptimmune”), from May 2015 to February 2016. Prior to Adaptimmune, Dr. Martin held various roles of increasing responsibility at GlaxoSmithKline between March 2005 and April 2015. Additionally, she served as a board observer for Freenome Holdings, Inc., a private biotechnology company, from August 2019 to July 2020. She received her undergraduate degree in biomedical sciences from Sheffield Hallam University and holds a Ph.D. in Immunogenetics from MCP-Hahnemann University. We believe that Dr. Martin is qualified to serve on our board of directors due to her extensive experience in the biotechnology and pharmaceutical sectors.

Anthony Rosenberg Mr. Rosenberg has served as a member of our board of directors since August 2017 and as the Chairperson of our board of directors since April 2020. Currently, Mr. Rosenberg serves as the Chief Executive Officer of TR Advisory Services GmbH, a consultancy firm advising on business development, licensing, and mergers and acquisitions. From April 2015 to April 2020, Mr. Rosenberg served as a Managing Director of MPM. From January 2012 to February 2015, Mr. Rosenberg served as Corporate Head of M&A and Licensing at Novartis. Mr. Rosenberg currently serves on the board of directors of argenx SE and Oculus Holding AG. Previously, Mr. Rosenberg served on the board of directors of Radius Health, Inc. He also serves on the board of two private companies. Mr. Rosenberg holds a B.Sc. from the University of Leicester and a M.Sc. Physiology from the University of London. We believe that Mr. Rosenberg is qualified to serve as a member of our board of directors due to his extensive tenure in biotech operations and strategic management.

David P. Ryan, M.D. Dr. Ryan has served as a member of our board of directors since November 2022. Since 2012, Dr. Ryan has served as Clinical Director and Chief of the Massachusetts General Hospital (“MGH”) Cancer Center. He has held increasing roles of responsibility at MGH since 1998, specializing in the research and treatment of patients with cancer. Additionally, Dr. Ryan is currently a Shelby Memorial Professor of Medicine in the Field of Cancer Therapeutics at Harvard Medical School and serves on the board of the College of the Holy Cross. Dr. Ryan is also a member of the American Society for Clinical Oncology and serves as an advisor to Boehringer Ingelheim and both MPM and BioImpact Capital, an affiliate manager of MPM. Dr. Ryan holds a M.D. from Columbia College of Physicians and Surgeons and a B.A. from the College of the Holy Cross. We believe that Dr. Ryan is qualified to serve as a member of our board of directors due to his extensive experience in oncology clinical research.

Stephen Webster Mr. Webster has served as a member of our board of directors since September 2020. Mr. Webster served as the Chief Financial Officer of Spark Therapeutics, Inc., a gene therapy company, from July 2014 until its acquisition by Roche Holding AG for \$4.8 billion in December 2019. He was previously Senior Vice President and Chief Financial Officer of Optimer Pharmaceuticals Inc. from July 2012 until its acquisition by Cubist Pharmaceuticals Inc. in October 2013. Mr. Webster currently serves on the board of directors of NextCure, Inc. and Nabriva Therapeutics AG (formerly Nabriva Therapeutics plc). He previously served on the board of directors of TCR2. Mr. Webster received an A.B. in Economics from Dartmouth College and an M.B.A. in Finance from The Wharton School of the University of Pennsylvania. We believe Mr. Webster is qualified to serve as a member of our board of directors due to his extensive experience in the biopharmaceutical industry, including his prior experience as a chief financial officer and in other management positions.

There are no family relationships between or among any of our directors or executive officers. The principal occupation and employment during the past five years of each of our directors was carried on, in each case except as specifically identified in this Annual Report on Form 10-K, with a corporation or organization that is not a parent, subsidiary or other affiliate of us. There is no arrangement or understanding between any of our directors and any other person or persons pursuant to which he or she is to be selected as a director.

There are no material legal proceedings to which any of our directors is a party adverse to us or any of our subsidiaries or in which any such person has a material interest adverse to us or our subsidiaries.

Code of Business Conduct and Ethics

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

Stockholder Nomination Process

There have been no material changes to the previously disclosed procedures by which our stockholders may recommend nominees to our board of directors.

Audit Committee

Our board of directors has established an audit committee. Thomas Ebeling, Anthony Rosenberg and Stephen Webster serve on the audit committee, which is chaired by Stephen Webster. Our board of directors has determined that each member of the audit committee is “independent” for audit committee purposes as that term is defined by the rules of the Securities and Exchange Commission (“SEC”), and Nasdaq Stock Market LLC (“Nasdaq”), and that each has sufficient knowledge in financial and auditing matters to serve on the audit committee. Our board of directors has designated Stephen Webster as an “audit committee financial expert,” as defined under the applicable rules of the SEC.

Delinquent Section 16(a) Reports

Section 16(a) of the Exchange Act requires our directors, executive officers and beneficial owners of more than 10% of our common stock to file reports of holdings and transactions in securities of the Company with the SEC. The SEC has designated specific deadlines for these reports, and we must identify in this Part III of our Annual Report on Form 10-K those persons who did not file these reports when due.

Based solely on a review of on Forms 3, 4 and 5 and any amendments thereto filed electronically with the SEC with respect to the most recent fiscal year and written representations from the reporting persons, we believe all Section 16(a) filing requirements were satisfied in 2023 with the exception of: the Form 4 filed by Jeffrey Trigilio on March 27, 2023 reporting the sale of 399 shares of common stock on March 20, 2023; the Form 4 filed by Jeffrey Jones on March 27, 2023 reporting the sale of 390 shares of common stock on March 20, 2023; the Form 4 filed by Jennifer Michaelson on March 27, 2023 reporting the sale of 238 shares of common stock on March 20, 2023; and the Form 4 filed by Jacquelyn Sumer on March 27, 2023 reporting the sale of 305 shares of common stock on March 20, 2023.

Item 11. Executive Compensation.

The compensation provided to our named executive officers for 2023 and 2022 is detailed in the 2023 Summary Compensation Table and accompanying footnotes and narrative that follow this table. Our named executive officers for 2023, which consist of the individual who served as our principal executive officer during 2023 and our next two most highly compensated executive officers, are:

- Nadim Ahmed, our President and Chief Executive Officer;
- Jeffrey Jones, our Chief Medical Officer; and
- Jeffrey Trigilio, our Chief Financial Officer.

2023 Summary Compensation Table

The following table presents total compensation awarded to, earned by or paid to our named executive officers for services rendered to us in all capacities during the years listed below.

Name and Principal Position	Year	Salary	Bonus ⁽¹⁾	Stock Awards ⁽²⁾	Option Awards ⁽²⁾	All Other Compensation	Total
Nadim Ahmed ⁽³⁾	2023	\$ 648,900	\$ 389,340	\$ 1,202,270 ⁽⁴⁾	\$ 1,645,420	\$ 122,276 ⁽⁵⁾	\$ 4,008,206
President and Chief Executive Officer	2022	\$ 618,000	\$ 370,800	\$ 2,762,750 ⁽⁶⁾	\$ —	\$ 148,977 ⁽⁵⁾	\$ 3,900,527
Jeffrey Jones, M.D. Chief Medical Officer	2023	\$ 492,200	\$ 236,256	\$ 680,400 ⁽⁴⁾	\$ 960,948	\$ 51,865 ⁽⁷⁾	\$ 2,421,669
Jeffrey Trigilio Chief Financial Officer	2023	\$ 474,600	\$ 404,811	\$ 532,980 ⁽⁴⁾	\$ 748,739	\$ 43,203 ⁽⁸⁾	\$ 2,204,333
	2022	\$ 452,000	\$ 260,352	\$ 510,000 ⁽⁴⁾	\$ 686,288	\$ 15,634 ⁽⁸⁾	\$ 1,924,274

- (1) The amounts reported for 2023 and 2022 represent discretionary cash bonuses paid by us based on our named executive officers' performance during such fiscal year. Additionally, for Mr. Trigilio, the amounts reported for 2023 and 2022 include a cash retention bonus for his continued service through August 2022, February 2023 and August 2023 in the amounts of \$180,800 for 2023 and \$45,200 for 2022.
- (2) The amounts reported represent the aggregate grant date fair value of the stock option and restricted stock unit ("RSUs") awards granted to the named executive officers during 2023 and 2022, respectively, computed in accordance with FASB ASC Topic 718, disregarding the effects of estimated forfeitures. The assumptions used to value the stock option and market-based RSU awards for this purpose are set forth in Note 9 to our consolidated financial statements included in this Annual Report on Form 10-K. Service-based RSUs are valued based on the closing price of our common stock on the grant date.
- (3) Mr. Ahmed also serves as a member of our board of directors but does not receive any additional compensation for his service as a director.
- (4) The amounts reported for 2023 for Mr. Ahmed and Dr. Jones and for both 2023 and 2022 for Mr. Trigilio represent the grant date fair value of their respective service-based RSUs, which were valued based on the closing price of our common stock on the grant date.

- (5) The amount reported for Mr. Ahmed for 2023 includes commuting and related travel expenses of \$37,608, the use of a corporate apartment valued at \$43,304, a housing allowance of \$24,000, and 401(k) matching contributions of \$16,500. The amount reported for Mr. Ahmed for 2022 includes commuting and related travel expenses of \$46,343, a housing allowance of \$87,000, and 401(k) matching contributions of \$15,250. The housing allowance reported for 2022 reflects \$15,000 in housing expenses for the portion of 2021 that Mr. Ahmed was employed by us but that were not paid to Mr. Ahmed until early 2022.
- (6) The amount reported represents the grant date fair value of Mr. Ahmed's market-based RSUs based upon the probable achievement level of the corporate stock price metrics associated with the award at the time of grant.
- (7) The amount reported for Dr. Jones for 2023 includes commuting and related travel expenses of \$34,501 and 401(k) matching contributions of \$16,500.
- (8) The amount reported for Mr. Trigilio for 2023 includes commuting and related travel expenses of \$25,839 and 401(k) matching contributions of \$16,500. The amount reported for Mr. Trigilio for 2022 includes 401(k) matching contributions of \$15,250.

Narrative to 2023 Summary Compensation Table

Overview

Our executive compensation program is designed to attract, retain and reward key employees and to align their interests with the interests of our stockholders. Our Chief Executive Officer makes recommendations to the compensation committee of our board of directors (our "compensation committee") about the compensation of his direct reports (except with respect to his own compensation), and our compensation committee is responsible for determining the compensation of our executive officers.

Our compensation committee has engaged Compensia as its independent compensation consultant since November 2022. Compensia assists the compensation committee in evaluating the Company's executive and director compensation practices, including program design, identification of an appropriate peer group for compensation comparison purposes and providing competitive market pay data. Our compensation committee assessed the independence of Compensia from management and, on the basis of that assessment and after taking into consideration the independence factors that are required to be considered under applicable stock exchange listing standards and SEC rules, determined that none of the work performed by Compensia gave rise to a conflict of interest or would compromise Compensia's independence.

Base Salary

During 2023 and 2022, the annual base salary for Mr. Ahmed was \$648,900 and \$618,000, respectively. During 2023, the annual base salary for Dr. Jones was \$492,200. During 2023 and 2022, the annual base salary for Mr. Trigilio was \$474,600 and \$452,000, respectively.

Bonus Arrangements

Pursuant to the terms of Mr. Ahmed's employment agreement, his target incentive bonus was 50% of his base salary in both 2023 and 2022. Based on our compensation committee's and board of directors' evaluation of his and the Company's performance during each of 2023 and 2022, Mr. Ahmed was awarded a discretionary bonus equal to 60% of his base salary.

Pursuant to the terms of Dr. Jones' employment agreement, his target incentive bonus was 40% of his base salary in 2023. Based on our compensation committee's evaluation of his and the Company's performance during 2023, Dr. Jones was awarded a discretionary bonus equal to 48% of his base salary.

Pursuant to the terms of Mr. Trigilio's employment agreement, his target incentive bonus was 40% of his base salary in both 2023 and 2022. Based on our compensation committee's evaluation of his and the Company's performance during 2023 and 2022, Mr. Trigilio was awarded a discretionary bonus equal to 47% and 48% of his base salary, respectively.

Additionally, Mr. Trigilio received a retention bonus as part of an initiative implemented broadly across the workforce. The purpose of the retention initiative was to ensure workforce stabilization and continuity during a transition period, especially for key roles given the company had 31 full time employees as of December 31, 2021. Pursuant to the supplemental bonus agreement entered into in February 2022, Mr. Trigilio was entitled to cash retention bonuses tied to continued service with the Company through August 2023. The total bonus amount was paid in installments according to the following payout schedule: 20% in August 2022, 40% in February 2023 and the remaining 40% in August 2023. Mr. Trigilio received \$180,800 in 2023 and \$45,200 in 2022 for his continued service through the respective payout dates.

Equity Compensation

Our employees and executive officers are eligible to receive stock options and other stock-based awards pursuant to our 2021 Stock Option and Incentive Plan (the “2021 Stock Plan”).

We believe that equity awards provide our executive officers with a strong link to our long-term performance, create an ownership culture and help to align the interests of our executive officers and our stockholders. In addition, we believe that equity awards with multi-year vesting requirements promote executive retention because they incentivize our executive officers to remain in our employment during the award's vesting period. Our compensation committee annually reviews the equity incentive compensation of our executive officers, including our named executive officers, and from time to time may grant equity awards to them. We typically grant equity awards in the form of stock options in connection with the commencement of an executive officer's employment and as a combination of both stock options and RSUs on an annual basis thereafter. We set option exercise prices at the closing market price of a share of our common stock on the date of grant (or the immediately preceding date on which a closing market price was reported if there is no closing market price on the date of grant).

On February 22, 2023, Mr. Ahmed was granted (i) an option to purchase 211,000 shares of our common stock at an exercise price of \$11.03 per share and (ii) RSUs that represent the right to receive, at settlement, 109,000 shares of our common stock (the “2023 Ahmed Equity Awards”). One forty-eighth of the shares underlying the 2023 Ahmed Equity Awards vest monthly, subject to continued service through each vesting date. The unvested portion of the 2023 Ahmed Equity Awards is subject to vesting acceleration in the event of a termination of Mr. Ahmed's employment by us without cause or by him for good reason (as such terms are defined in his employment agreement), in either case within 12 months following a change in control of the Company, also known as a “sale event” (as defined in the 2021 Stock Plan). On March 5, 2022, pursuant to the terms of his employment agreement, Mr. Ahmed was granted market-based RSUs that represent the right to receive, at settlement, 215,000 shares of our common stock. The number of shares subject to market-based RSUs represents the number of shares issuable upon vesting, assuming the Company achieves its corporate stock price metrics at the target achievement level. The number of shares issuable, if any, when the award vests will depend on the degree of achievement of corporate stock price metrics at the vesting date and ranges between 0% and 200% of the target number of shares. The market-based RSUs will vest and be settled three years from the grant date in an amount to be determined based on the price per share of our common stock at such time. The market-based RSUs are subject to vesting acceleration in the event of a change in control of the Company prior to the vesting date.

On February 17, 2023, Dr. Jones was granted (i) an option to purchase 120,000 shares of our common stock at an exercise price of \$11.34 per share and (ii) RSUs that represent the right to receive, at settlement, 60,000 shares of our common stock (the “2023 Jones Equity Awards”). One forty-eighth of the shares underlying the 2023 Jones Equity Awards vest monthly, subject to continued service through each vesting date. The unvested portions of the 2023 Jones Equity Awards are subject to vesting acceleration in the event of a termination of Dr. Jones' employment by us without cause or by him for good reason (as such terms are defined in his employment agreement), in either case within 12 months following a change in control of the Company, also known as a “sale event” (as defined in the 2021 Stock Plan).

On February 17, 2023, Mr. Trigilio was granted (i) an option to purchase 93,500 shares of our common stock at an exercise price of \$11.34 per share and (ii) RSUs that represent the right to receive, at settlement, 47,000 shares of our common stock (the “2023 Trigilio Equity Awards”). One forty-eighth of the shares underlying the 2023 Trigilio Equity Awards vest monthly, subject to continued service through each vesting date. On February 11, 2022, Mr. Trigilio was granted (i) an option to purchase 75,000 shares of our common stock at an exercise price of \$13.60 per share and (ii) RSUs that represent the right to receive, at settlement, 37,500 shares of our common stock, (the “2022 Trigilio Equity Awards”). One forty-eighth of the shares underlying the 2022 Trigilio Equity Awards vest monthly, subject to continued service through each vesting date. The unvested portions of the 2023 Trigilio Equity Awards and the 2022 Trigilio Equity Awards are subject to vesting acceleration in the event of a termination of Mr. Trigilio's employment by us without cause or by him for good reason (as such terms are defined in his employment agreement), in either case within 12 months following a change in control of the Company, also known as a “sale event” (as defined in the 2021 Stock Plan).

Employment Agreements with our Named Executive Officers

We have entered into employment agreements with each of our named executive officers. Each agreement sets forth such executive officer's base salary, target bonus percentage and eligibility to participate in our benefit plans generally. Each of our named executive officers is also subject to a confidentiality, assignment and non-solicitation agreement, which provides for a perpetual post-termination confidentiality covenant as well as non-solicitation of employees and consultants covenants that apply during employment and for one year following termination. The terms “cause”, “good reason” and “change in control” referred to below are defined in each named executive officer's employment agreement.

Nadim Ahmed

In October 2021, we entered into an employment agreement with Mr. Ahmed, who currently serves as our President and Chief Executive Officer. The employment agreement provides for an annual base salary, subject to periodic review by our board of directors or compensation committee, and an annual target bonus equal to 50% of Mr. Ahmed's annual base salary, with the actual amount of any bonus payable determined in the sole discretion of our board of directors or compensation committee based on milestones to be determined by our board of directors or compensation committee. Pursuant to his employment agreement, Mr. Ahmed received a sign-on bonus of \$625,000 and was also entitled to a housing allowance of \$6,000 per month. In May 2023, we entered into an amendment to Mr. Ahmed's employment agreement to permit use of a corporate apartment in lieu of the provision of a housing allowance. The employment agreement also provides for Mr. Ahmed to be nominated for election to our board of directors and to be recommended to our stockholders for election to our board of directors for so long as he remains our Chief Executive Officer.

Under Mr. Ahmed's employment agreement, in the event that Mr. Ahmed's employment is terminated by us without cause or Mr. Ahmed resigns for good reason, subject to the execution and effectiveness of a separation agreement, including a general release of claims in our favor and, in the Company's sole discretion, a one-year post-employment noncompetition agreement, he will be entitled to receive (i) an amount equal to 12 months of his then-current base salary plus a pro-rata portion of his annual bonus, based on actual performance for the year, and (ii) if Mr. Ahmed is participating in our group health plans immediately prior to his termination and elects COBRA health continuation, continuation of such group health coverage at the same rate as if he were an active employee, until the earliest of (A) the 12-month anniversary of his termination, (B) his eligibility for group medical plan benefits under any other employer's group medical plan or (C) the cessation of his continuation rights under COBRA. The employment agreement also provides that, in lieu of the payments and benefits described above, in the event that Mr. Ahmed's employment is terminated by us without cause or Mr. Ahmed resigns for good reason, in either case within 12 months following a change in control of the Company, subject to the execution and effectiveness of a general release of claims in our favor, he will be entitled to receive (i) an amount equal to 24 months of his then-current base salary (or his base salary in effect immediately prior to the change in control, if higher) plus his prorated annual bonus, based on actual performance for the year, and (ii) an amount equal to the premiums the Company would have paid to its group health plan provider or the COBRA provider as a monthly employer contribution if Mr. Ahmed had remained employed by the Company for an additional 24 months.

In addition, in the event of a termination of Mr. Ahmed's employment by us without cause or by him for good reason, in either case within 12 months following a change in control of the Company, all outstanding equity awards that vest solely based on time will become fully vested and nonforfeitable and any performance-based RSUs outstanding will vest pro-rata based on the period of Mr. Ahmed's employment during the applicable performance period.

Jeffrey Jones, M.D.

In February 2022, we entered into an employment agreement with Dr. Jones, who currently serves as our Chief Medical Officer. The employment agreement provides for an annual base salary, subject to periodic review by our board of directors or compensation committee, and an annual target bonus equal to 40% of Dr. Jones' annual base salary, with the actual amount of any bonus payable determined in the sole discretion of our board of directors or compensation committee, subject to the terms of any applicable incentive compensation plan of the Company. Pursuant to his employment agreement, Dr. Jones also received a sign-on bonus of \$100,000.

Under Dr. Jones' employment agreement, in the event that Dr. Jones' employment is terminated by us without cause or Dr. Jones resigns for good reason, subject to the execution and effectiveness of a separation agreement, including a general release of claims in our favor and, in the Company's sole discretion, a one-year post-employment noncompetition agreement, he will be entitled to receive (i) an amount equal to nine months of his then-current base salary plus a prorated bonus for the year of termination, based on the termination date, and (ii) if Dr. Jones is participating in our group health plans immediately prior to his termination and elects COBRA health continuation, continuation of such group health coverage at the same rate as if he were an active employee, until the earliest of (A) the nine-month anniversary of his termination, (B) his eligibility for group medical plan benefits under any other employer's group medical plan or (C) the cessation of his continuation rights under COBRA. Dr. Jones' employment agreement also provides that, in lieu of the payments and benefits described above, in the event that his employment is terminated by us without cause or he resigns for good reason, in either case within 12 months following a change in control of the Company, subject to the execution and effectiveness of a general release of claims in our favor, he will be entitled to receive (i) a lump sum cash payment equal to 12 months of his then-current base salary (or his base salary in effect immediately prior to the change in control, if higher) plus his annual target bonus for the then-current year (or the annual target bonus in effect immediately prior to the change in control, if higher), and (ii) if Dr. Jones is participating in our group health plans immediately prior to his termination and elects COBRA health continuation, continuation of such group health coverage at the same rate as if he were an active employee, until the earliest of (A) the 12-month anniversary of his termination, (B) his eligibility for group medical plan benefits under any other employer's group medical plan or (C) the cessation of his continuation rights under COBRA.

Dr. Jones' employment agreement also provides that in the event Dr. Jones' employment is terminated by us without cause or Dr. Jones resigns for good reason, in either case within 12 months following a change in control of the Company, each unvested stock option and outstanding equity award subject to time-based vesting will immediately accelerate and become fully vested and exercisable or nonforfeitable on the date of termination.

Jeffrey Trigilio

In connection with our initial public offering in 2021, we entered into a new employment agreement with Mr. Trigilio who currently serves as our Chief Financial Officer. His employment agreement provides for an annual base salary, subject to periodic review by our board of directors or compensation committee, and an annual target bonus equal to 40% of Mr. Trigilio's annual base salary, with the actual amount of any bonus payable determined in the sole discretion of our board of directors or compensation committee, subject to the terms of any applicable incentive compensation plan of the Company.

Under Mr. Trigilio's employment agreement, in the event that Mr. Trigilio's employment is terminated by us without cause or Mr. Trigilio resigns for good reason, subject to the execution and effectiveness of a separation agreement, including a general release of claims in our favor and, in the Company's sole discretion, a one-year post-employment noncompetition agreement, he will be entitled to receive (i) an amount equal to nine months of his then-current base salary plus a pro-rata portion of his annual target bonus, and (ii) if Mr. Trigilio is participating in our group health plans immediately prior to his termination and elects COBRA health continuation, continuation of such group health coverage at the same rate as if he were an active employee, until the earliest of (A) the nine-month anniversary of his termination, (B) his eligibility for group medical plan benefits under any other employer's group medical plan or (C) the cessation of his continuation rights under COBRA. Mr. Trigilio's employment agreement also provides that, in lieu of the payments and benefits described above, in the event that his employment is terminated by us without cause or he resigns for good reason, in either case within 12 months following a change in control of the Company, subject to the execution and effectiveness of a general release of claims in our favor, he will be entitled to receive (i) a lump sum cash payment equal to 12 months of his then-current base salary (or his base salary in effect immediately prior to the change in control, if higher) plus his annual target bonus for the then-current year (or the annual target bonus in effect immediately prior to the change in control, if higher), and (ii) if Mr. Trigilio is participating in our group health plans immediately prior to his termination and elects COBRA health continuation, continuation of such group health coverage at the same rate as if he were an active employee, until the earliest of (A) the 12-month anniversary of his termination, (B) his eligibility for group medical plan benefits under any other employer's group medical plan or (C) the cessation of his continuation rights under COBRA.

Mr. Trigilio's employment agreement also provides that in the event his employment ends as a result of his death or disability, unless otherwise set forth in an award agreement evidencing an equity award subject to performance-based vesting, 25% of each then-unvested equity award outstanding, plus an additional 5% for each full year of service to the Company, will immediately accelerate and become fully vested and exercisable or nonforfeitable on the date of termination. The employment agreement further provides that in the event Mr. Trigilio's employment is terminated by us without cause or Mr. Trigilio resigns for good reason, in either case within 12 months following a change in control of the Company, each outstanding equity award will immediately accelerate and become fully vested and exercisable or nonforfeitable on the date of termination.

2023 Outstanding Equity Awards at Fiscal Year End Table

The following table presents the outstanding equity awards held by each of our named executive officers as of December 31, 2023.

Name	Option Awards				Stock Awards			
	Number of securities underlying unexercised options exercisable	Number of securities underlying unexercised options unexercisable	Option exercise price	Option expiration date	Number of shares or units that have not vested	Market value of shares or units that have not vested ⁽¹⁾	Equity incentive plan awards: number of unearned shares, units or other rights that have not vested	Equity incentive plan awards: market or payout value of unearned shares, units or other rights that have not vested ⁽¹⁾
Nadim Ahmed	1,467,916	1,242,084 ⁽²⁾	\$ 21.12	10/17/2031	—	—	—	—
	43,958	167,042 ⁽²⁾	\$ 11.03	2/22/2033	—	—	—	—
	—	—	—	—	—	—	53,750 ⁽³⁾	547,713
Jeffrey Jones	98,541	116,459 ⁽⁵⁾	\$ 14.34	2/28/2032	86,292 ⁽⁴⁾	879,315	—	—
	25,000	95,000 ⁽²⁾	\$ 11.34	2/17/2033	—	—	—	—
	—	—	—	—	47,500 ⁽⁶⁾	484,025	—	—
Jeffrey Trigilio	182,473	47,418 ⁽⁵⁾	\$ 4.30	10/28/2030	—	—	—	—
	106,943	39,722 ⁽⁵⁾	\$ 21.00	12/30/2030	—	—	—	—
	34,375	40,625 ⁽²⁾	\$ 13.60	2/11/2032	—	—	—	—
	19,479	74,021 ⁽²⁾	\$ 11.34	2/17/2033	—	—	—	—
	—	—	—	—	20,313 ⁽⁷⁾	206,989	—	—
	—	—	—	—	37,209 ⁽⁶⁾	379,160	—	—

- (1) Amounts shown are based on a price of \$10.19 per share, which was the closing market price of our common stock as reported on the Nasdaq Global Select Market on the last trading day of the year, December 29, 2023.
- (2) Represents an option to purchase shares of our common stock, which vests in 48 monthly equal installments, generally subject to the named executive officer's continued service through each vesting date.
- (3) Represents shares of common stock underlying market-based RSUs granted on March 5, 2022, which vest three years from the grant date in an amount to be determined based on the price per share of our common stock at such time, assuming the Company achieves its corporate stock price metrics at the threshold achievement level.
- (4) Represents shares of common stock underlying service-based RSUs granted on February 22, 2023, which vest in 48 monthly equal installments, generally subject to the named executive officer's continued service through each vesting date.
- (5) Represents an option to purchase shares of our common stock, which vests as follows: 25% of the shares underlying the option vest on the first anniversary of the vesting commencement date and the remaining shares vest in 36 equal monthly installments thereafter, generally subject to the named executive officer's continued service through each vesting date.
- (6) Represents shares of common stock underlying service-based RSUs granted on February 17, 2023, which vest in 48 monthly equal installments, generally subject to the named executive officer's continued service through each vesting date.
- (7) Reflects shares of common stock underlying service-based RSUs granted on February 11, 2022, which vest in 48 monthly equal installments, generally subject to the named executive officer's continued service through each vesting date.

Compensation Risk Assessment

We do not believe that our executive compensation program encourages excessive or unnecessary risk taking. Our compensation program, including any performance-based compensation, is designed to encourage our named executive officers and other employees to remain focused on both short-term and long-term strategic goals. As a result, we do not believe that our compensation programs are reasonably likely to have a material adverse effect on us.

Employee Benefits

Our eligible U.S. employees, including our executive officers, participate in a tax-qualified retirement plan that provides an opportunity to save for retirement on a tax-advantaged basis. Plan participants are able to defer eligible compensation subject to applicable annual limits under the Internal Revenue Code of 1986, as amended (the “Code”). We make a safe harbor matching contribution equal to 100% of our employee’s deferrals, up to a maximum of 5% of the employee’s salary, subject to applicable Code limits.

All of our full-time employees, including our executive officers, are eligible to participate in certain medical, disability and life insurance benefit programs offered by us. We pay the premiums for term life insurance and short-term and long-term disability for all of our employees, including our executive officers. We also provide all employees, including our executive officers, paid time off benefits including, vacation, sick time and holidays. We do not sponsor any qualified or non-qualified defined benefit plans nor any non-qualified defined contribution plans for any of our employees or executive officers.

In accordance with our insider trading policy, our non-employee directors and executive officers may adopt written plans, known as Rule 10b5-1 plans, in which they will contract with a broker to buy or sell shares of our common stock on a periodic basis. Under a Rule 10b5-1 plan, a broker executes trades pursuant to parameters established by the director or officer when entering into the plan, without further direction from the director or officer. In addition, our directors and executive officers may buy or sell additional shares outside of a Rule 10b5-1 plan when they are not in possession of material, nonpublic information.

Director Compensation

2023 Director Compensation Table

The table below shows all compensation earned by or paid to our non-employee directors during 2023. Nadim Ahmed, our Chief Executive Officer, does not receive any compensation for his services as director and, consequently, is not included in this table. The compensation received by Mr. Ahmed during 2023 is set forth in the “Executive Compensation— 2023 Summary Compensation Table.”

Name	Fees Earned or Paid in Cash ⁽¹⁾	Option Awards (2)(3)	All Other Compensation	Total
Thomas Ebeling	\$ 55,750	\$ 164,452	\$ —	\$ 220,202
Anne-Marie Martin, Ph.D.	\$ — ⁽⁴⁾	\$ 164,452	\$ —	\$ 164,452
Anthony Rosenberg	\$ 93,250	\$ 164,452	\$ 27,133 ⁽⁵⁾	\$ 284,835
David P. Ryan, M.D.	\$ 43,750	\$ — ⁽⁶⁾	\$ —	\$ 43,750
Stephen Webster	\$ 63,500	\$ 164,452	\$ 4,289 ⁽⁵⁾	\$ 232,241

- (1) In June 2023, the compensation committee approved a revised schedule of non-employee director cash retainers to align with the director cash retainers provided at our peer companies based on information provided by Compensia. The amounts represent payment of board fees at the previously-set fees for one quarter of the year and the revised fees for three quarters of the year.
- (2) Amounts represent the aggregate grant date fair value of options to purchase shares of our common stock granted to our non-employee directors in 2023, computed in accordance with FASB ASC Topic 718, excluding the effect of estimated forfeitures. The assumptions used to value the options for this purpose are set forth in Note 9 to our consolidated financial statements included in this Annual Report on Form 10-K.
- (3) As of December 31, 2023, the aggregate number of shares of our common stock subject to outstanding option awards held by our non-employee directors was as follows: Mr. Ebeling, 126,949 shares; Dr. Martin, 55,330 shares; Mr. Rosenberg, 250,609 shares; Dr. Ryan, 26,150 shares; and Mr. Webster, 68,014 shares.
- (4) Dr. Martin does not receive cash retainer fees due to her agreement with the Company.
- (5) Consists of reimbursement of travel expenses.
- (6) Dr. Ryan commenced service as a director in November 2022 and therefore was ineligible for an Annual Grant in 2023 under the terms of our non-employee director compensation policy, as described below.

Non-Employee Director Compensation Policy

Under our non-employee director compensation policy, we pay our non-employee directors a cash retainer for service on the board of directors and for service on each committee on which the director is a member. The chairperson of our board of directors receives an additional annual retainer for such service. The fees are designed to enable us to attract and retain, on a long-term basis, highly qualified non-employee directors. In June 2023, the following increases to cash retainers for service on our board were approved based on market data of director compensation levels at our peer companies provided by Compensia: (i) the annual cash retainer for directors and the additional annual retainer for the non-executive chairman were increased from \$35,000 to \$40,000 and from \$30,000 to \$33,000, respectively, and (ii) the annual cash retainers for serving as the chairperson and a member of the Nominating and Corporate Governance Committee were increased from \$8,000 to \$10,000 and from \$4,000 to \$5,000, respectively. The schedule of non-employee director cash retainers in effect as of December 31, 2023 is set forth below.

	Annual Retainer
Board of Directors:	
Members	\$ 40,000
Additional retainer for non-executive chairperson	\$ 33,000
Audit Committee:	
Members (other than chairperson)	\$ 7,500
Chairperson	\$ 15,000
Compensation Committee:	
Members (other than chairperson)	\$ 5,000
Chairperson	\$ 10,000
Nominating and Corporate Governance Committee:	
Members (other than chairperson)	\$ 5,000
Chairperson	\$ 10,000

In addition, our non-employee director compensation policy provides that, upon initial election to our board of directors, each non-employee director will be granted an option to purchase shares of our common stock with a grant date fair value of \$275,000 (the "Initial Grant"). The Initial Grant vests in equal installments on the first, second and third anniversaries of the grant date, subject to continued service as a director through the applicable vesting date. Furthermore, on the date of each annual meeting of stockholders, each non-employee director who continues as a non-employee director following such meeting will be granted an option to purchase shares of our common stock with a grant date fair value of \$165,000 (the "Annual Grant"). The Annual Grant will vest in full on the earlier of (i) the first anniversary of the grant date or (ii) our next annual meeting of stockholders, subject to continued service as a director through the applicable vesting date. Directors are not entitled to the Annual Grant until they have been on the board for a full year. Initial Grants and Annual Grants vest in full upon the sale of the Company.

We reimburse all reasonable out-of-pocket expenses incurred by non-employee directors in attending meetings of the board of directors and committees.

Under the non-employee director compensation policy, the aggregate amount of compensation, including both equity compensation and cash compensation, paid to a non-employee director in any year for service as a director may not exceed \$500,000 (\$750,000 for the year in which the non-employee director is initially elected or appointed to our board of directors).

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

The following table sets forth information, to the extent known by us or ascertainable from public filings, with respect to the beneficial ownership of our common stock as of February 15, 2024 by:

- each of our directors;
- each of our named executive officers;
- all of our directors and executive officers as a group; and
- each person, or group of affiliated persons, who is known by us to be a beneficial owner of 5% or greater of the outstanding shares of our common stock.

The column entitled "Percentage of Shares Beneficially Owned" is based on a total of 43,055,645 shares of our common stock outstanding as of February 15, 2024.

Beneficial ownership is determined in accordance with the rules and regulations of the SEC and includes voting or investment power with respect to our common stock. Shares of our common stock that a person or entity has the right to acquire within 60 days of February 15, 2024 are considered outstanding and beneficially owned by the person or entity holding the rights for the purpose of calculating the percentage ownership of that person but not for the purpose of calculating the percentage ownership of any other person. Except as otherwise noted, the persons and entities in this table have sole voting and investing power with respect to all of the shares of our common stock beneficially owned by them, subject to community property laws, where applicable. Except as otherwise indicated in the table below, addresses of named beneficial owners are in care of Cullinan Oncology, Inc., One Main Street, Suite 1350, Cambridge, MA 02142.

Name of Beneficial Owner	Shares Beneficially Owned	Percentage of Shares Beneficially Owned
5% or Greater Stockholders		
UBS Oncology Impact Fund L.P. ⁽¹⁾	7,648,268	17.76%
Entities affiliated with BVF, Inc. ⁽²⁾	4,422,759	9.99%
Blue Owl Capital Holdings LP ⁽³⁾	3,419,842	7.94%
Entities affiliated with Franklin Resources, Inc. ⁽⁴⁾	3,281,280	7.62%
BlackRock, Inc. ⁽⁵⁾	2,462,274	5.72%
Entities affiliated with F2 Ventures ⁽⁶⁾	2,177,461	5.06%
Named Executive Officers and Directors		
Nadim Ahmed ⁽⁷⁾	1,717,765	3.84%
Jeffrey Jones, M.D. ⁽⁸⁾	156,920	*
Jeffrey Trigilio ⁽⁹⁾	418,145	*
Thomas Ebeling ⁽¹⁰⁾	176,003	*
Anne-Marie Martin, Ph.D. ⁽¹¹⁾	24,587	*
Anthony Rosenberg ⁽¹²⁾	277,161	*
David P. Ryan, M.D. ⁽¹³⁾	8,717	*
Stephen Webster ⁽¹⁴⁾	46,402	*
All executive officers and directors as a group (11 persons) ⁽¹⁵⁾	3,533,465	7.64%

* Less than one percent

- (1) Information herein is solely based on a Form 4 filed with the SEC on September 20, 2021 by (i) UBS Oncology Impact Fund L.P. (“OIF”), (ii) Oncology Impact Fund (Cayman) Management L.P. (“OIF GP”), (iii) MPM Oncology Impact Management LP (“MPM LP”), and (iv) MPM Oncology Impact Management GP LLC (“MPM GP”). The general partner of OIF is OIF GP. The general partner of OIF GP is MPM LP. The general partner of MPM LP is MPM GP. Dr. Ansbert Gadick was a member of our board of directors and is a managing member and the managing director of MPM GP. Each of the entities and individuals listed above expressly disclaims beneficial ownership of the securities listed above except to the extent of any pecuniary interest therein. The address of these entities 450 Kendall Street, Cambridge, MA 02142.

- (2) Information herein is based on a Schedule 13G/A filed with the SEC on February 14, 2024 and information available to us. The number of shares shown includes (i) 3,196,701 shares of common stock and (ii) 1,226,058 shares of common stock issuable upon the conversion of Series A Preferred Stock, par value \$0.0001 per share (“Preferred Stock”). BVF Inc. holds an aggregate of 647,500 shares of Preferred Stock, convertible into an aggregate of 6,475,000 shares of common stock, subject to certain limitations, including that the holder is prohibited from converting its Preferred Stock into shares of common stock if, as a result of the conversion, the holder, together with its affiliates, would beneficially own greater than 9.99% of the total common stock then issued and outstanding immediately following the conversion of such shares of Preferred Stock (the “Conversion Blocker”). As of February 15, 2024, the Conversion Blocker limits the conversion of Preferred Stock held by the holder to 1,226,058 shares out of the 6,475,000 shares underlying the Preferred Stock held by them. Biotechnology Value Fund, L.P. (“BVF”) is deemed to be the beneficial owner of 2,899,865 shares of common stock, 1,226,058 shares of which are issuable upon the conversion of Preferred Stock, all of which such entity reported having shared voting and dispositive power. BVF I GP LLC (“BVF GP”) is deemed to be the beneficial owner of 2,899,865 shares of common stock, 1,226,058 shares of which are issuable upon the conversion of Preferred Stock, all of which such entity reported having shared voting and dispositive power. Biotechnology Value Fund II, L.P. (“BVF2”) is deemed to be the beneficial owner of 1,321,582 shares of common stock, all of which such entity reported having shared voting and dispositive power. BVF II GP LLC (“BVF2 GP”) is deemed to be the beneficial owner of 1,321,582 shares of common stock, all of which such entity reported having shared voting and dispositive power. Biotechnology Value Trading Fund OS LP (“Trading Fund OS”) is deemed to be the beneficial owner of 154,259 shares, all of which such entity reported having shared voting and dispositive power. BVF Partners OS Ltd. (“Partners OS”) is deemed to be the beneficial owner of 154,259 shares, all of which such entity reported having shared voting and dispositive power. BVF GP Holdings LLC (“BVF GPH”) is deemed to be the beneficial owner of 4,221,447 shares of common stock, 1,226,058 shares of which are issuable upon conversion of Preferred Stock, all of which such entity reported having shared voting and dispositive power. BVF Partners L.P. (“Partners”) is deemed to be the beneficial owner of 4,422,759 shares of common stock, 1,226,058 shares of which are issuable upon conversion of Preferred Stock, all of which such entity reported having shared voting and dispositive power. BVF Inc. is deemed to be the beneficial owner of 4,422,759 shares of common stock, 1,226,058 shares of which are issuable upon conversion of Preferred Stock, all of which such entity reported having shared voting and dispositive power. Mark N. Lampert is deemed to be the beneficial owner of 4,422,759 shares of common stock, 1,226,058 shares of which are issuable upon conversion of Preferred Stock, all of which he reported as having shared voting and dispositive power. BVF GP is the general partner of BVF. BVF2 GP is the general partner of BVF2. Partners OS is the general partner of Trading Fund OS. BVF GPH is the sole member of each of BVF GP and BVF2 GP. Partners is the investment manager of BVF, BVF2, Trading Fund OS and is the sole member of Partners OS. BVF Inc. is the general partner of Partners. Mr. Lampert is a director and officer of BVF Inc. The address for correspondence for BVF, BVF GP, BVF2, BVF2 GP, BVF GPH, Partners, BVF Inc. and Mr. Lampert is 44 Montgomery St., 40th Floor, San Francisco, California 94104. The address for correspondence for Trading Fund OS and Partners OS is PO Box 309 Ugland House, Grand Cayman, KY1-1104, Cayman Islands.
- (3) Information herein is solely based on a Schedule 13G filed with the SEC on February 14, 2024. Blue Owl Capital Holdings LP is deemed to be the beneficial owner of 3,419,842 shares of common stock, all of which such entity reported having sole voting and dispositive power. The address for correspondence of Blue Owl Capital Holdings LP is 399 Park Avenue, New York, New York 10022.
- (4) Information herein is solely based on a Schedule 13G filed with the SEC on February 6, 2024. Franklin Resources, Inc. (“FRI”), through one or more open or closed end investment companies or other managed accounts is deemed to be the beneficial owner of 3,281,280 shares of common stock. Charles B. Johnson and Rupert H. Johnson, Jr. (the “Principal FRI Stockholders”) each own more than 10% of the outstanding common stock of FRI and are the principal stockholders of FRI. FRI and the Principal Stockholders may be deemed the beneficial owners of the stock held by persons or entities for whom or for which FRI subsidiaries provide investment management services. Franklin Advisers, Inc. reported having sole voting and dispositive power over 3,259,968 shares; Fiduciary Trust Company International reported having sole voting and dispositive power over 20,000 shares; and Fiduciary Trust International, LLC reported having sole voting and dispositive power over 1,312 shares. The address for correspondence of FRI and its affiliates is One Franklin Parkway, San Mateo, California 94403-1906.
- (5) Information herein is solely based on a Schedule 13G filed with the SEC on January 29, 2024. BlackRock, Inc. is deemed to be the beneficial owner of 2,462,274 shares of common stock, with respect to which such entity reported having sole voting power over 2,371,159 shares and sole dispositive power over 2,462,274 shares. The address for correspondence of BlackRock, Inc. is 50 Hudson Yards, New York, NY 10001.

- (6) Information herein is solely based on a Schedule 13G/A filed with the SEC on February 14, 2024. Globeways Holdings Ltd. (“Globeways”) is deemed to be the beneficial owner of 468,696 shares of common stock, all of which such entity reported having shared voting and dispositive power. F2 Bioscience I 2017 Ltd. (“F2 Bioscience 2017”) is deemed to be the beneficial owner of 66,390 shares of common stock, all of which such entity reported having shared voting and dispositive power. F2 MG Ltd. (“F2 MG”), is deemed to be the beneficial owner of 402,306 shares of common stock, all of which such entity reported having shared voting and dispositive power. Globeways Holdings II Ltd. (“Globeways II”) is deemed to be the beneficial owner of 1,013,334 shares of common stock, all of which such entity reported having shared voting and dispositive power. F2-TPO Investments, LLC (“F2 TPO”), is deemed to be the beneficial owner of 622,175 shares of common stock, all of which such entity reported having shared voting and dispositive power. F2 Bio TD, LLC (“F2 Bio”) is deemed to be the beneficial owner of 71,599 shares, all of which such entity reported having shared voting and dispositive power. F2 MC, LLC (“F2 MC”) is deemed to be the beneficial owner of 214,798 shares of common stock, all of which such entity reported having shared voting and dispositive power. F2 GC, LLC (“F2 GC”) is deemed to be the beneficial owner of 104,762 shares of common stock, all of which such entity reported having shared voting and dispositive power. Wolfways Holdings Limited (“Wolfways”) is deemed to be the beneficial owner of 487,628 shares of common stock, all of which such entity reported having shared voting and dispositive power. Morana Jovan-Embiricos is deemed to be the beneficial owner of 2,177,461 shares of common stock, with respect to which she reported having sole voting and dispositive power over 207,803 shares and shared voting and dispositive power over 1,969,658 shares. Dr. Morana Jovan-Embiricos was a member of our board of directors and is the founding director and shareholder of Globeways, which is the appointed manager of each of F2 Bioscience 2017 and F2 MG. Dr. Morana Jovan-Embiricos is also the founder of Globeways’ wholly-owned subsidiary Globeways II, which is the appointed manager of F2 TPO, F2 MC, F2 GC and F2 Bio. Dr. Morana Jovan-Embiricos is also the founder of Globeways’ wholly-owned subsidiary F2 Vision Management, which is the appointed manager of F2 Vision. Dr. Morana Jovan-Embiricos makes investment decisions on behalf of all such entities with respect to shares held by such entities. The address for correspondence of Dr. Morana Jovan-Embiricos, Globeways, F2 Bioscience 2017 and Globeways II is c/o LJ Management (Suisse) SA, 7 Rue de la Confédération, Geneva 1204, Switzerland. The address for correspondence of F2 MG is c/o GISEV (Suisse) SA, Contrada di Sassello 2, 6900 Lugano, Switzerland. The address for correspondence of F2 TPO, F2 Bio, F2 GC and F2 MC is c/o Twin Focus, 75 Park Plaza, Boston, MA 02116 USA. The address for correspondence of F2 Vision and F2 Vision Management is c/o Atalux, 74 Grand-Rue, Luxembourg V8L-1660.
- (7) Consists of (i) 18,788 shares of common stock held by Mr. Ahmed, (ii) 4,541 shares underlying RSUs which are vested within 60 days of February 15, 2024, and (iii) 1,694,436 shares subject to options held by Mr. Ahmed which are vested and exercisable within 60 days of February 15, 2024.
- (8) Consists of (i) 9,941 shares of common stock held by Dr. Jones, (ii) 2,500 shares underlying RSUs which are vested within 60 days of February 15, 2024, and (iii) 144,479 shares subject to options held by Dr. Jones which are vested and exercisable within 60 days of February 15, 2024.
- (9) Consists of (i) 25,964 shares of common stock held by Mr. Trigilio, (ii) 3,521 shares underlying RSUs which are vested within 60 days of February 15, 2024 and (iii) 388,660 shares subject to options held by Mr. Trigilio which are vested and exercisable within 60 days of February 15, 2024.
- (10) Consists of (i) 67,504 shares of common stock held by Mr. Ebeling and (ii) 108,499 shares subject to options held by Mr. Ebeling which are vested and exercisable within 60 days of February 15, 2024.
- (11) Consists of 24,587 shares subject to options held by Dr. Martin which are vested and exercisable within 60 days of February 15, 2024.
- (12) Consists of (i) 45,002 shares of common stock held by Mr. Rosenberg and (ii) 232,159 shares subject to options held by Mr. Rosenberg which are vested and exercisable within 60 days of February 15, 2024.
- (13) Consists of 8,717 shares subject to options held by Dr. Ryan which are vested and exercisable within 60 days of February 15, 2024.
- (14) Consists of 46,402 shares subject to options held by Mr. Webster which are vested and exercisable within 60 days of February 15, 2024.
- (15) Consists of (i) 359,552 shares of common stock (ii) 16,855 shares underlying RSUs which are vested within 60 days of February 15, 2024 and (iii) 3,157,058 shares subject to options which are vested and exercisable within 60 days of February 15, 2024.

Securities Authorized for Issuance under Equity Compensation Plans

The following table provides information as of December 31, 2023 with respect to the shares of our common stock that may be issued under our existing equity compensation plans.

Plan Category	Equity Compensation Plans as of December 31, 2023		
	Number of securities to be issued upon exercise of outstanding options, warrants and rights	Weighted-average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans (excluding securities in first column)
Equity compensation plans approved by security holders ⁽¹⁾⁽²⁾⁽³⁾	8,918,957	\$ 16.04	3,858,252
Equity compensation plans not approved by security holders ⁽⁴⁾	1,620,500	\$ 12.30	—
Total	10,539,457	\$ 15.46	3,858,252

- (1) Consists of the 2021 Stock Plan and our 2021 Employee Stock Purchase Plan (the "ESPP").
- (2) The 2021 Stock Plan provides that the number of shares reserved and available for issuance under the plan will automatically increase each January 1 by (i) 5% of the number of shares of our common stock outstanding on the immediately preceding December 31, or (ii) such lesser number of shares as determined by our compensation committee. On January 1, 2024, 2,145,004 additional shares were reserved for issuance under the 2021 Stock Plan pursuant to this provision.
- (3) The ESPP provides that the number of shares reserved and available for issuance under the plan will automatically increase each January 1 by the lesser of (i) 833,330 shares of common stock, (ii) 1% of the number of shares of our common stock outstanding on the immediately preceding December 31, or (iii) such lesser number of shares as determined by our board of directors. On January 1, 2024, 429,001 additional shares were reserved for issuance under the ESPP pursuant to this provision.
- (4) Consists of shares of common stock issuable upon exercise of outstanding stock options granted pursuant to the Nasdaq inducement grant exception as a component of employment compensation for employees. The inducement grants were made as an inducement material to employees entering into employment with us in accordance with Nasdaq Listing Rule 5635(c)(4).

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

Other than the compensation agreements and other arrangements described under “Executive Compensation” and “Director Compensation” in this Part III of the Annual Report on Form 10-K and the transactions described below, since January 1, 2022, there has not been and there is not currently proposed, any transaction or series of similar transactions to which we were, or will be, a party in which the amount involved exceeded, or will exceed, \$120,000 and in which any director, executive officer, holder of five percent or more of any class of our capital stock or any member of the immediate family of, or entities affiliated with, any of the foregoing persons, had, or will have, a direct or indirect material interest.

Agreements with Our Stockholders

Preferred Stock Financing Agreements

In connection with our preferred stock financings prior to our initial public offering (“IPO”), we entered into an investors’ rights agreement and stockholders agreement, in each case, with the purchasers of our preferred stock and certain holders of our common stock. All of the material provisions of these agreements terminated immediately prior to the completion of our IPO, other than the provisions relating to registration rights, which continued in effect following the completion of our IPO and entitle the holders of such rights to demand that we file a registration statement, subject to certain limitations, and to request that their shares be covered by a registration statement that we are otherwise filing.

Royalty Transfer Agreements

Cullinan Amber Corp. (“Cullinan Amber”), Cullinan Florentine Corp. (“Cullinan Florentine”), and Cullinan MICA Corp. (“Cullinan MICA”) are each party to royalty transfer agreements (the “Royalty Transfer Agreements”) with MPM Oncology Charitable Foundation, Inc., and UBS Optimus Foundation (together, the “Foundations”). Under each of these respective agreements, each Foundation is entitled to receive a low single digit royalty percentage of all global net sales of any products developed by the applicable subsidiary, subject to limitations after patent expirations and on intellectual property developed after a change of control.

Unless earlier terminated, each Royalty Transfer Agreement shall terminate on a country-by-country basis upon the later of (i) the date that is the 12th anniversary of the first commercial sale of that subsidiary’s product in such country and (ii) the expiration of the last to expire issued patent claim of any pre-acquisition intellectual property covering the composition or use of such that subsidiary’s product in such country. The Foundations are affiliated with OIF, which beneficially owns more than five percent of our outstanding common stock, and Dr. Gadické, a former member of our board of directors.

Simultaneously with the execution of each Royalty Transfer Agreement, Cullinan Amber, Cullinan Florentine, and Cullinan MICA each also entered into a letter agreement (the "Royalty Letter") with the Foundations and the Company. Pursuant to the Royalty Letters, the parties agreed that a portion of the cash consideration paid by the Company to the applicable subsidiary for the purchase of securities was to be treated as consideration for the right to receive a low single digit royalty percentage of all global net sales of any company products received by the applicable subsidiary (the "Royalty Stream"). Further, effective immediately subsequent to the purchase by the Company of the Royalty Stream, the Company transferred its rights under the Royalty Stream to the Foundations by directing the applicable subsidiary to execute, deliver, and perform a Royalty Transfer Agreement. In June 2022, in connection with the sale of our equity interest in Cullinan Pearl Corp. ("Cullinan Pearl") to Taiho Pharmaceutical Co., Ltd. ("Taiho"), we amended the Royalty Transfer Agreement and Royalty Letter applicable to Cullinan Pearl to provide that the applicable Royalty Stream would not include the net sales of products owned or controlled by Taiho that are commercialized by or on behalf of Taiho in Japan. The form of royalty transfer agreement is filed as Exhibit 10.21 to our Registration Statement on Form S-1 filed on December 18, 2020.

Employment Agreements

We have entered into employment agreements with our executive officers. For more information regarding the agreements with our named executive officers, see "Executive Compensation—Employment Agreements."

Indemnification Agreements

We have entered into agreements to indemnify our directors and executive officers. These agreements will, among other things, require us to indemnify these individuals for certain expenses (including attorneys' fees), judgments, fines and settlement amounts reasonably incurred by such person in any action or proceeding, including any action by or in our right, on account of any services undertaken by such person on behalf of our Company or that person's status as a member of our board of directors to the maximum extent allowed under Delaware law.

Related Person Transaction Policy

Our board of directors reviews and approves transactions with directors, officers and holders of five percent or more of our voting securities and their affiliates, each a related party. Our related party transactions policy provides that such transactions must be approved by our audit committee. Pursuant to this policy, the audit committee has the primary responsibility for reviewing and approving or disapproving "related party transactions," which are transactions between us and related persons in which the aggregate amount involved exceeds or may be expected to exceed \$120,000 and in which a related person has or will have a direct or indirect material interest. For purposes of this policy, a related person is defined as a director, executive officer, nominee for director, or greater than 5% beneficial owner of our common stock, in each case since the beginning of the most recently completed year, and their immediate family members.

Director Independence

Applicable Nasdaq rules require a majority of a listed company's board of directors to be comprised of independent directors. In addition, the Nasdaq rules require that, subject to specified exceptions, each member of a listed company's audit, compensation and nominating and corporate governance committees be independent and that audit committee members also satisfy independence criteria set forth in Rule 10A-3 under the Exchange Act and that compensation committee members satisfy independence criteria set forth in Rule 10C-1 under the Exchange Act. Under applicable Nasdaq rules, a director will only qualify as an "independent director" if, in the opinion of the listed company's board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. In order to be considered independent for purposes of Rule 10A-3, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors, or any other board committee, accept, directly or indirectly, any consulting, advisory, or other compensatory fee from the listed company or any of its subsidiaries or otherwise be an affiliated person of the listed company or any of its subsidiaries. In addition, in affirmatively determining the independence of any director who will serve on a company's compensation committee, Rule 10C-1 under the Exchange Act requires that a company's board of directors must consider all factors specifically relevant to determining whether a director has a relationship to such company which is material to that director's ability to be independent from management in connection with the duties of a compensation committee member, including: the source of compensation to the director, including any consulting, advisory or other compensatory fee paid by such company to the director, and whether the director is affiliated with the company or any of its subsidiaries or affiliates.

Our board of directors has determined that all current members of the board of directors, except Nadim Ahmed, are independent directors, including for purposes of the rules of Nasdaq and the SEC. In making such independence determination, our board of directors considered the relationships that each non-employee director has with us and all other facts and circumstances that our board of directors deemed relevant in determining their independence, including the beneficial ownership of our capital stock by each non-employee director. In considering the independence of the directors listed above, our board of directors considered the association of our directors with the holders of more than 5% of our common stock. There are no family relationships among any of our directors or executive officers. Mr. Ahmed is not an independent director under these rules because he is our President and Chief Executive Officer.

Item 14. Principal Accountant Fees and Services.

We incurred the following fees from KPMG LLP for the audit of the consolidated financial statements and for other services provided during 2023 and 2022.

Fee Category	2023	2022
Audit fees ⁽¹⁾	\$ 836,166	\$ 702,500
Audit-related fees ⁽²⁾	—	—
Tax fees ⁽³⁾	393,638	307,420
All other fees ⁽⁴⁾	—	—
Total Fees	\$ 1,229,804	\$ 1,009,920

- (1) Audit fees consist of fees for the professional services rendered by KPMG for the audit of our annual financial statements, the financial statements included in our Form 10-Qs, the review of our interim financial statements, comfort letters and consents.
- (2) There were no audit-related fees for 2023 and 2022.
- (3) Tax fees consist of fees for tax compliance, tax advice and tax planning.
- (4) There were no other fees for 2023 and 2022.

Audit Committee Pre-approval Policy and Procedures

Our audit committee has adopted policies and procedures relating to the approval of all audit and non-audit services that are to be performed by our independent registered public accounting firm. This policy provides that we will not engage our independent registered public accounting firm to render audit or non-audit services unless the service is specifically approved in advance by our audit committee or the engagement is entered into pursuant to the pre-approval procedure described below.

From time to time, our audit committee may pre-approve specified types of services that are expected to be provided to us by our independent registered public accounting firm during the next 12 months. Any such pre-approval details the particular service or type of services to be provided and is also generally subject to a maximum dollar amount.

During 2023 and 2022, no services were provided to us by KPMG LLP other than in accordance with the pre-approval policies and procedures described above.

PART IV

Item 15. Exhibits and Financial Statement Schedules.

- (1) For a list of the financial statements included herein, see Index to the Consolidated Financial Statements on page F-1 of this Annual Report on Form 10-K, incorporated into this Item by reference.
- (2) Financial statement schedules have been omitted because they are either not required or not applicable or the information is included in the consolidated financial statements or the notes thereto included in this Annual Report on Form 10-K.
- (3) The exhibits filed as part of this Annual Report on Form 10-K are set forth on the Exhibit Index immediately following our consolidated financial statements. The Exhibit Index is incorporated herein by reference.

Item 16. Form 10-K Summary.

None.

CULLINAN ONCOLOGY, INC.

INDEX TO FINANCIAL STATEMENTS

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Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors
Cullinan Oncology, Inc.:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Cullinan Oncology, Inc. and subsidiaries (the Company) as of December 31, 2023 and 2022, the related consolidated statements of operations and comprehensive income (loss), stockholders' equity, and cash flows for the years then ended, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2023 and 2022, and the results of its operations and its cash flows for the years then ended, in conformity with U.S. generally accepted accounting principles.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated 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 consolidated 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 consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ KPMG LLP

We have served as the Company's auditor since 2018.

Boston, Massachusetts
March 14, 2024

CULLINAN ONCOLOGY, INC.
CONSOLIDATED BALANCE SHEETS
(in thousands, except share amounts)

	December 31,	
	2023	2022
Assets		
Current assets:		
Cash and cash equivalents	\$ 98,434	\$ 156,152
Short-term investments	368,633	311,140
Prepaid expenses and other current assets	13,124	7,180
Total current assets	480,191	474,472
Property and equipment, net	989	1,174
Operating lease right-of-use assets	2,543	4,130
Other assets	459	459
Long-term investments	—	80,882
Total assets	<u>\$ 484,182</u>	<u>\$ 561,117</u>
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	\$ 2,493	\$ 2,660
Accrued expenses and other current liabilities	24,204	14,135
Income tax payable	—	4,282
Operating lease liabilities, current	1,440	1,421
Total current liabilities	28,137	22,498
Long-term liabilities:		
Operating lease liabilities, net of current portion	2,150	3,590
Total liabilities	<u>30,287</u>	<u>26,088</u>
Commitments and contingencies (Note 12)		
Stockholders' equity:		
Preferred stock, \$0.0001 par value, 10,000,000 shares authorized as of December 31, 2023 and 2022; 647,500 and no shares issued and outstanding as of December 31, 2023 and 2022, respectively.	—	—
Common stock, \$0.0001 par value, 150,000,000 shares authorized as of December 31, 2023 and 2022; 42,900,083 and 45,796,449 shares issued and outstanding as of December 31, 2023 and 2022, respectively.	4	5
Additional paid-in capital	654,685	585,320
Accumulated other comprehensive loss	(129)	(2,601)
Accumulated deficit	(200,857)	(47,695)
Total Cullinan stockholders' equity	453,703	535,029
Noncontrolling interests	192	—
Total stockholders' equity	453,895	535,029
Total liabilities and stockholders' equity	<u>\$ 484,182</u>	<u>\$ 561,117</u>

See accompanying notes to the consolidated financial statements.

CULLINAN ONCOLOGY, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME (LOSS)
(in thousands, except per share amounts)

	2023	2022
Operating expenses:		
Research and development	\$ 148,156	\$ 91,948
General and administrative	42,493	40,189
Total operating expenses	190,649	132,137
Impairment of long-lived assets	(440)	—
Gain on sale of Cullinan Pearl	—	276,785
Income (loss) from operations	(191,089)	144,648
Other income (expense):		
Interest income	21,627	6,611
Other income (expense), net	239	57
Net income (loss) before income taxes	(169,223)	151,316
Income tax expense (benefit)	(14,122)	42,121
Net income (loss)	(155,101)	109,195
Net loss attributable to noncontrolling interests	(1,939)	(2,019)
Net income (loss) attributable to common stockholders of Cullinan	<u>\$ (153,162)</u>	<u>\$ 111,214</u>
Comprehensive income (loss):		
Net income (loss)	\$ (155,101)	\$ 109,195
Unrealized gain (loss) on investments	2,472	(1,763)
Comprehensive income (loss)	\$ (152,629)	\$ 107,432
Comprehensive loss attributable to noncontrolling interests	(1,939)	(2,019)
Comprehensive income (loss) attributable to Cullinan	<u>\$ (150,690)</u>	<u>\$ 109,451</u>
Net income (loss) per share attributable to common stockholders of Cullinan:		
Basic	\$ (3.69)	\$ 2.46
Diluted	\$ (3.69)	\$ 2.38
Weighted-average shares used in computing net income (loss) per share attributable to common stockholders of Cullinan:		
Basic	41,550	45,164
Diluted	41,550	46,640

See accompanying notes to the consolidated financial statements.

CULLINAN ONCOLOGY, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(in thousands, except share amounts)

	Preferred Stock		Common Stock		Additional Paid-In Capital		Accumulated Other Comprehensive Loss		Accumulated Deficit	Noncontrolling Interests in Subsidiaries	Total Stockholders' Equity
	Shares	Amount	Shares	Amount	4	\$	\$	\$	\$	\$	\$
Balances at December 31, 2021	—	\$ —	44,292,102	\$ —	—	\$ —	584,714	\$ (838)	\$ (158,909)	403	\$ 425,374
Contributions from noncontrolling interests	—	—	—	—	—	—	—	—	—	1,527	1,527
Acquisition of noncontrolling interests	—	—	—	—	—	—	(32,706)	—	—	(575)	(33,281)
Net issuance of common stock under equity-based compensation plans	—	—	1,504,347	1	—	—	6,019	—	—	—	6,020
Equity-based compensation	—	—	—	—	—	—	27,293	—	—	664	27,957
Unrealized loss on investments	—	—	—	—	—	—	—	(1,763)	—	—	(1,763)
Net income (loss)	—	—	—	—	—	—	—	—	111,214	(2,019)	109,195
Balances at December 31, 2022	—	—	45,796,449	5	—	—	585,320	(2,601)	(47,695)	—	535,029
Contributions from noncontrolling interests	—	—	—	—	—	—	—	—	—	2,131	2,131
Issuance of common stock	—	—	3,310,000	—	—	—	38,388	—	—	—	38,388
Issuance of preferred stock in exchange for common stock	647,500	—	(6,475,000)	(1)	—	—	1	—	—	—	—
Net issuance of common stock under equity-based compensation plans	—	—	268,634	—	—	—	538	—	—	—	538
Equity-based compensation	—	—	—	—	—	—	30,438	—	—	—	30,438
Unrealized gain on investments	—	—	—	—	—	—	—	2,472	—	—	2,472
Net loss	—	—	—	—	—	—	—	—	(153,162)	(1,939)	(155,101)
Balances at December 31, 2023	647,500	\$ —	42,900,083	4	—	\$ —	654,685	(129)	\$ (200,857)	192	\$ 453,895

See accompanying notes to the consolidated financial statements.

CULLINAN ONCOLOGY, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	2023	2022
Operating activities:		
Net income (loss)	\$ (155,101)	\$ 109,195
Adjustments to reconcile net income (loss) to net cash used in operating activities:		
Equity-based compensation expense	30,438	27,957
Amortization (accretion) on marketable securities	(10,154)	1,294
Impairment of long-lived assets	440	—
Depreciation and amortization	310	93
Non-cash contributions from noncontrolling interests	131	374
Gain on sale of Cullinan Pearl	—	(276,785)
Realized loss on marketable securities	—	109
Gain on disposal of fixed assets	—	(77)
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	(5,944)	(1,130)
Accounts payable	(167)	(509)
Accrued expenses and other liabilities	10,054	8,533
Income tax payable	(4,282)	4,282
Net cash used in operating activities	(134,275)	(126,664)
Investing activities:		
Proceeds from maturities of marketable securities	409,397	352,933
Purchase of marketable securities	(373,383)	(377,916)
Purchase of property and equipment	(208)	(1,133)
Sale of Cullinan Pearl, net of cash transferred with sale of \$2,898	—	275,000
Proceeds from sale of property and equipment	—	91
Net cash provided by investing activities	35,806	248,975
Financing activities:		
Proceeds from issuance of common stock	38,388	—
Proceeds from net issuance of convertible notes	1,825	2,375
Proceeds from net issuance of common stock under equity-based compensation plans	538	6,020
Acquisition of noncontrolling interests	—	(33,281)
Repayment of convertible note	—	(2,200)
Contributions from noncontrolling interests	—	1,153
Net cash provided by (used in) financing activities	40,751	(25,933)
Net increase (decrease) in cash and cash equivalents	(57,718)	96,378
Cash and cash equivalents at beginning of period	156,152	59,774
Cash and cash equivalents at end of period	\$ 98,434	\$ 156,152

SUPPLEMENTAL NONCASH DISCLOSURE

Non-cash investing and financing activities and supplemental cash flow information		
Conversion of convertible note into noncontrolling interest	\$ 2,000	\$ —
Purchases of property and equipment included in accounts payable and accrued expenses and other liabilities	\$ —	\$ 71
Cash paid (refunded) for income taxes	\$ (4,433)	\$ 37,801

See accompanying notes to consolidated financial statements.

CULLINAN ONCOLOGY, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(1) Nature of Business and Basis of Presentation

Organization

Cullinan Oncology, Inc., together with its consolidated subsidiaries ("Cullinan" or "the Company"), is a clinical-stage biopharmaceutical company focused on developing modality-agnostic targeted oncology therapies that was incorporated in September 2016 and has a principal place of business in Cambridge, Massachusetts.

Liquidity

The Company has incurred significant operating losses, with the exception of 2022, and negative cash flows from operations since its inception and expects to continue to generate operating losses for the foreseeable future. Cullinan's ultimate success depends on the outcome of its research and development activities as well as the ability to commercialize the Company's product candidates. Cullinan is subject to a number of risks including, but not limited to, the need to obtain adequate additional funding for the ongoing and planned clinical development of its product candidates. Due to the numerous risks and uncertainties associated with pharmaceutical products and development, the Company is unable to accurately predict the timing or amount of funds required to complete development of its product candidates, and costs could exceed Cullinan's expectations for a number of reasons, including reasons beyond the Company's control.

Since inception, Cullinan has funded its operations primarily through the sale of equity securities and from licensing or selling the rights to its product candidates. The Company expects that its cash, cash equivalents, short-term investments, and interest receivable of \$468.3 million as of December 31, 2023, will be sufficient to fund its operating expenses and capital expenditure requirements through the next twelve months from the date of issuance of these consolidated financial statements.

(2) Summary of Significant Accounting Policies

Basis of Presentation

The accompanying consolidated financial statements of the Company have been prepared in conformity with accounting principles generally accepted in the United States ("U.S. GAAP") and in accordance with applicable rules and regulations of the Securities and Exchange Commission ("SEC") for financial reporting and include accounts of the Company and its consolidated subsidiaries.

Principles of Consolidation

The Company consolidates entities in which it has a controlling financial interest. The Company evaluates each of its subsidiaries to determine whether the entity represents a variable interest entity ("VIE") for which consolidation should be evaluated under the VIE model, or alternatively, if the entity is a voting interest entity, for which consolidation should be evaluated using the voting interest model ("VOE"). Under the VOE, the Company consolidates the entity if it determines 1) that it directly, or indirectly, has greater than 50% of the voting shares or other equity holders do not have substantive voting, participation, or liquidation rights, or 2) when the company has a controlling financial interest through its control of the board of directors, and the significant decisions of the entity are made at the board level. The Company concluded that none of its subsidiaries is a VIE and has consolidated each of its subsidiaries under the VOE. Intercompany balances and transactions have been eliminated in consolidation.

Use of Estimates

The preparation of Cullinan's consolidated financial statements and accompanying notes in conformity with U.S. GAAP requires the Company's management to make estimates and judgments that affect the amounts reported in the financial statements. On an ongoing basis, Cullinan's management evaluates its estimates, which include, but are not limited to, estimates related to prepaid and accrued research and development expenses, equity-based compensation, income taxes, and the fair value of royalty transfer agreements. Management's estimates could change period to period based on changes in facts and circumstances. The Company's management bases its estimates on historical experience and on other relevant assumptions that are believed to be reasonable. Actual results may differ materially from these estimates.

Segments

Cullinan has determined that its Chief Executive Officer is the Chief Operating Decision Maker ("CODM"). The Company operates and manages the business as one reporting and one operating segment, which is the business of developing early-stage cancer therapeutics. Cullinan's CODM reviews financial information on an aggregate basis for purposes of allocating resources and evaluating financial performance. All of the Company's long-lived assets were located in the U.S. as of each of December 31, 2023 and 2022. Expenditures for additions to long-lived assets included purchases of property and equipment in each of 2023 and 2022.

Concentration of Risk

Cullinan had no significant concentration of credit risk as of December 31, 2023. Cash and cash equivalents are primarily maintained with three financial institutions in the U.S. as of December 31, 2023. Deposits at banks may exceed the insurance provided on such deposits. These deposits may be redeemed upon demand, and therefore, bear minimal risk. Under our investment policy, the Company limits amounts invested in such securities by investment type, credit rating, maturity, industry group and issuer. The goals of our investment policy are (i) safety and preservation of principal and diversification of risk and (ii) liquidity of investments sufficient to meet cash flow requirements.

Cullinan is subject to certain risks and uncertainties and believes that changes in any of the following areas could have a material adverse effect on future financial position or results of operations: ability to conduct and complete preclinical and clinical trials of our current and future product candidates; ability to obtain future financing; ability to build a successful pipeline of product candidates, including efficient expenditures of its resources; regulatory approval and market acceptance of, and reimbursement for, current and future product candidates; protection of Cullinan's intellectual property, including litigation or claims against the Company based on intellectual property, patent, product, regulatory or other factors; performance of third-party clinical research organizations and manufacturers upon which the Company relies; and Cullinan's ability to attract and retain employees necessary to support its growth.

The Company is dependent and expects to continue to be dependent on a small number of third-party manufacturers to supply drug product and drug substance for research and development activities in its programs. These programs could be adversely affected by a significant interruption in supply.

Cash and Cash Equivalents

The Company considers all highly liquid investments with original maturities of three months or less at the time of purchase to be cash equivalents. As of each of December 31, 2023 and 2022, cash equivalents consist of government-backed money market funds.

Investments

Cullinan generally holds investments in marketable securities. Investments not classified as cash equivalents with maturities of less than twelve months are classified as short-term investments in the consolidated balance sheets. Investments with maturities greater than twelve months for which the Company has the intent and ability to hold the investment for greater than twelve months are classified as long-term investments in the consolidated balance sheets.

The amortized cost of marketable securities is adjusted for amortization of premiums and accretion of discounts to maturity. Such amortization and accretion is included in interest income. Dividends are also included in interest income. Interest receivable is included in prepaid expenses and other current assets on the consolidated balance sheets and represents accrued and unpaid interest on Cullinan's marketable securities. The Company periodically reviews its marketable securities for impairment and adjusts these investments to their fair value when a decline in market value is deemed to be other than temporary. Declines in fair value judged to be other-than-temporary on marketable securities, if any, are included in other income (expense), net.

Fair Value of Financial Instruments

Cullinan has certain financial assets and liabilities recorded at fair value which have been classified as Level 1, 2 or 3 within the fair value hierarchy as described in the accounting standards for fair value measurements. The three levels of the fair value hierarchy are described below:

- Level 1—Unadjusted quoted prices for identical assets or liabilities in active markets that the Company has the ability to access;
- Level 2—Quoted prices for similar assets and liabilities in active markets or other market-observable inputs such as interest rates, yield curves and foreign currency spot rates; and
- Level 3—Pricing or valuations that require inputs that are both significant to the fair value measurement and unobservable.

There were no transfers of financial assets or liabilities measured at fair value between Level 1 and Level 2, and there were no Level 3 investments during 2023 or 2022.

Cullinan's financial assets recorded at fair value consist of investments. The fair value of the Company's investments is primarily determined using market quotations or prices obtained from independent pricing sources.

As of December 31, 2023 and 2022, the fair values of cash and cash equivalents, prepaid expenses and other current assets, accounts payable, accrued expenses and other current liabilities approximated their carrying values due to the short-term nature of these instruments.

Property and Equipment, net

Property and equipment is stated at cost less accumulated depreciation. Depreciation expense is recognized using the straight-line method over the estimated useful life of each asset as follows:

Asset Class	Estimated Useful Life
Office furniture and equipment	5 years
Leasehold improvements	Shorter of the useful life of the asset or the lease term

Maintenance and repairs that do not improve or extend the life of the assets are expensed when incurred. Upon disposal or retirement of assets, the cost and accumulated depreciation and amortization are removed from the consolidated balance sheets and any resulting gain or loss is reflected in the consolidated statements of operations and comprehensive income (loss).

Leases

Cullinan determines if an arrangement is a lease at inception. A contract is or contains a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. The Company classifies leases at the lease commencement date as operating or finance leases and records a right-of-use asset ("ROU") and a lease liability on the consolidated balance sheets for all leases with an initial lease term of greater than 12 months. Leases with an initial term of 12 months or less are not recorded in the balance sheet, and payments are recognized as expense on a straight-line basis over the lease term.

Cullinan enters into contracts that contain both lease and non-lease components. Non-lease components may include maintenance, utilities and other operating costs. The Company combines the lease and non-lease components of fixed costs in its lease arrangements as a single lease component. Variable costs, such as utilities or maintenance costs, are not included in the measurement of ROU assets and lease liabilities but rather are expensed when the event determining the amount of variable consideration to be paid occurs.

Operating lease assets and liabilities are recognized at the lease commencement date based on the present value of the lease payments over the lease term using the discount rate implicit in the lease. If the discount rate is not readily determinable, Cullinan utilizes an estimate of its incremental borrowing rate based upon the available information at the lease commencement date. Operating lease assets are further adjusted for prepaid or accrued lease payments. Operating lease payments are expensed using the straight-line method as an operating expense over the lease term. The Company's lease terms may include options to extend or terminate the lease when it is reasonably certain that Cullinan will exercise that option.

Impairment of Long-Lived Assets

Long-lived assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to future undiscounted net cash flows expected to be generated. Impairment charges are recognized at the amount by which the carrying amount of an asset exceeds the fair value of the asset. Assets to be disposed of are reported at the lower of the carrying amount or the fair value less costs to sell.

Noncontrolling Interests

Noncontrolling interests represent third-party interests in the Company's subsidiaries. Cullinan determines the amount of the noncontrolling interests in the net assets of the Company's subsidiaries at each balance sheet date using the hypothetical liquidation at book value ("HLBV") method. Under the HLBV method, the amounts reported as noncontrolling interests in the consolidated balance sheets represent the amounts third parties would hypothetically receive at each balance sheet date under the liquidation provisions of the subsidiaries, assuming the net assets of the subsidiaries were liquidated at their recorded amounts determined in accordance with U.S. GAAP and distributed to the owners of the subsidiaries. Net income (loss) attributable to noncontrolling interests on the consolidated statements of operations and comprehensive income (loss) is determined as the difference in the noncontrolling interest in the consolidated balance sheets between the start and end of each reporting period, after taking into account any capital transactions between the subsidiaries and third parties.

Revenue Recognition

Revenue is recognized when a customer obtains control of promised goods or services. The amount of revenue recognized reflects the consideration to which Cullinan expects to be entitled in exchange for these goods and services. To achieve this core principle, the Company applies the following five steps: 1) identify the customer contract; 2) identify the contract's performance obligations; 3) determine the transaction price; 4) allocate the transaction price to the performance obligations; and 5) recognize revenue when or as a performance obligation is satisfied.

Licensing arrangements are analyzed to determine whether the promised goods or services, which could include licenses and research and development materials and services, are distinct or whether they must be accounted for as part of a combined performance obligation.

The transaction price is determined based on the consideration to which Cullinan will be entitled. The transaction price may include fixed amounts, variable amounts, or both. The Company reevaluates the probability of realizing such variable consideration and any related constraints at each reporting period. Cullinan includes variable consideration in the transaction price to the extent it is probable that a significant reversal in the amount of cumulative revenue recognized will not occur.

The Company allocates the transaction price based on the estimated standalone selling price of the underlying performance obligations. Cullinan must develop assumptions that require judgment to determine the standalone selling price for each performance obligation identified in the contract. The Company utilizes key assumptions to determine the standalone selling price, which may include other comparable transactions, pricing considered in negotiating the transaction and the estimated costs to complete the respective performance obligation. Cullinan also utilizes judgment in assessing whether or not variable consideration is constrained or if it can be allocated specifically to one or more performance obligations in the arrangement.

When a performance obligation is satisfied, revenue is recognized for the amount of the transaction price allocated to that performance obligation on a relative standalone selling price basis, which excludes estimates of variable consideration that are constrained. Significant management judgment is required in determining the level of effort required under an arrangement and the period over which the Company is expected to complete its performance obligations under an arrangement.

For performance obligations consisting of licenses and other promises, Cullinan utilizes judgment to assess whether the combined performance obligation is satisfied over time or at a point in time and the recognition pattern for the portion of the transaction price allocated to the performance obligation.

Research and Development Expenses

Research and development costs are expensed as incurred. Research and development expenses consist primarily of employee compensation costs and amounts incurred with third parties for the provision of services for product candidate development, clinical and preclinical development and related supply and manufacturing costs, and regulatory compliance costs. At the end of the reporting period, the Company compares payments made to third-party service providers to the estimated progress toward completion of the research or development objectives. Such estimates are subject to change as additional information becomes available. Depending on the timing of payments to the service providers and the progress that Cullinan estimates has been made as a result of the service provided, the Company may record net prepaid or accrued expense relating to these costs.

Costs incurred to obtain licenses are recognized as research and development expense as incurred if the technology licensed has no alternative future use. Advance payments for goods or services to be received in the future for use in research and development activities are recorded as prepaid expenses. The prepaid amounts are expensed as the related goods are received or services are performed.

Cullinan has entered into various research and development related contracts with parties both inside and outside of the U.S. The payments related to these agreements are recorded as research and development expenses as incurred. The Company records accrued liabilities for estimated ongoing research and development costs. When evaluating the adequacy of the accrued liabilities, Cullinan analyzes progress of the studies or clinical trials, including the phase or completion of events, invoices received and contracted costs. Significant judgments and estimates are made in determining the accrued balances at the end of any reporting period. Actual results could differ from the Company's estimates.

Patent Costs

All patent-related costs incurred in connection with filing and prosecuting patent applications are expensed as incurred due to the uncertainty about the recovery of the expenditure. Amounts incurred are classified as general and administrative expenses in the consolidated statements of operations and comprehensive income (loss).

Equity-Based Compensation

Equity-based compensation is measured at the grant date for all equity-based awards made to employees and non-employees using the fair value of the awards and is recognized as expense over the requisite service period, which is generally the vesting period. Forfeitures are recognized as they occur. Cullinan classifies equity-based compensation in its consolidated statements of operations and comprehensive income (loss) in the same manner in which the award recipient's payroll costs are classified or in which the award recipient's service payments are classified.

The fair value of service-based restricted stock units ("RSUs") is the closing market price of the Company's common stock on the grant date. The fair value of market-based RSUs is measured on the grant date using a Monte Carlo simulation model. Cullinan estimated the fair value of stock options using the Black-Scholes option pricing model. Both the Monte Carlo simulation model and the Black-Scholes option pricing model require the input of objective and subjective assumptions. Certain assumptions used, including the Company's expected stock price volatility, involve inherent uncertainties and the application of management's judgment. As a result, if factors change and management uses different assumptions, equity-based compensation expense could be materially different for future awards.

Prior to 2023, the expected volatility used in the Black-Scholes option pricing model for new options was based on historical volatilities of the stock prices of similar entities within the Company's industry over a period of time commensurate with the expected term assumption. In 2023, Cullinan determined that a sufficient amount of historical information was available regarding the volatility of its stock price to begin using a blended rate that combines the Company's historical volatility with the historical volatilities of the stock prices of similar entities within the Company's industry over a period of time commensurate with the expected term assumption.

Income Taxes

Cullinan recognizes the effect of income tax positions only if those positions are more likely than not of being sustained. Recognized income tax positions are measured at the largest amount of benefit that is greater than fifty percent likely to be realized upon settlement. Changes in measurement are reflected in the period in which the change in judgment occurs.

Comprehensive Income (Loss)

Comprehensive income (loss) is defined as the change in equity of a business enterprise during a period from transactions and other events and circumstances from nonowner sources. The Company's only element of other comprehensive loss is unrealized gains and losses on investments.

Net Income (Loss) per Share Attributable to Common Stockholders of Cullinan

Basic net income (loss) per share attributable to common stockholders of Cullinan is determined by dividing net income (loss) attributable to common stockholders by the weighted-average number of shares of common stock outstanding during the period. Diluted net income (loss) per share attributable to common stockholders of Cullinan is determined by dividing earnings (net loss) attributable to common stockholders by the weighted-average number of common shares outstanding during the period, adjusted for the dilutive effect of shares of common stock equivalents as determined using the treasury stock method for equity awards and the if-converted method for preferred stock.

Emerging Growth Company Status

The Company is an emerging growth company, as defined in the Jumpstart Our Business Startups Act of 2012 (the "JOBS Act"). Under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards issued subsequent to the enactment of the JOBS Act until such time as those standards apply to private companies. Cullinan has elected to use this extended transition period for complying with new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date that it (i) is no longer an emerging growth company or (ii) affirmatively and irrevocably opts out of the extended transition period provided in the JOBS Act. As a result, these consolidated financial statements may not be comparable to companies that comply with the new or revised accounting pronouncements as of public company effective dates.

The JOBS Act does not preclude an emerging growth company from adopting a new or revised accounting standard earlier than the time that such standard applies to private companies. The Company expects to use the extended transition period for any other new or revised accounting standards during the period in which it remains an emerging growth company.

Recently Issued Accounting Pronouncements

In November 2023, the Financial Accounting Standards Board (the “FASB”) issued an accounting standards update to improve reportable segment disclosure requirements, primarily through enhanced disclosures about significant segment expenses. The main provisions of this update require companies to disclose, on an annual and interim basis, significant segment expenses, segment profit and loss, and other segments items that are regularly provided to the CODM. This update also requires companies to disclose the title and position of the CODM and to explain how the CODM uses the reported segment measures in assessing segment performance and deciding how to allocate resources. The update also requires companies with a single reportable segment to provide all required segment reporting disclosures. This new standard will be effective for fiscal years beginning after December 15, 2023, and interim periods within fiscal years beginning after December 15, 2024. Early adoption is permitted. Cullinan adopted this standard on January 1, 2024 for 2024 annual reporting and interim periods beginning in 2025. This new standard will not have a material impact on the Company’s consolidated financial statements and associated disclosures.

In December 2023, the FASB issued an accounting standards update to enhance transparency about income tax information through improvements to income tax disclosures primarily related to the rate reconciliation and income taxes paid information. The main provisions in this update will require companies to disclose, on an annual basis, specific categories in the rate reconciliation and provide additional information for reconciling items that meet a quantitative threshold. This update will also require companies to disclose, on an annual basis, the amount of income taxes paid, income (or loss) from continuing operations before income tax expense (or benefit), and income tax expense (or benefit) from continuing operations, disaggregated between federal, state, foreign, and jurisdictional taxes. This new standard will be effective beginning for fiscal years beginning after December 15, 2025, and early adoption is permitted. The Company expects that it will adopt this new standard on January 1, 2026. The Company is evaluating the impact this new standard will have on its consolidated financial statements and associated disclosures.

(3) Sale of Cullinan Pearl

In June 2022, Cullinan sold its equity interest in its development subsidiary, Cullinan Pearl Corp. (“Cullinan Pearl”), which had worldwide rights to ziplertinib (CLN-081/TAS6417), excluding Japan, mainland China, Hong Kong, Macau and Taiwan, to Taiho for an upfront payment of \$275.0 million, with an increase to the purchase price in the amount of \$2.9 million for cash held by Cullinan Pearl that was transferred with the sale. Pursuant to the share purchase agreement with Taiho, Cullinan is also eligible to receive up to an additional \$130.0 million tied to epidermal growth factor receptor exon 20 non-small-cell lung cancer regulatory milestones.

Cullinan concluded the transaction was a sale of non-financial assets, which comprised mainly of intellectual property rights and related intangible assets, and that it transferred control of the non-financial assets at the closing of the sale. Cullinan recognized a gain on sale of Cullinan Pearl of \$276.8 million within income from operations in its consolidated statements of operations and other comprehensive income (loss) for 2022.

The table below sets forth the book value of the Cullinan Pearl assets and liabilities sold along with the calculation of the gain on sale based on the cash consideration received (in thousands):

Book value of assets sold	
Cash	\$ 2,898
Prepaid expenses and other current assets	619
Amounts attributable to assets sold	3,517
Book value of liabilities sold	
Accrued expenses and other current liabilities	2,404
Amounts attributable to liabilities sold	2,404
Total identifiable net assets sold	1,113
Upfront consideration, inclusive of cash transferred of \$2,898	277,898
Gain on sale of Cullinan Pearl	<u>\$ 276,785</u>

During 2022, Cullinan Pearl issued \$2.2 million of convertible notes to an affiliate of Taiho. Cullinan repaid these convertible notes at the closing of the Cullinan Pearl sale.

(4) Financial Instruments

Investments

Cullinan recognized its investments by security type at December 31, 2023 as follows (in thousands):

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Short-term investments				
U.S. government notes	\$ 208,289	\$ 221	\$ (16)	\$ 208,494
Corporate notes	99,359	27	(275)	99,111
Asset-backed securities	61,114	3	(89)	61,028
Total short-term investments	368,762	251	(380)	368,633
Total investments	<u>\$ 368,762</u>	<u>\$ 251</u>	<u>\$ (380)</u>	<u>\$ 368,633</u>

Cullinan recognized its investments by security type at December 31, 2022 as follows (in thousands):

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Short-term investments				
Corporate notes	\$ 244,498	\$ 11	\$ (1,743)	\$ 242,766
U.S. government notes	34,029	—	(290)	33,739
Commercial paper	18,035	3	(13)	18,025
Asset-backed securities	16,625	—	(15)	16,610
Total short-term investments	313,187	14	(2,061)	311,140
Long-term investments				
Corporate notes	81,436	18	(572)	80,882
Total long-term investments	81,436	18	(572)	80,882
Total investments	<u>\$ 394,623</u>	<u>\$ 32</u>	<u>\$ (2,633)</u>	<u>\$ 392,022</u>

Fair Value of Financial Instruments

The following table sets forth the fair value of Cullinan's financial assets that were measured at fair value on a recurring basis as of December 31, 2023 (in thousands):

	Level 1	Level 2	Level 3	Total
Short-term investments				
U.S. government notes	\$ —	\$ 208,494	\$ —	\$ 208,494
Corporate notes	—	99,111	—	99,111
Asset-backed securities	—	61,028	—	61,028
Total short-term investments	—	368,633	—	368,633
Total investments	<u>\$ —</u>	<u>\$ 368,633</u>	<u>\$ —</u>	<u>\$ 368,633</u>

The following table sets forth the fair value of Cullinan's financial assets that were measured at fair value on a recurring basis as of December 31, 2022 (in thousands):

	Level 1	Level 2	Level 3	Total
Short-term investments				
Corporate notes	\$ —	\$ 242,766	\$ —	\$ 242,766
U.S. government notes	—	33,739	—	33,739
Commercial paper	—	18,025	—	18,025
Asset-backed securities	—	16,610	—	16,610
Total short-term investments	—	311,140	—	311,140
Long-term investments				
Corporate notes	—	80,882	—	80,882
Total long-term investments	—	80,882	—	80,882
Total investments	<u>\$ —</u>	<u>\$ 392,022</u>	<u>\$ —</u>	<u>\$ 392,022</u>

(5) Property and Equipment, net

Property and equipment, net consisted of the following as of December 31, 2023 and 2022 (in thousands):

	December 31,	
	2023	2022
Office furniture and equipment	\$ 765	\$ 681
Leasehold improvements	576	628
Total property and equipment, gross	1,341	1,309
Less: accumulated depreciation	(352)	(135)
Total property and equipment, net	<u>\$ 989</u>	<u>\$ 1,174</u>

Depreciation expense was \$0.3 million and \$0.1 million for 2023 and 2022, respectively.

(6) Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities consisted of the following as of December 31, 2023 and 2022 (in thousands):

	December 31,	
	2023	2022
Contracted research and development expenses	\$ 8,434	\$ 7,486
Due to Taiho under collaboration agreement, net	7,869	—
Employee compensation	6,987	4,516
Other current liabilities	914	1,955
Convertible note and accrued interest	—	178
	<u>\$ 24,204</u>	<u>\$ 14,135</u>

(7) License and Collaboration Agreements

Harbour License Agreement

In February 2023, the Company and Harbour BioMed US Inc. (“Harbour”) entered into a license and collaboration agreement (the “Harbour License Agreement”), pursuant to which Harbour granted to Cullinan an exclusive license for the development, manufacturing and commercialization of HBM7008 (CLN-418) in the U.S.

Under the terms of the Harbour License Agreement, Cullinan paid Harbour an upfront license fee of \$25.0 million at signing. Harbour is eligible to receive up to \$148.0 million in milestone payments based on the achievement of pre-specified development and regulatory milestones. Harbour is also eligible to receive up to an additional \$415.0 million in sales-based milestones as well as tiered royalties up to the high teens on a licensed product-by-licensed product basis, as a percentage of U.S. commercial sales. In addition, under the Harbour License Agreement, Harbour granted Cullinan certain intellectual property rights to enable the Company to perform its obligations and exercise its rights under the Harbour License Agreement. As of December 31, 2023, no milestones have been achieved under the Harbour License Agreement.

Unless earlier terminated, the Harbour License Agreement will continue in effect until the expiration of Cullinan’s royalty obligations. The Harbour License Agreement may be terminated by either party for a material breach by the other party, subject to notice and cure provisions, or in the event of the other party’s insolvency. Cullinan may terminate the Harbour License Agreement for convenience by providing 90 days written notice to Harbour. In the Harbour License Agreement, each party made customary representations and warranties and agreed to customary covenants, including, without limitation, with respect to indemnification, for transactions of this type.

Cullinan evaluated the Harbour License Agreement and determined that the exclusive license for the development, manufacturing and commercialization of HBM7008 (CLN-418) in the U.S represented an asset acquisition of in-process research and development. The Company also determined that the asset had no alternative future use at the time of acquisition, and therefore the upfront license fee of \$25.0 million was recorded within research and development expenses for 2023.

Co-Development Agreement with Taiho

In June 2022, concurrently with the closing of the sale of the Company’s equity interest in Cullinan Pearl, the Company entered into a co-development agreement with an affiliate of Taiho, pursuant to which the Company is collaborating to develop zipalertinib and has retained the option to co-commercialize zipalertinib in the U.S. Development costs for zipalertinib incurred after the sale of the Company’s equity interest in Cullinan Pearl are shared equally between Taiho and the Company with each party receiving 50% of any future pre-tax profits from potential U.S. sales of zipalertinib.

The Company concluded that the co-development agreement with Taiho is a collaborative arrangement because Cullinan is an active participant in the development of zipalertinib. Payments made to or received from Taiho for zipalertinib development activities after the execution of the co-development agreement are recorded within research and development expenses. For 2023 and 2022, the Company recorded research and development expense of \$25.3 million and \$2.5 million, respectively, related to its share of costs incurred by Taiho. Cullinan incurred \$6.9 million and \$3.5 million of costs that were reimbursable by Taiho during 2023 and 2022, respectively, which were recorded as a reduction to research and development expenses. The net amount of \$7.9 million due to Taiho was recorded within accrued expenses and other current liabilities as of December 31, 2023. The net amount of \$1.0 million due from Taiho was recorded within prepaid expenses and other current assets as of December 31, 2022.

DKFZ/Tübingen License Agreement

The Company has exclusive worldwide rights to CLN-049, its bispecific antibody targeting FLT3 and CD3, pursuant to an exclusive license agreement (the "DKFZ/Tübingen License Agreement") with Deutsches Krebsforschungszentrum ("DKFZ"), Eberhard Karls University of Tübingen, Faculty of Medicine, and Universitätsmedizin Gesellschaft für Forschung und Entwicklung mbH, Tübingen. Pursuant to the DKFZ/Tübingen License Agreement, DKFZ and University of Tübingen, collectively referred to as the Licensor, granted to Cullinan an exclusive worldwide, milestone- and royalty-bearing license under certain licensed patent rights, applications, technical information and know-how, with the right to grant sublicenses through multiple tiers to research, develop, commercialize or otherwise exploit licensed products within the field.

The Company shall pay certain non-refundable, non-creditable milestone payments to the Licensor upon the occurrence of certain clinical and regulatory events related to a licensed product. Each milestone payment is paid one time only up to a certain payment amount.

Furthermore, Cullinan is required to pay running low to mid-single digit royalty percentage on net sales of each licensed product on a country-by-country and product-by-product basis during the royalty term, subject to certain offsets or reductions. The aggregate, worldwide royalties due to Licensor for net sales of any licensed product in a calendar year shall not be reduced to an amount less than low to mid-single digit percentages. Such royalty obligations will expire on a country-by-country and product-by-product basis upon the later of (a) the expiration of the last valid claim of a patent which covers a product in such country and (b) a low double digit anniversary following the first commercial sale of a product in such country. Under certain conditions upon a first change in control in the Company's CLN-049 development subsidiary, Cullinan shall pay a non-refundable, non-creditable mid-single digit percent of sale proceeds, provided, however, that such payment shall not be required following consummation of an initial public offering of the Company's CLN-049 development subsidiary.

Either party may terminate the agreement upon a material breach by the other party or insolvency of the other party. Cullinan may terminate the DKFZ/Tübingen License Agreement for any or no reason after the first filing of an investigational new drug application or clinical trial agreement by providing prior written notice. Licensor may terminate the agreement by providing prior written notice, if the Company or any of its affiliates challenges the validity of certain patent rights. Unless earlier terminated, the DKFZ/Tübingen License Agreement continues perpetually. As of December 31, 2023, no milestones have been achieved under the DKFZ/Tübingen License Agreement. Cullinan did not incur license fee expense relating to this agreement during 2023 and 2022.

Steinle Agreement

The Company has exclusive worldwide rights to CLN-619, its MICA/B-targeted humanized IgG1 monoclonal antibody and has an agreement with Dr. Alexander Steinle (the "Steinle Agreement"), who provided Cullinan with services for the discovery, design and development of monoclonal antibodies that prevent the proteolytic cleavage of MICA from the surface of a cancer cell and augments killing of these cancer cells by immune cells expressing NKG2D receptors ("MICA antibodies").

Under this agreement, the Company shall pay certain non-refundable, non-creditable milestone payments to Dr. Steinle upon the occurrence of certain clinical and regulatory events related to a MICA antibody. Each milestone payment is paid one time only up to a certain payment amount. Cullinan is also required to pay Dr. Steinle a low single digit royalty percentage on net sales of each MICA antibody on a country-by-country and product-by-product basis during the royalty term, subject to certain offsets or reductions. During 2023, Cullinan did not incur any milestone payments under the Steinle Agreement. During 2022, Cullinan recorded \$0.1 million related to milestone payments under the Steinle Agreement within research and development expenses.

Massachusetts Institute of Technology

The Company has exclusive worldwide rights to CLN-617, its fusion protein combining two potent antitumor cytokines, IL-2 and IL-12, with tumor retention domains for the treatment of solid tumors, pursuant to a license agreement with the Massachusetts Institute of Technology ("MIT") to develop a cancer immunotherapy product worldwide (the "MIT License Agreement"). Cullinan is also responsible for paying non-refundable, creditable annual license maintenance fees in an increasing amount over a certain number of years and a fixed amount subsequent to this period of time. In addition, MIT granted to the Company an exclusive option to amend the initially determined field to include expansion fields, and such amendment would trigger the payment to MIT of an amendment fee.

Additionally, Cullinan is obligated to pay certain non-refundable, non-creditable milestone payments to MIT upon the achievement by itself or its sublicensees of certain clinical and regulatory milestones in an aggregate amount up to \$7.0 million for each distinct licensed product. Each milestone payment is paid one time only up to a certain payment amount, except there are separate milestone payments payable for a second and third indication of a licensed product in an aggregate amount up to \$5.5 million per product. Cullinan shall also pay to MIT certain one-time milestone payments for the achievement of certain commercial milestones based on the calculation of net sales across all licensed products in all indications in an aggregate amount up to \$12.5 million. As of December 31, 2023, the Company has incurred a cumulative \$0.7 million of milestone payments under the MIT License Agreement.

Under certain conditions upon a change in control of the Company's CLN-617 development subsidiary, Cullinan is required to pay a specified change in control fee and its CLN-617 clinical and regulatory milestone payments shall be increased by 100%.

Furthermore, the Company is required to pay running low single-digit royalty percentage on net sales of all licensed products for each reporting period, subject to certain offsets or reductions. The royalties due to MIT for net sales of the licensed product shall not be reduced by more than a mid double-digit percentage. Cullinan is also required to share any income from sublicensing the licensed products, with the percentage to be determined by the clinical phase of the licensed product, no greater than low to mid double-digit percentages. Such royalty obligations will expire on a country-by-country and product-by-product basis upon the expiration or abandonment of all issued patents and filed patent applications within the patent rights.

During 2023 and 2022, Cullinan recorded \$0.8 million and \$0.4 million, respectively, relating to the MIT License Agreement within research and development expenses.

Adimab

Cullinan has a collaboration agreement with Adimab, LLC ("Adimab") (the "Adimab Collaboration Agreement"). Pursuant to the Adimab Collaboration Agreement, the Company selected a number of biological targets against which Adimab used its proprietary platform technology to discover and/or optimize antibodies based upon mutually agreed-upon research plans. Under the Adimab Collaboration Agreement, Cullinan has the ability to select a specified number of additional biological targets against which Adimab will provide additional antibody discovery and optimization services.

During the research term and evaluation term for a given research program with Adimab, the Company has a non-exclusive worldwide license under Adimab's technology to perform certain research activities and to evaluate the program antibodies to determine whether Cullinan wants to exercise its option to obtain a royalty-free, fully paid, non-exclusive license to exploit such antibodies and sublicense through multiple tiers (the "Adimab Option").

Under the Adimab Collaboration Agreement, Cullinan paid a one-time, non-creditable, non-refundable technology access fee. Cullinan is also required to pay an annual access fee and research funding fees in connection with Adimab's full-time employees' compensation for performance of Adimab's obligations under the Adimab Collaboration Agreement. Cullinan is also obligated to make certain research delivery, clinical and sales milestone payments to Adimab in an aggregate amount of up to \$15.8 million for each product, on a product-by-product basis, subject to certain reductions and discounts. As of December 31, 2023, Cullinan has incurred a cumulative \$0.5 million of milestone payments under the Adimab Collaboration Agreement.

Cullinan is obligated to pay certain royalty payments on a product-by-product basis at a low single-digit percentage of annual aggregate worldwide net sales. Such royalty obligations will expire on a country-by-country and product-by-product basis upon the later of (a) a certain low double-digit number of years after the first commercial sale of such product in such country and (b) the expiration of the last issued and not expired, permanently revoked, or invalid claim within a program patent covering such product.

Cullinan may terminate the Adimab Collaboration Agreement at any time, for any reason, upon a specified period advance written notice. The term of the Adimab Collaboration Agreement expires upon the last research program's evaluation term in the event no Adimab Option is exercised or in the event an Adimab Option is exercised, after the royalty term expires at the later of a specified period or invalid patent coverage of the relevant product.

During each of 2023 and 2022, Cullinan recorded \$0.5 million relating to the Adimab Collaboration Agreement within research and development expenses.

(8) Stockholders' Equity

Common Stock

Each share of common stock entitles the holder to one vote and to receive dividends when and if declared by the board of directors of the Company. No dividends have been declared through December 31, 2023.

At-the-Market Equity Offering Program

In May 2023, Cullinan entered into an agreement with Cowen and Company, LLC ("Cowen") to establish an at-the-market equity offering program (the "ATM") pursuant to which Cullinan may offer and sell up to \$125.0 million of its common stock from time to time through Cowen, acting as its sales agent. In 2023, the Company sold approximately 3.3 million shares under the ATM and received net proceeds of \$38.4 million after deducting commissions. As of December 31, 2023, Cullinan had \$85.6 million in shares of its common stock remaining under the ATM.

Preferred Stock

In January 2023, the Company entered into an exchange agreement with Biotechnology Value Fund, L.P., Biotechnology Value Fund II, L.P., Biotechnology Value Trading Fund OS LP and MSI BVF SPV, LLC (the "Stockholders"), pursuant to which the Stockholders exchanged 6.5 million shares of Cullinan's common stock for 0.6 million shares of newly designated Series A convertible preferred stock, a "toothless" preferred stock, par value \$0.0001 per share.

Each share of the preferred stock will be convertible into ten shares of common stock at the option of the holder at any time, subject to certain limitations, including that the holder will be prohibited from converting preferred stock into common stock if, as a result of such conversion, the holder, together with its affiliates, would beneficially own a number of shares of common stock more than 9.99% of the total common stock then issued and outstanding immediately following the conversion of such shares of preferred stock. Holders of the preferred stock are permitted to increase this percentage to an amount not to exceed 19.99% upon 60 days notice.

Shares of preferred stock will generally have no voting rights, except as required by law and except that the consent of a majority of the holders of the outstanding preferred stock will be required to amend the terms of the preferred stock. In the event of the Company's liquidation, dissolution or winding up, holders of preferred stock will participate pari passu with any distribution of proceeds to holders of common stock. Holders of preferred stock are entitled to receive when, as, and if dividends are declared and paid on the common stock, an equivalent dividend, calculated on an as-converted basis. Shares of preferred stock are otherwise not entitled to dividends.

The preferred stock ranks (i) senior to any class or series of capital stock of Cullinan hereafter created specifically ranking by its terms junior to the preferred stock; (ii) on parity with the common stock and any class or series of capital stock of the Company created specifically ranking by its terms on parity with the preferred stock; and (iii) junior to any class or series of capital stock of Cullinan created specifically ranking by its terms senior to any preferred stock, in each case, as to distributions of assets upon liquidation, dissolution or winding up of the Company, whether voluntarily or involuntarily.

The Company evaluated the preferred stock for liability or equity classification. Cullinan determined that the preferred stock should be classified as permanent equity as it is not redeemable for cash or other assets (i) on a fixed or determinable date, (ii) at the option of the holder, or (iii) upon the occurrence of an event that is not solely within control of the Company.

Noncontrolling Interests in Subsidiaries

Certain of the Company's development subsidiaries have issued common stock and preferred stock to the Company and to third parties. The holders of subsidiary common stock and preferred stock are generally entitled to one vote per share. The holders of subsidiary common stock are entitled to receive dividends when and if declared by the subsidiaries' board of directors and distributions in either case only after the payment of all preferential amounts required to be paid to the holders of shares of preferred stock of the respective subsidiary.

In March 2022, certain existing outside investors purchased equity from the Company's CLN-619 development subsidiary for \$1.2 million.

In October and November 2022, Cullinan purchased equity in the Company's CLN-619 development subsidiary from several of the CLN-619 development subsidiary's other stockholders for \$33.3 million.

The following table shows the Company's ownership interest as of December 31, 2023 in its development subsidiaries and their product candidates:

Development Subsidiary (Product Candidate)	Ownership as of December 31, 2023
Cullinan MICA Corp. (CLN-619)	95%
Cullinan Florentine Corp. (CLN-049)	96%
Cullinan Amber Corp. (CLN-617)	94%

(9) Equity-Based Compensation

The Company recorded equity-based compensation in the following expense categories in the consolidated statements of operations and comprehensive income (loss) in 2023 and 2022 (in thousands):

	2023	2022
General and administrative	\$ 18,270	\$ 16,939
Research and development	12,168	11,018
Total equity-based compensation	<u>\$ 30,438</u>	<u>\$ 27,957</u>

2021 Stock Option and Incentive Plan

Cullinan grants equity awards in the form of stock options, restricted stock awards ("RSAs") and RSUs to its employees, directors, consultants and other key persons through the 2021 Stock Option and Incentive Plan (the "2021 Stock Plan"). Cullinan has also granted equity awards outside of the 2021 Stock Plan in the form of stock options as an inducement material to an individual's entering into employment with the Company. As of December 31, 2023, there were approximately 2.6 million shares remaining for future grants under the 2021 Stock Plan.

The 2021 Stock Plan provides that the number of shares reserved and available for issuance under the 2021 Stock Plan will automatically increase each January 1 by 5% of the outstanding number of shares of Cullinan's common stock on the immediately preceding December 31 or such lesser number of shares as determined by Cullinan's board of directors or compensation committee. On January 1, 2024, the total number of shares available for issuance under the 2021 Stock Plan increased by approximately 2.1 million shares under this provision.

The options granted have a ten-year term and were issued with an exercise price equal to the closing market price of Cullinan's common stock on the grant date. For equity awards with service-based vesting conditions, Cullinan recognizes compensation expense over the vesting period, which is generally over a four-year period. For equity awards with a market-based vesting condition, the Company recognizes compensation expense over the requisite service period. The number of shares awarded, if any, when a market-based award vests will depend on the degree of achievement of the corporate stock price metrics within the performance period of the award.

Determining fair value of options

The fair value of options is estimated using the Black-Scholes option pricing model, which takes into account inputs such as the exercise price, the value of the underlying common stock at the grant date, expected term, expected volatility, risk-free interest rate and dividend yield. The fair value of each grant of options during 2023 and 2022 were determined using the methods and assumptions discussed below:

- The expected term of options is determined using the "simplified" method, as prescribed in the SEC Staff Accounting Bulletin (SAB) No. 107, whereby the expected life equals the arithmetic average of the vesting term and the original contractual term of the option due to Cullinan's lack of sufficient historical data.
- The risk-free interest rate is based on implied yields available from U.S. Treasury securities with a remaining term equal to the expected term assumed at the grant date.
- Prior to 2023, the expected volatility used in the Black-Scholes option pricing model for new options was based on historical volatilities of the stock prices of similar entities within Cullinan's industry over a period of time commensurate with the expected term assumption. In 2023, the Company determined that a sufficient amount of historical information was available regarding the volatility of its stock price to begin using a blended rate that combines its historical volatility with the historical volatilities of the stock prices of similar entities within Cullinan's industry over a period of time commensurate with the expected term assumption.
- The estimated annual dividend yield was based on the Company's expectation of not paying dividends on its common stock in the foreseeable future.

For 2023 and 2022, the weighted-average grant date fair value of the options granted were \$7.70 and \$9.02 per share, respectively. The grant date fair value was estimated at the time of grant using the Black-Scholes option-pricing model using the following weighted-average assumptions in 2023 and 2022:

	2023	2022
Risk-free interest rate	4.0%	2.7%
Expected term (in years)	6.0	6.0
Expected volatility	78.7%	79.8%
Expected dividend yield	0.0%	0.0%

Determining fair value of market-based RSUs

The Company measures the fair value of market-based RSUs on the date of grant using a Monte Carlo simulation model. The Monte Carlo simulation requires the input of assumptions, including Cullinan's stock price, the volatility of its stock price, remaining term in years, expected dividend yield and risk-free rate. The Company used its own trading history to calculate the expected volatility of the market-based RSUs granted. The risk-free interest rate is determined by reference to implied yields available from U.S. Treasury securities with a remaining term equal to the expected term assumed at the grant date.

There were no market-based RSUs granted during 2023. The following table details the assumptions used in the Monte Carlo simulation model used to estimate the fair value of the market-based RSUs granted during 2022:

	2022
Stock price	\$ 12.98
Volatility	82.5%
Expected term (in years)	2.7
Risk-free rate	2.9%
Expected dividend yield	0.0%

Stock options

The following table summarizes 2023 and 2022 stock option activity (options and aggregate intrinsic value in thousands):

	Number of Options	Weighted- Average Exercise Price	Weighted- Average Remaining Contractual Term (in Years)	Aggregate Intrinsic Value
Outstanding as of December 31, 2021	9,259	\$ 15.77		
Granted	2,888	\$ 12.96		
Exercised	(1,523)	\$ 4.31		
Forfeited	(1,290)	\$ 13.80		
Outstanding as of December 31, 2022	9,334	\$ 17.04		
Granted	2,091	\$ 10.96		
Exercised	(58)	\$ 4.30		
Forfeited	(828)	\$ 22.63		
Outstanding as of December 31, 2023	10,539	\$ 15.46	7.94	\$ 10,753
Exercisable as of December 31, 2023	5,535	\$ 15.37	7.49	\$ 10,170

As of December 31, 2023 and 2022, there was \$50.9 million and \$66.0 million in unrecognized compensation costs that are expected to be recognized over a remaining weighted-average period of 2.4 and 2.9 years, respectively.

The aggregate intrinsic value of options is calculated as the difference between the exercise price of the options and the fair value of Cullinan's common stock for those options that had exercise prices lower than the fair value of the Company's common stock. The total intrinsic value of options exercised in 2023 and 2022 was \$0.3 million and \$13.1 million, respectively.

RSUs

The following table summarizes the activity related to RSUs during 2023 and 2022 (shares in thousands):

	Number of Shares	Weighted-Average Grant Date Fair Value
Outstanding unvested as of December 31, 2021	—	\$ —
Granted ⁽¹⁾	502	\$ 13.28
Vested	(46)	\$ 13.60
Forfeited	(87)	\$ 13.60
Outstanding unvested as of December 31, 2022	369	\$ 13.16
Granted	638	\$ 11.29
Vested	(178)	\$ 11.90
Forfeited	(25)	\$ 12.26
Outstanding unvested as of December 31, 2023	804	\$ 11.98

- (1) The number granted represents the number of shares issuable upon vesting of service-based and market-based RSUs, assuming the Company achieves its corporate stock price metrics at the target achievement level.

As of December 31, 2023 and 2022, there was \$6.8 million and \$4.3 million respectively, in unrecognized compensation cost related to RSUs expected to be recognized over a remaining weighted-average period of 2.5 years and 2.6 years, respectively. The total fair value of RSUs that vested during 2023 and 2022 was \$1.7 million and \$0.6 million, respectively.

RSAs

The following table summarizes the activity related to RSAs during 2023 and 2022 (shares in thousands):

	Number of Shares	Weighted-Average Grant Date Fair Value
Outstanding unvested as of December 31, 2021	89	\$ 3.87
Vested	(46)	\$ 3.87
Forfeited	(28)	\$ 3.87
Outstanding unvested as of December 31, 2022	15	\$ 3.87
Vested	(14)	\$ 3.87
Forfeited	(1)	\$ 3.87
Outstanding unvested as of December 31, 2023	—	\$ —

As of December 31, 2023, there was no remaining unrecognized compensation cost related to RSAs. As of December 31, 2022, there was \$0.1 million in unrecognized compensation cost related to RSAs expected to be recognized over a remaining weighted-average period of 1.0 year. The total fair value of RSAs that vested during 2023 and 2022 was \$0.1 million and \$0.6 million, respectively.

2021 Employee Stock Purchase Plan

The 2021 Employee Stock Purchase Plan (the "ESPP") authorizes the issuance of shares of common stock to participating eligible employees and provides for two six-month offering periods each year. As of December 31, 2023, there were approximately 1.3 million shares remaining for future purchases under the ESPP.

The ESPP provides that the number of shares reserved and available for issuance under the ESPP will automatically increase each January 1 by the lesser of 0.8 million shares of the Company's common stock, 1% of the outstanding number of shares of Cullinan's common stock on the immediately preceding December 31, or such lesser number of shares as determined by the Company's compensation committee. On January 1, 2024, the total number of shares available for issuance under the ESPP increased by approximately 0.4 million shares under this provision.

During each of 2023 and 2022, Cullinan issued less than 0.1 million shares of its common stock pursuant the ESPP.

Subsidiary Stock Options

Prior to being acquired by the Company, the previous board of directors of the Company's CLN-619 development subsidiary authorized the grant of stock options to employees, directors of, consultants and other key persons to the entity. In October 2022, the current board of directors of Cullinan's CLN-619 development subsidiary authorized the acceleration of vesting for approximately 0.3 million stock options. The vesting acceleration was determined to be a cancellation of the prior award with a concurrent grant of a replacement award and was accounted for as a modification resulting in \$0.6 million in incremental equity-based compensation expense. As of December 31, 2023, the Company's CLN-619 development subsidiary had approximately 0.2 million stock options held by noncontrolling interests that were outstanding and exercisable with a weighted-average exercise price of \$0.22 per share.

(10) Related Party Transactions

The Company's CLN-619, CLN-049 and CLN-617 development subsidiaries are each party to royalty transfer agreements with two charitable foundations that are affiliated with an investor which beneficially owns more than five percent of the Company's outstanding common stock. Under these royalty transfer agreements, the charitable foundations are entitled to receive a low single digit royalty percentage of all global net sales of any products developed by the applicable subsidiary, subject to limitations after patent expirations and on intellectual property developed after a change of control. The Company has deemed these royalty transfer agreements to be freestanding financial instruments that should be accounted for at fair value. Cullinan has concluded that these instruments had no value at the inception of the agreements.

Given the early-stage nature of the underlying technologies and inherent technical, regulatory and competitive risks associated with achieving approval and commercialization, the Company ascribed no value to the royalty transfer agreements as of December 31, 2023 and December 31, 2022. Cullinan currently does not have any applicable net sales from its products and as a result, has not paid or incurred any royalties under these agreements as of December 31, 2023. The Company will monitor these instruments for changes in fair value at each reporting date.

(11) Income Taxes

During the fourth quarter of 2023, Cullinan recorded a current income tax benefit of \$14.1 million. The income tax benefit recorded for 2023 was driven by return to provision adjustments for the utilization of 2022 and historical tax attributes against the gain on sale of Cullinan Pearl and the expected utilization of federal research and development credits generated during 2023 that can be carried back to 2022. During 2022, the Company recorded a current income tax expense of \$42.1 million. The income tax expense recorded for 2022 was driven by the tax from the gain on sale of Cullinan Pearl, partially offset by the expected utilization of tax attributes generated during 2022 and the release of valuation allowance for the expected utilization of certain historical tax attributes against the gain from the sale. Refer to Note 3 for additional details on the sale of Cullinan Pearl. The Company's net income (loss) before income taxes consists solely of domestic income and losses in each of 2023 and 2022. As of December 31, 2023, Cullinan had recorded \$5.4 million within prepaid expenses and other current assets on its consolidated balance sheets, which was comprised of \$3.9 million for 2022 state tax refund claims and \$1.5 million for the expected carryback of 2023 federal research and development credits, partially offset by a refund payment from the Internal Revenue Service (the "IRS") that was in excess of the Company's 2022 federal refund claim.

A reconciliation of the Company's statutory income tax rate to its effective income tax rate in 2023 and 2022 is as follows:

	2023	2022
Federal statutory rate	21.00%	21.00%
State taxes, net of federal benefit	6.70%	4.71%
Research and development credits	6.28%	(0.25)%
Equity-based compensation	(1.49)%	0.77%
Valuation allowance	(24.41)%	1.13%
Other, net	0.27%	0.45%
Effective tax rate	8.35%	27.81%

As of December 31, 2023 and 2022, the net deferred income tax asset balance related to the following (in thousands):

	December 31,	
	2023	2022
Deferred tax assets:		
Capitalized research and development	\$ 41,901	\$ 18,724
Equity-based compensation	16,960	12,087
Net operating loss	14,443	10,531
Licenses	7,189	461
Research and development credit	3,155	1,110
Accrued expenses	1,836	1,977
Basis difference on gain on sale of Cullinan Pearl	1,700	1,805
Lease liability	985	1,345
Capitalized organizational and start-up expenses	116	127
Gross deferred tax assets	88,285	48,167
Valuation allowance	(87,371)	(46,766)
Net deferred tax asset	914	1,401
Deferred tax liability		
ROU asset	697	1,108
Depreciation and amortization	217	293
Net deferred tax asset	\$ —	\$ —

The Company's net operating loss ("NOL") and tax credit carryforwards are subject to review and possible adjustment by the IRS and state tax authorities. Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, as well as similar state provisions, NOL and tax credit carryforwards may become subject to an annual limitation in the event of certain cumulative changes in the ownership interest of significant stockholders over a three-year period in excess of 50%. The rules generally operate by focusing on changes in ownership among stockholders considered by the rules as owning, directly or indirectly, 5% or more of the stock of a company and any change in ownership arising from new issuances of stock by the company.

As of December 31, 2023 and 2022, the Company had federal NOL carryforwards, of \$54.3 million and \$42.6 million, respectively, which may be available to offset future income tax liabilities. As of December 31, 2023, \$52.9 million of Cullinan's federal NOL carryforwards can be carried forward indefinitely, and the remaining \$1.4 million expires in 2037. As of December 31, 2023 and 2022, the Company had state NOL carryforwards of \$56.8 million and \$27.1 million, respectively, which may be available to offset future income tax liabilities. As of December 31, 2023, Cullinan's state NOL carryforwards begin to expire in 2031.

As of December 31, 2023 and 2022, the Company had federal research and development tax credit carryforwards of \$1.6 million and \$0.9 million, respectively. As of December 31, 2023, Cullinan's federal research and development tax credit carryforwards begin to expire in 2036. As of December 31, 2023 and 2022, the Company had state research and development tax credit carryforwards of \$2.0 million and \$0.3 million, respectively. As of December 31, 2023, \$0.3 million of Cullinan's state research and development tax credit carryforwards can be carried forward indefinitely, and the remaining \$1.7 million expires beginning in 2036.

Cullinan has evaluated the positive and negative evidence bearing upon its ability to realize the deferred tax assets, which primarily consist of capitalized research and development costs, temporary differences on equity-based compensation, and NOL carryforwards. The Company has considered its history of cumulative net losses, with the exception of the one-time gain on the sale of Cullinan Pearl in 2022, estimated future taxable income and prudent and feasible tax planning strategies and has concluded that it is more likely than not that Cullinan will not realize the benefits of its deferred tax assets. As a result, as of December 31, 2023, the Company has maintained a full valuation allowance against its remaining net deferred tax assets.

Cullinan's valuation allowance increased during 2023 and 2022 primarily due to capitalized research and development costs and the generation of NOLs as follows (in thousands):

	2023	2022
Valuation allowance at beginning of year	\$ 46,766	\$ 44,552
Increases recorded to income tax provision	41,307	1,712
Increases (decreases) recorded to equity	(702)	502
Valuation allowance at end of year	\$ 87,371	\$ 46,766

The calculation of the Company's tax liabilities involves dealing with uncertainties in the application of complex tax laws and regulations for both federal taxes and the states in which Cullinan operates or does business in.

The Company recognizes a tax benefit from an uncertain tax position when it is more likely than not that the position will be sustained upon examination, including resolutions of any related appeals or litigation processes, on the basis of the technical merits. Cullinan records uncertain tax positions as liabilities and adjusts these liabilities when its judgment changes as a result of the evaluation of new information not previously available. Due to the complexity of some of these uncertainties, the ultimate resolution may result in a payment that is materially different from the Company's current estimate of the unrecognized tax benefit liabilities. These differences will be reflected as increases or decreases to income tax expense in the period in which new information is available. As of December 31, 2023 and 2022, Cullinan has not recorded a liability for any uncertain tax positions in its consolidated financial statements.

The Company recognizes interest and penalties related to unrecognized tax benefits on the income tax expense line in the accompanying consolidated statements of operations and comprehensive income (loss). As of December 31, 2023 and 2022, no accrued interest or penalties are included in the consolidated balance sheets.

Cullinan files tax returns as prescribed by the tax laws of the jurisdictions in which it operates. In the normal course of business, the Company is subject to examination by federal and state jurisdictions in the U.S. There are currently no pending tax examinations. Cullinan's federal and state income tax returns are generally subject to tax examinations for tax years 2016 and later. To the extent that the Company has tax attribute carryforwards, the tax years in which the attribute was generated may still be adjusted upon examination by the IRS and the state tax authorities to the extent utilized in a future period.

(12) Commitments and Contingencies

Cullinan enters into contracts in the normal course of business with contract research organizations, contract manufacturing organizations, and other third parties for preclinical research studies, clinical trials and testing and manufacturing services. These agreements generally include cancellation clauses.

Indemnification Agreements

In the ordinary course of business, the Company may provide indemnification of varying scope and terms to vendors, lessors, business partners and other parties with respect to certain matters including, but not limited to, losses arising out of breach of such agreements or from intellectual property infringement claims made by third parties. In addition, Cullinan has entered into indemnification agreements with members of its board of directors and executive officers that will require the Company, among other things, to indemnify them against certain liabilities that may arise by reason of their status or service as directors or officers. The maximum potential amount of future payments Cullinan could be required to make under these indemnification agreements is, in certain cases, unlimited. To date, Cullinan has not incurred any material costs as a result of such indemnifications. Cullinan is not aware of any indemnification arrangements that could have a material effect on its financial position, results of operations or cash flows, and it has not accrued any liabilities related to such obligations in its consolidated financial statements as of December 31, 2023 and 2022.

Legal Proceedings

The Company is not currently party to or aware of any material legal proceedings. At each reporting date, Cullinan evaluates whether or not a potential loss amount or a potential range of loss is probable and reasonably estimable under the provisions of the authoritative guidance that addresses accounting for contingencies. The Company expenses as incurred the costs related to such legal proceedings.

(13) Leases

Cullinan has an operating lease for approximately 8,000 square feet of office space in a multi-tenant building in Cambridge, Massachusetts, which commenced in February 2018 and goes through June 2024 (the "Suite 520 Lease"). In August 2022, the Company entered into an additional operating lease (the "Suite 1350 Lease") for approximately 14,000 square feet of office space in a multi-tenant building in Cambridge, Massachusetts through July 2026. Lease expense consisted of operating lease costs of \$1.7 million and \$1.1 million for 2023 and 2022, respectively.

The following table summarizes supplemental cash flow information for 2023 and 2022 (in thousands):

	2023	2022
Cash paid for amounts included in measurement of lease liabilities:		
Operating cash flows from operating leases ⁽¹⁾	\$ 1,881	\$ 260
ROU asset obtained in exchange for an operating lease liability	\$ —	\$ 4,931

- (1) Operating cash flows from operating leases for 2022 includes cash inflow of \$0.3 million reimbursed by the lessor for improvements made to the newly leased office space pursuant to the terms of the Suite 1350 lease.

The following table summarizes the weighted-average lease term and discount rate as of December 31, 2023 and 2022:

	2023	2022
Weighted-average remaining lease term (in years)	2.4	3.2
Weighted-average discount rate	10.9%	10.8%

As Cullinan's operating leases did not provide an implicit rate, the Company used its incremental borrowing rate based on the information available in determining the present value of lease payments. Cullinan's incremental borrowing rate was based on the term of the lease, the economic environment and reflects the rate the Company would have had to pay to borrow on a secured basis.

The following table summarizes Cullinan's future minimum lease payments as of December 31, 2023 (in thousands):

	December 31, 2023
2024	\$ 1,738
2025	1,461
2026	872
Total future minimum lease payments	4,071
Less: imputed interest	(481)
Total lease liabilities at present value	<u>\$ 3,590</u>

Sublease Agreement

In September 2022, Cullinan entered into a sublease agreement through May 2024 for the office space that the Company leases under the Suite 520 Lease. For 2023 and 2022, Cullinan recorded sublease income of \$0.5 million and \$0.1 million, respectively, within other income (expense), net. In September 2023, Cullinan and its subtenant cancelled the sublease agreement for the office space that the Company leases under the Suite 520 Lease, and Cullinan determined that the remaining right-of-use asset for the Suite 520 Lease and the related leasehold improvements ("Suite 520 Asset Group") was not recoverable. Upon determining that the remaining Suite 520 Asset Group was not recoverable, Cullinan recorded an impairment of long-lived assets of \$0.4 million for the carrying value in excess of the fair value of the Suite 520 Asset Group within income (loss) from operations in its consolidated statements of operations and other comprehensive income (loss) for 2023.

(14) Net Income (Loss) per Share Attributable to Common Stockholders of Cullinan

The following table sets forth the calculation of basic and diluted net income (loss) per share attributable to common stockholders of Cullinan for 2023 and 2022 (in thousands, except per share data):

	2023	2022
Numerator:		
Net income (loss) attributable to common stockholders of Cullinan	<u>\$ (153,162)</u>	<u>\$ 111,214</u>
Denominator:		
Weighted-average common stock outstanding - basic	41,550	45,164
Dilutive effect of common stock issuable from assumed exercise of equity awards	<u>—</u>	<u>1,476</u>
Weighted-average common stock outstanding - diluted	<u>41,550</u>	<u>46,640</u>
Net income (loss) per share attributable to common stockholders of Cullinan:		
Basic	\$ (3.69)	\$ 2.46
Diluted	<u>\$ (3.69)</u>	<u>\$ 2.38</u>

The Company used the treasury stock method for equity awards, and the if-converted method for preferred stock, to determine the number of dilutive shares. The following table sets forth potential common shares that were excluded from the computation of the diluted net income (loss) per share attributable to common stockholders of Cullinan for 2023 and 2022 because their effect would have been anti-dilutive (in thousands):

	2023	2022
Stock options	9,418	6,842
Preferred stock	6,138	—
RSAs and RSUs	147	25
ESPP	9	7
Total	<u>15,712</u>	<u>6,874</u>

EXHIBIT INDEX

Exhibit Number	Description
3.1	Second Amended and Restated Certificate of Incorporation of the Registrant, as amended by the Certificate of Amendment, effective as of February 25, 2021 (incorporated by reference to Exhibit 3.1 of the Registrant's Annual Report on Form 10-K for the year ended December 31, 2020 filed with the SEC on March 30, 2021).
3.2	Second Amended and Restated Bylaws of the Registrant, effective as of February 25, 2021 (incorporated by reference to Exhibit 3.2 of the Registrant's Annual Report on Form 10-K for the year ended December 31, 2020 filed with the SEC on March 30, 2021).
3.3	Certificate of Designation of Preferences, Rights and Limitations of Series A Convertible Preferred Stock (incorporated by reference to Exhibit 3.1 of the Registrant's Current Report on Form 8-K filed with the SEC on January 19, 2023).
4.1	Specimen Common Stock Certificate (incorporated by reference to Exhibit 4.1 of the Registrant's Registration Statement on Form S-1 (File No. 333-251512) filed with the SEC on December 28, 2020).
4.2	Registration Rights Agreement, dated January 7, 2021, among the Registrant and certain of its stockholders (incorporated by reference to Exhibit 4.2 of the Registrant's Annual Report on Form 10-K for the year ended December 31, 2020 filed with the SEC on March 30, 2021).
4.3	Description of Securities (incorporated by reference to Exhibit 4.3 of the Registrant's Annual Report on Form 10-K for the year ended December 31, 2020 filed with the SEC on March 30, 2021).
10.1#	2021 Stock Option and Incentive Plan and form of award agreements thereunder (incorporated by reference to Exhibit 10.1 of the Registrant's Registration Statement on Form S-1 (File No. 333-251512) filed with the SEC on January 4, 2021).
10.2#	2021 Employee Stock Purchase Plan (incorporated by reference to Exhibit 10.2 of the Registrant's Registration Statement on Form S-1 (File No. 333-251512) filed with the SEC on January 4, 2021).
10.3#	Senior Executive Cash Incentive Bonus Plan (incorporated by reference to Exhibit 10.3 of the Registrant's Registration Statement on Form S-1 (File No. 333-251512) filed with the SEC on December 18, 2020).
10.4#	Form of Indemnification Agreement, between the Registrant and each of its directors (incorporated by reference to Exhibit 10.4 of the Registrant's Registration Statement on Form S-1 (File No. 333-251512) filed with the SEC on December 18, 2020).
10.5#	Form of Indemnification Agreement, between the Registrant and each of its executive officers (incorporated by reference to Exhibit 10.5 of the Registrant's Registration Statement on Form S-1 (File No. 333-251512) filed with the SEC on December 18, 2020).
10.6†	Exclusive Patent License Agreement, dated December 12, 2019, as amended on April 3, 2020, by and between Massachusetts Institute of Technology and Cullinan Amber Corp. (incorporated by reference to Exhibit 10.6 of the Registrant's Registration Statement on Form S-1 (File No. 333-251512) filed with the SEC on December 18, 2020).
10.7†	Collaboration Agreement, dated November 28, 2018, by and between Adimab, LLC and the Registrant (incorporated by reference to Exhibit 10.7 of the Registrant's Registration Statement on Form S-1 (File No. 333-251512) filed with the SEC on December 18, 2020).

- 10.8† Share Purchase Agreement, dated May 11, 2022, by and among the Registrant, Taiho Pharmaceutical Co. Ltd. and Cullinan Pearl Corp. (incorporated by reference to Exhibit 10.1 of the Registrant's Quarterly Report on Form 10-Q filed with the SEC on August 10, 2022).
- 10.9† Co-Development Agreement, dated June 21, 2022, by and between the Registrant and Taiho Oncology, Inc. (incorporated by reference to Exhibit 10.2 of the Registrant's Quarterly Report on Form 10-Q filed with the SEC on August 10, 2022).
- 10.10† Exclusive License Agreement, dated August 31, 2020, by and among Deutsches Krebsforschungszentrum, Eberhard Karls University of Tuebingen, Faculty of Medicine, Universitätsmedizin Gesellschaft für Forschung und Entwicklung mbH, Tübingen and Cullinan Florentine Corp. (incorporated by reference to Exhibit 10.9 of the Registrant's Registration Statement on Form S-1 (File No. 333-251512) filed with the SEC on December 18, 2020).
- 10.11# Form of Executive Employment Agreement (incorporated by reference to Exhibit 10.13 of the Registrant's Registration Statement on Form S-1 (File No. 333-251512) filed with the SEC on December 18, 2020).
- 10.12 Sublease, effective as of December 14, 2017, by and between Teva Pharmaceuticals USA, Inc. and the Registrant (incorporated by reference to Exhibit 10.17 of the Registrant's Registration Statement on Form S-1 (File No. 333-251512) filed with the SEC on December 18, 2020).
- 10.13 Form of Voting Agreement (incorporated by reference to Exhibit 10.18 of the Registrant's Registration Statement on Form S-1 (File No. 333-251512) filed with the SEC on December 18, 2020).
- 10.14 Form of Investors Rights Agreement (incorporated by reference to Exhibit 10.19 of the Registrant's Registration Statement on Form S-1 (File No. 333-251512) filed with the SEC on December 18, 2020).
- 10.15 Form of Services Agreement (incorporated by reference to Exhibit 10.20 of the Registrant's Registration Statement on Form S-1 (File No. 333-251512) filed with the SEC on December 18, 2020).
- 10.16 Form of Royalty Transfer Agreements (incorporated by reference to Exhibit 10.21 of the Registrant's Registration Statement on Form S-1 (File No. 333-251512) filed with the SEC on December 18, 2020).
- 10.17 Form of Contribution Agreement (incorporated by reference to Exhibit 10.22 of the Registrant's Registration Statement on Form S-1 (File No. 333-251512) filed with the SEC on January 4, 2021).
- 10.18# Non-Employee Director Compensation Policy (incorporated by reference to Exhibit 10.2 of the Registrant's Quarterly Report on Form 10-Q filed with the SEC on August 10, 2023)
- 10.19# Consulting Agreement, dated June 8, 2023, by and between the Registrant and Patrick Baeuerle (incorporated by reference to Exhibit 10.1 of the Registrant's Quarterly Report on Form 10-Q filed with the SEC on August 10, 2023).
- 10.20# Employment Agreement, effective February 28, 2022, between the Registrant and Jeffrey Jones (incorporated by reference to Exhibit 10.1 of the Registrant's Current Report on Form 8-K filed with the SEC on March 3, 2022).
- 10.21# Performance Stock Unit Award Agreement, dated June 9, 2022, by and between the Registrant and Nadim Ahmed (incorporated by reference to Exhibit 10.3 of the Registrant's Current Report on Form 10-Q filed with the SEC on August 10, 2022).
- 10.22 Employment Agreement, effective January 7, 2021, between the Registrant and Jeffrey Trigilio (incorporated by reference to Exhibit 10.23 of the Registrant's Annual Report on Form 10-K filed with the SEC on March 9, 2023)
- 10.23 Form of Stock Purchase and Transfer Agreement for Institutional Transferors (incorporated by reference to Exhibit 10.24 of the Registrant's Annual Report on Form 10-K filed with the SEC on March 9, 2023).

10.24	Form of Stock Purchase and Transfer Agreement for Individual Transferors (incorporated by reference to Exhibit 10.25 of the Registrant's Annual Report on Form 10-K filed with the SEC on March 9, 2023).
10.25†	Second Amendment to Exclusive Patent License Agreement, dated December 20, 2022, by and between the Massachusetts Institute of Technology and Cullinan Amber Corp. (incorporated by reference to Exhibit 10.26 of the Registrant's Annual Report on Form 10-K filed with the SEC on March 9, 2023).
10.26	Amendment Number 1 to Royalty Transfer Agreement, dated June 6, 2022, by and among the Registrant, MPM Oncology Charitable Foundation, Inc., and the UBS Optimus Foundation (incorporated by reference to Exhibit 10.27 of the Registrant's Annual Report on Form 10-K filed with the SEC on March 9, 2023).
10.27	Exchange Agreement, dated January 17, 2023, by and among the Registrant and the Stockholders named therein (incorporated by reference to Exhibit 10.1 of the Registrant's Current Report on Form 8-K filed with the SEC on January 19, 2023).
10.28	License and Collaboration Agreement, dated February 13, 2023, by and between the Registrant and Harbour BioMed US Inc. (incorporated by reference to Exhibit 10.2 of the Registrant's Quarterly Report on Form 10-Q filed with the SEC on May 11, 2023).
10.29	Sales Agreement by and between the Registrant and Cowen and Company, LLC, dated as of May 11, 2023 (incorporated by reference to Exhibit 1.2 of the Registrant's Registration Statement on Form S-3 filed with the SEC on May 11, 2023).
10.30#	Employment Agreement, effective as of October 18, 2021, by and between the Registrant and Nadim Ahmed (incorporated by reference to Exhibit 10.1 of the Registrant's Current Report on Form 8-K filed with the SEC on October 18, 2021).
10.31#	Amendment No. 1 to Employment Agreement, by and between the Registrant and Nadim Ahmed (incorporated by reference to Exhibit 10.1 of the Registrant's Quarterly Report on Form 10-Q filed with the SEC on November 8, 2023).
10.32*	Form of Restricted Stock Unit Award Agreement
21.1*	List of Subsidiaries of the Registrant.
23.1*	Consent of KPMG LLP, the Company's independent registered public accounting firm.
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.
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.
32.1**	Certification of Principal Executive Officer and Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
97.1*	Policy for Recoupment of Incentive Compensation.
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)
101.SCH	Inline XBRL Taxonomy Extension Schema Document With Embedded Linkbase Documents
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

* Filed herewith.

** Furnished herewith.

- # Indicates a management contract or compensatory plan, contract or arrangement.
- † Portions of this exhibit (indicated by asterisks) have been omitted because the Registrant has determined they are not material and would likely cause competitive harm to the Registrant if publicly disclosed.

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.

Cullinan Oncology, Inc.

Date: March 14, 2024

By: /s/ Nadim Ahmed

Name: Nadim Ahmed

Title: President and Chief Executive Officer

POWER OF ATTORNEY

Each person whose individual signature appears below hereby authorizes and appoints Nadim Ahmed and Jeffrey Trigilio, and each of them, with full power of substitution and resubstitution and full power to act without the other, as his or her true and lawful attorney-in-fact and agent to act in his or her name, place and stead and to execute in the name and on behalf of each person, individually and in each capacity stated below, and to file any and all amendments to this annual report on Form 10-K and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing, ratifying and confirming all that said attorneys-in-fact and agents or any of them or their or his substitute or substitutes may lawfully do or cause to be done by virtue thereof.

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 in the capacities and on the dates indicated.

Name	Title	Date
<u>/s/ Nadim Ahmed</u> Nadim Ahmed	President, Chief Executive Officer and Director (Principal Executive Officer)	March 14, 2024
<u>/s/ Jeffrey Trigilio</u> Jeffrey Trigilio	Chief Financial Officer (Principal Financial and Accounting Officer)	March 14, 2024
<u>/s/ Thomas Ebeling</u> Thomas Ebeling	Director	March 14, 2024
<u>/s/ Anne-Marie Martin</u> Anne-Marie Martin	Director	March 14, 2024
<u>/s/ Anthony Rosenberg</u> Anthony Rosenberg	Director	March 14, 2024
<u>/s/ David P. Ryan, M.D.</u> David P. Ryan, M.D.	Director	March 14, 2024
<u>/s/ Stephen Webster</u> Stephen Webster	Director	March 14, 2024