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 001-39866

eFFECTOR Therapeutics, Inc.

(Exact name of Registrant as specified in its Charter)

Delaware	**85-3306396**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
142 North Cedros Avenue , Suite B	
Solana Beach , CA	**92075**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (858) 925-8215

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, $0.0001 par value per share	EFTR	Nasdaq Capital Market
Warrants to purchase common stock	EFTRW	Nasdaq Capital 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, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☐ Accelerated filer ☐

☒ Smaller reporting company

Non-accelerated filer

☒

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 ☒

As of June 30, 2023, the aggregate market value of the common stock held by non-affiliates of the registrant, based on the closing price of the shares of common stock on the Nasdaq Capital Market of $20.76 per share, was approximately $

51.3
million.

The number of shares of registrant's common stock outstanding as of February 29, 2024 was

3,687,309
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CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS AND MARKET DATA

This Annual Report on Form 10-K ("Annual Report") contains forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and Section 27A of the Securities Act of 1933, as amended (the “Securities Act”). All statements other than statements of historical facts contained in this Annual Report, including statements regarding our future results of operations or financial condition, research and development plans, the anticipated timing, costs, design and conduct of our ongoing and planned preclinical studies and planned clinical trials for our product candidates, the timing and likelihood of regulatory filings and approvals for our product candidates, our ability to commercialize our product candidates, if approved, the potential to develop future product candidates, the potential benefits of strategic collaborations, the timing and likelihood of success, plans and objectives of management for future operations, and future results of anticipated product development efforts, are forward-looking statements. In some cases, you can identify forward-looking statements by terms such as “may,” “will,” “should,” “could,” “expect,” “intend,” "target," “plan,” “anticipate,” “believe,” “estimate,” “predict,” “potential,” “continue,” or the negative of these terms or other similar expressions. These forward-looking statements are only predictions. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our business, financial condition and results of operations. These forward-looking statements speak only as of the date of this Annual Report and are subject to a number of risks, uncertainties and assumptions, including those described in Part I, Item 1A, “Risk Factors”. The events and circumstances reflected in our forward-looking statements may not be achieved or occur, and actual results could differ materially from those projected in the forward-looking statements. Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein, whether as a result of any new information, future events, changed circumstances or otherwise. All forward-looking statements are qualified in their entirety by this cautionary statement, which is made under the safe harbor provisions of the Private Securities Litigation Reform Act of 1995.

This Annual Report includes trademarks, tradenames and service marks that are the property of other organizations. Solely for convenience, trademarks and tradenames referred to in this Annual Report appear without the ® and ™ symbols, but those references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights, or that the applicable owner will not assert its rights, to these trademarks and tradenames.

This Annual Report also contains industry, market and competitive position data from our own internal estimates and research, as well as from independent market research, industry and general publications and surveys, governmental agencies and publicly available information. In some cases, we do not expressly refer to the sources from which this data is derived. In that regard, when we refer to one or more sources of this type of data in any paragraph, you should assume that other data of this type appearing in the same paragraph is derived from the same sources, unless otherwise expressly stated or the context otherwise requires. In addition, while we believe the industry, market and competitive position data included in this report is reliable and based on reasonable assumptions, such data involve risks and uncertainties and are subject to change based on various factors, including those discussed in the section titled “Risk Factors.” These and other factors could cause results to differ materially from those expressed in the estimates made by the independent parties or by us.

PART I

Item 1. Business.

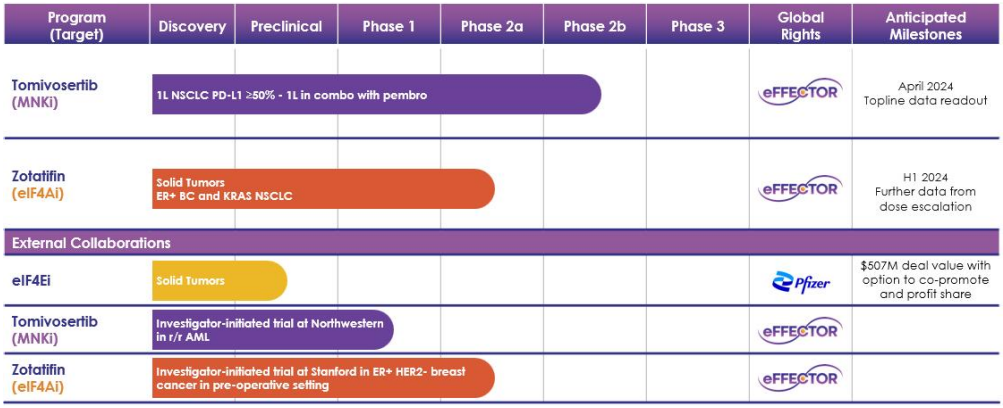
Overview

We are a clinical-stage biopharmaceutical company focused on pioneering the development of a new class of oncology drugs we refer to as selective translation regulator inhibitors ("STRIs"). Translation is the process in cells whereby the production of proteins is directed by information contained in genetic sequences. We utilized our proprietary selective translation regulation technology platform to internally discover a portfolio of small molecule STRI product candidates. Our product candidates target the eIF4F complex and its activating kinase, mitogen-activated protein kinase interacting kinase ("MNK"). The eIF4F complex is a central node where two of the most frequently mutated signaling pathways in cancer, the PI3K-AKT and RAS-MEK pathways, converge to activate the translation of select messenger RNA ("mRNA") into proteins that are frequent culprits in key disease-driving processes. Inhibition of any one of these targets simultaneously downregulates multiple disease-driving proteins before they are produced. Each of our product candidates is designed to act on a single protein that drives the expression of multiple functionally related proteins, including oncoproteins, which are proteins whose aberrant function can cause cancer, immunosuppressive proteins in T cells and proteins known to drive drug resistance that together control tumor growth, survival and immune evasion.

Our lead product candidate, tomivosertib, is an inhibitor of MNK, and is currently being evaluated in combination with KEYTRUDA® (also known as pembrolizumab), an FDA-approved inhibitor of programmed cell death protein 1 ("PD-1") in a randomized Phase 2b clinical trial in patients with metastatic non-small cell lung cancer ("NSCLC"). Our second product candidate, zotatifin, is an inhibitor of eIF4A, a component of the eIF4F complex, and is currently being evaluated in a Phase 1/2 clinical trial in patients with certain solid tumors. We have completed the initial dose escalation portion of this trial as well as the initial Phase 2 expansion portion in certain indications, including the evaluation of zotatifin in combination with fulvestrant and abemaciclib ("ZFA triplet") in patients with ER+ breast cancer. To date, we've reported data from five cohorts including patients with ER+ breast cancer, which demonstrated that zotatifin was generally well tolerated and showed signals of activity, including partial responses in heavily pretreated ER+ breast cancer patients. We have entered into a global collaboration and license agreement with Pfizer for our earliest stage program, inhibitors of eIF4E, and Pfizer is currently conducting investigational new drug application ("IND") enabling studies for this program. We believe each of our product candidates has the potential to improve patient outcomes and expand the utility of cancer treatments such as checkpoint inhibitors and targeted therapies.

The following table summarizes our current programs:

Figure 1: Our Pipeline



Targeting the eIF4F Complex and MNK

The eIF4F complex plays a critical role in the production of certain proteins that promote cell growth and division. During normal cellular function, extracellular factors such as growth factors or antigens, bind to cell surface receptors such as receptor tyrosine kinases ("RTKs") and T cell receptors ("TCRs") which initiate signaling through the PI3K-AKT and RAS-MEK pathways to stimulate growth. Under normal conditions, RTKs and TCRs are stimulated only transiently when cell growth and proliferation are required. However, when eIF4F activation is excessive and continuous, either because of oncogenic mutations that activate the PI3K-AKT and RAS-MEK pathways or the continuous presentation of antigens to TCRs in cancer, this results in a sustained upregulation of protein synthesis. This sustained upregulation leads to uncontrolled growth of tumor cells and exhaustion of T cells, which causes T cells to become less effective cancer fighters. Inhibiting targets in the eIF4F complex downregulates production of disease-driving proteins before they are synthesized. Proteins in tumor cells that are controlled by the eIF4F complex include: (1) multiple oncoproteins currently addressed by targeted therapies, such as RTKs and KRAS; (2) oncoproteins for which there are currently no targeted therapies available, such as MYC and Cyclin D1; and (3) certain proteins that are often upregulated in response to targeted therapies as a resistance mechanism, such as Cyclin D1, CDK4/6, RTKs, and KRAS. In T cells, MNK controls the production of multiple immunosuppressive factors including PD-1, PD-L1, TIM3, LAG3 and IL-10 that serve to exhaust the T cells and attenuate an immune response.

We believe there are several potential advantages of targeting MNK and the eIF4F complex. First, we can simultaneously aim to inhibit the production of multiple key disease -driving proteins that tumor cells have hijacked for growth, proliferation and survival. Rather than inhibiting a single target oncoprotein, our product candidates are each designed to downregulate multiple target oncoproteins that are often co-produced in cancer cells, or multiple immunosuppressive factors produced in activated T cells. In addition, our product candidates are designed to downregulate many proteins that are frequently over-produced by feedback pathways as resistance mechanisms that cause tumors to become less responsive to targeted therapies. Moreover, some of the disease-driving proteins such as MYC and Cyclin D1 that our product candidates are designed to downregulate are not currently addressable by any existing marketed agents due to the cellular location and complex shape of these targets. Lastly, our product candidates are designed to preserve normal cell function while at the same time enhancing tumor cell killing because these over-produced disease-driving proteins, which are dependent on MNK and the eIF4F complex for their production, are more critical for the growth and survival of tumor cells than normal cells.

Tomivosertib, a Potent and Highly Selective MNK Inhibitor

Our lead product candidate, tomivosertib, is an oral small molecule inhibitor of MNK that we are developing in combination with inhibitors of PD-1 and programmed cell death ligand 1 ("PD-L1"), collectively what we refer to as anti PD-(L)1 therapy, for the treatment of patients with solid tumors. MNK is a kinase that phosphorylates, or modifies by the enzymatic addition of a phosphate chemical group, a key protein within the eIF4F complex. Through inhibition of MNK, tomivosertib is designed to downregulate production of multiple immune-suppressive proteins and to reprogram T cells to delay exhaustion and dysfunction, increasing their ability to combat tumor cells. Tomivosertib has been shown to downregulate production of multiple immunosuppressive proteins, including PD-1, PD-L1, TIM3, LAG3 and IL-10, in preclinical studies. MNK plays a crucial role in the development of many tumors, including by controlling in a coordinated manner the expression of multiple factors that attenuate an immune response. Immune attenuation is a normal biological process that prevents overstimulation of the immune system. However, tumors frequently exploit the attenuation process in order to evade immune control. In preclinical studies, tomivosertib inhibited MNK, and enhanced the ability of the immune system to attack tumors. Immune checkpoints, such as PD-1, PD-L1, TIM3 and LAG3, are signaling molecules expressed on immune and tumor cells that can activate multiple mechanisms to attenuate an anti-tumor immune response. Over the past several years, a class of drugs called checkpoint inhibitors, primarily anti PD-(L)1 therapies, have emerged as an important new class of therapeutics in the treatment of cancer with the ability to block these immune checkpoint pathways. In 2022, the worldwide market value for anti PD-(L)1 therapies was greater than $35 billion, of which nearly half accounted for the treatment of patients with metastatic NSCLC. While checkpoint inhibitor treatment is very effective in patients for a variety of cancers, these agents are generally not curative, and a large majority of patients ultimately progress on their checkpoint inhibitor therapy, emphasizing the need for novel frontline combination treatments that may increase the proportion of patients that experience long term durable benefit, and delay progression in other

patients. We used PD-L1 expression level greater than or equal to 50% ("PD-L1≥50%") as a biomarker to enroll patients in the ongoing KICKSTART Phase 2b clinical trial of tomivosertib. There are an estimated 27,000 new U.S. patients per year with metastatic NSCLC that have PD-L1≥50%, which we estimate represents a $4 billion market opportunity in the United States. We also believe tomivosertib can be used to treat patients with PD-L1 expression levels 1-49%, which we estimate to represent another $5 billion dollar market opportunity in the Unites States.

Based on the encouraging results in our Phase 2a clinical trial, we initiated KICKSTART, a double-blind, randomized, placebo-controlled Phase 2b trial of tomivosertib combined with pembrolizumab in patients with metastatic NSCLC, with PD-L1≥50%. Pembrolizumab is owned and marketed by Merck for frontline NSCLC and several other indications. We initiated this trial in the second quarter of 2021 and expect to report topline data from the KICKSTART trial in early April 2024.

In our completed Phase 2a CPI-A clinical trial evaluating tomivosertib in combination with anti PD-(L)1 therapy in 17 patients with metastatic, NSCLC tomivosertib substantially extended the mPFS, the time duration during which patients remain alive and experience no disease progression, defined as an increase in their tumor assessment of greater than 20% or appearance of new lesions, in patients that were previously not responding to their anti PD-(L)1 therapies. In addition, as of study completion in September 2020, two of those 17 patients (12%) had confirmed partial responses, or decreases in tumor assessments of greater than or equal to 30% from baseline (“PRs”), one of which went on to achieve a confirmed complete response, or no detectable tumor lesions (“CR”) with a third patient showing 28% tumor regression. Tomivosertib was generally well tolerated in this clinical trial. In these 17 patients, once tomivosertib was added without any change or break in the anti PD-(L)1 therapy, there was a mPFS of 20 weeks. In this trial, patients with positive PD-L1 expression, a biomarker of T cell infiltration into tumors, as determined by post-hoc analysis of available data from diagnostic assays conducted during their treatment history, had mPFS of 53 weeks relative to 9 weeks for PD-L1 negative patients. Tomivosertib has been tested in over 200 patients in completed studies prior to the KICKSTART trial, including approximately 80 in combination with checkpoint inhibitors, and has demonstrated a favorable adverse event profile both as a single agent and in combination with checkpoint inhibitors.

We enrolled NSCLC patients in KICKSTART with PD-L1≥50%. Patients with PD-L1≥50% are the most responsive to pembrolizumab monotherapy in the frontline setting. In this setting, pembrolizumab monotherapy is a standard-of-care and pembrolizumab is the most widely used checkpoint treatment. Beyond this initial KICKSTART patient population, we plan to pursue additional clinical trials of tomivosertib NSCLC patients with PD-L1 expression 1-49% and in other indications where anti PD-(L)1 therapy is the standard-of-care, including other cancers where PD-(L)1 therapy is approved such as renal, bladder, triple negative breast cancer, or tumors with high microsatellite instability (“MSI-H”).

Our preclinical studies suggest combining tomivosertib with anti PD-(L)1 treatments can overcome mechanisms of resistance to checkpoint inhibitors, resulting in enhanced and durable sensitivity. In addition, our preclinical data demonstrated that tomivosertib, either as a single agent or in combination with anti PD-1 treatment, promoted anti-tumor immunity that persisted after stopping drug treatment. We believe that a key advantage of our approach is that by inhibiting MNK, tomivosertib is designed to downregulate the production of multiple immune checkpoint and immunosuppressive cytokine proteins in a coordinated manner to activate an immune response against tumors. Our preclinical data demonstrated that tomivosertib activity addressed key mechanisms of checkpoint inhibitor resistance by:

- increased target cell killing;
- simultaneous downregulation of several key checkpoint proteins associated with T cell exhaustion and dysfunction, including PD-1, PD-L1, LAG-3 and TIM-3;
- decreased production of immunosuppressive IL-10; and
- increased memory T cell population.

Collectively, these effects may complement checkpoint inhibitors by increasing tumor recognition, restoring immune response, improving durability of response and preserving antitumor immunity.

Zotatifin—A Potent and Selective eIF4A mRNA Helicase Inhibitor

Our second product candidate, zotatifin, is a small molecule designed to inhibit eIF4A, and is currently being evaluated in a Phase 1/2 clinical trial in patients with solid tumors. eIF4A is a helicase and is responsible for unwinding complex secondary structures, found in the 5' untranslated region ("UTR") of certain mRNA. This unwinding is a regulatory control step that leads to efficient stimulated production of important proteins that enable normal cells to respond to growth signals, and which are upregulated in tumor cells. Proteins in tumor cells that are controlled by eIF4A include multiple oncoproteins currently addressed by targeted therapies, oncoproteins for which there are currently no targeted therapies available and certain proteins that are often upregulated in response to targeted therapies as a resistance mechanism. Several of these oncoproteins can function in concert within a vertical signaling pathway to drive tumor growth, proliferation and survival in cancer, including certain breast cancers and NSCLC. In our preclinical studies, we discovered that most proteins inhibited by zotatifin have common distinct translation initiation regulatory elements in the 5' UTR of the mRNA recognized by zotatifin. Our preclinical data showed that zotatifin inhibition at physiologic concentrations in vitro only impacted translation of approximately 5% of mRNAs in a cell. Further, because these translation initiation regulatory elements are located in the mRNA prior to and independent from the coding sequences that dictate the amino acids included in protein synthesis, their inhibition is independent of protein mutation variants. We have initiated multiple Phase 2a expansion cohorts with zotatifin both as a single agent and in combination with targeted agents in ER+ breast cancer, FGFR+ breast cancer, and KRAS mutant NSCLC, and are currently focused on combinations in ER+ breast cancer. Together, we believe the estimated target population of breast cancer and NSCLC patients that meet the enrollment criteria in our Phase 2a expansion cohorts totals approximately 82,000 in the United States.

eIF4E—Global Collaboration with Pfizer

Our third program is focused on developing inhibitors of eIF4E and is currently being developed by Pfizer under the Pfizer Agreement. Pfizer is currently conducting IND-enabling studies for the lead product candidate. We have received $42 million to date under the Pfizer Agreement with the potential to receive up to an additional $465 million in future milestone payments as well as potential royalties on sales.

Our Proprietary STRIs—Invented Using Our Translation Regulation Technology Platform

We discovered our product candidates using our proprietary selective translation regulation technology platform. In addition, we assembled a team of founders and collaborators that are experts in the eIF4F complex and growth-dependent translation control. The importance of translation regulation in disease has become increasingly recognized in the pharmaceutical industry, and we believe we remain at the forefront of developing approaches to cancer therapy focused on STRIs. Utilizing our proprietary selective translation regulation technology platform, we developed an understanding of genes that are translationally upregulated in multiple tumor types and other diseases. This has enabled us to identify specific points of therapeutic intervention that may have a meaningful clinical effect and to identify patient populations most likely to respond to product candidates acting at these points of intervention. We believe our in-depth understanding of translation regulation biology combined with our sophisticated and dedicated structure-based design and computational chemistry approach to medicinal chemistry gave us a key advantage in pioneering the emerging field of translation regulation therapeutics and creates significant barriers to entry. We currently plan to focus our resources on the clinical development of our existing product candidates.

We have strong composition of matter and other intellectual property positions covering our product candidates and their uses and strive to protect our product candidates and our technology platform through an intellectual property estate in major markets throughout the world.

Strategy

Our goal is to continue to pioneer the development of and ultimately commercialize STRIs for the treatment of multiple types of cancer. To achieve our goal, we intend to pursue the following strategies:

- ***Advance our lead product candidate, tomivosertib, through clinical development and regulatory approval.*** We designed KICKSTART, a randomized Phase 2b clinical trial to evaluate tomivosertib in combination with pembrolizumab in patients with metastatic NSCLC, including patients with PD-L1 expression ≥50% in the frontline setting. We have concluded enrollment and expect to report topline data from the KICKSTART trial in early April 2024. If we obtain positive results from this Phase 2b clinical trial, we plan to follow this trial with subsequent Phase 3 registration trials, with the ultimate goal of securing marketing approval in order to enable treatment of cancer patients for whom current treatments are inadequate. We also plan to further expand our clinical development program with tomivosertib in additional tumor types.

- ***Develop zotatifin in patients with selected breast cancer and NSCLC tumors.*** We plan to advance our clinical trials of zotatifin in patients who we believe could most benefit from zotatifin's potential ability to downregulate multiple disease-driving proteins, including cell cycle proteins, proteins in the PI3K-AKT and RAS-MEK pathways and key resistance proteins. We plan to initially focus on patients with estrogen receptor positive ("ER+") breast cancer, where the current unmet need matches well with proteins downregulated by zotatifin. We also believe zotatifin may provide benefits in triple negative breast cancer ("TNBC") and NSCLC. We reported topline results for the fully enrolled ZFA triplet cohort in ER+ breast cancer at the ASCO 2023 Annual Meeting in June and at the San Antonio Breast Cancer Symposium in December. As of a cut-off date of May 3, 2023, partial responses were observed in 5 of 19 (26%) evaluable patients treated with the ZFA triplet, including four confirmed partial responses and one unconfirmed partial response. As of a data cut-off of November 17, 2023, in heavily pretreated patients with a median of four prior lines of therapy in the metastatic setting, the mPFS was 7.4 months. Both ZFA and ZF combinations were generally well tolerated with a large majority of adverse events Grade 1 or 2. Based on this favorable safety data, we resumed dose escalation using a more convenient dosing regimen of every other week. We have seen one response in the resumed ZF dose escalation cohort. Our goal is to progress zotatifin through registrational trials to provide a novel treatment to patients not sufficiently benefitting from existing therapies.

- ***Leverage Investigator Sponsored Trials.*** As part of our strategy to develop both tomivosertib and zotatifin in patient populations for whom current treatment options are inadequate, we selectively grant certain investigators access to our product candidates to evaluate indications that are not part of our current core focus in investigator sponsored trials. This strategy is capital efficient, in that the costs are generally incurred by the investigator sponsors who run the trials and we devote relatively limited financial and human capital resources. For example, Northwestern University is sponsoring a trial evaluating tomivosertib in patients with relapsed/refractory AML and Stanford University is sponsoring a trial of zotatifin in patients with ER+ HER2-breast cancer in the pre-operative setting.

- ***Selectively evaluate opportunities to maximize the potential of our programs in collaboration with leading biopharmaceutical companies.*** We retain worldwide rights to tomivosertib and zotatifin and plan to build the capabilities to effectively commercialize and market these product candidates for the treatment of cancer in North America, if approved. We plan to selectively evaluate potential opportunities on a program-by-program basis with biopharmaceutical companies whose research, development, and/or geographic capabilities complement our own with the goal to help mitigate clinical and commercial risk and/or maximize global commercial potential, including with respect to tomivosertib and zotatifin in markets outside of North America. For example, in December 2019, we entered into our research collaboration and license agreement with Pfizer for the development of our eIF4E program.

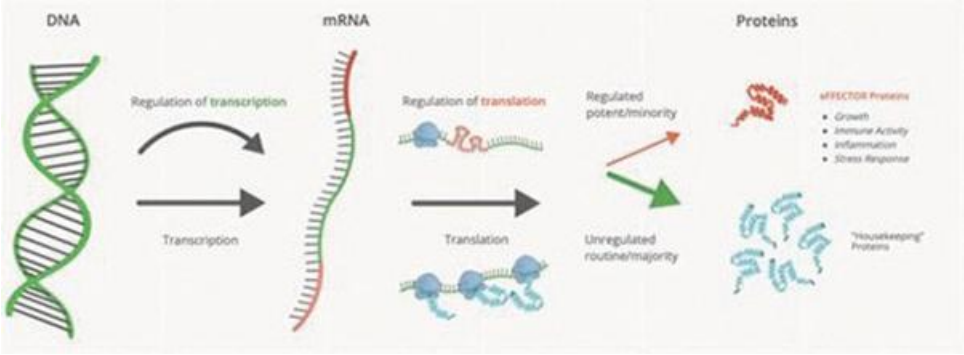
- ***Maintain our corporate culture as we continue to grow our business.*** We believe that our environment of scientific and intellectual integrity, combined with a focus on respect, collaboration and a commitment to patients will be essential for our continued success. We plan to continue to foster this culture as we progress our pipeline through clinical development.

Our Company Origin and Team

We founded our company in 2012 based on pioneering research in the laboratories of Drs. Davide Ruggero and Kevin Shokat, and subsequently licensed proprietary applications of translational profiling technology from UCSF. Our scientific founders and management team comprise industry veterans who have played important roles in the discovery and development of marketed small molecule drugs, monoclonal antibody therapeutics and cell therapy in oncology and other disease areas, including Adcetris, Avastin, Cabometyx, Cellcept, Cotellic, Inlyta, Tecentriq, Toradol and Viracept.

Role of Translational Regulations and the eIF4F Complex in Cancer

Figure 2: The process of gene expression.



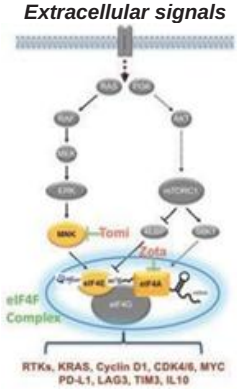
The information embodied in the human genome directs cellular behavior through a process known as gene expression, whereby the instructions encoded in RNA are used to direct protein synthesis. Two critical steps in gene expression are transcription and translation (see figure 2 above). Transcription is the copying of DNA sequences into mRNA, whereas translation is the subsequent utilization of mRNA sequences to direct protein synthesis. Ever since a unidirectional flow of information from DNA to RNA to protein was named the central dogma of molecular biology by Francis Crick 60 more than years ago, biologists have focused on transcription as the primary point of regulation in gene expression. More recently, we and our scientific founders have demonstrated that translation serves as a critical regulatory step for overproduction of a small fraction of proteins in a cell and is amenable to drug development. Translational regulation typically controls the expression of functionally related proteins that can have profound effects on cellular physiology, including response to extracellular and intracellular signals that drive cellular growth and division and immune cell function. Disruption of the translational regulation of these effector proteins' expression can drive the initiation and advancement of many diseases.

In cancer, the tightly controlled translation of certain mRNA frequently becomes dysregulated, via aberrant activation of the eIF4F complex, leading to the production of cancer-causing proteins and thus malignancy characterized by uncontrolled growth, immune evasion and metastasis. We believe our therapeutic approach can restore the translational control of processes that tumors have hijacked for their benefit, while preserving normal cell function. Translationally regulated processes occur in tumor cells and T cells and are important for the survival and growth of tumors, including evasion of the body's immune system. By acting in tumor cells and/or T cells, our product candidates can regulate production of many proteins that drive cancer progression and thus have the potential to combine the benefits of multiple targeted therapies and/or immunotherapies in a single therapeutic agent.

We have discovered that multiple processes responsible for attenuating an immune response, including upregulating checkpoint proteins and downregulating antigen presenting proteins, are controlled through translational regulation. The ability to attenuate an immune response is important in healthy tissue in order to maintain a balanced, non-self-destructive tenor following immune activation, but can also enable tumors to escape immune detection and destruction. By reprogramming T cells and blocking the translation of factors that allow tumors to escape immune mediated destruction, we believe we can release a patient's immune system to more efficiently attack tumors.

The eIF4F complex is a central junction where two of the most frequently mutated signaling pathways in cancer, the PI3K-AKT and RAS-MEK pathways, converge and represents a central node responsible for the translation of select mRNA into proteins that are frequent culprits in key disease-driving processes (see figure 3 below). Furthermore, continuous activation of MNK and the eIF4F complex in T cells leads to exhaustion and dysfunction. Our proprietary selective translation regulation technology platform has demonstrated that certain disease states, such as cancer, result in substantial upregulation of MNK and the eIF4F complex, which collectively activate production of multiple oncoproteins that drive tumor growth and proliferation, as well as immunosuppressive proteins that cause exhaustion and dysfunction in T cells. These disease-driving proteins are controlled by key translation regulation factors, including our three targets: MNK, eIF4A and eIF4E. MNK is a kinase that plays an important role in signaling and survival and regulate genes known to reduce, or downregulate, tumor immune response. MNK is the terminal kinase that phosphorylates eIF4E, a key component of the complex responsible for translation initiation, while eIF4A is responsible for unwinding mRNA structures prior to translation. We have discovered that MNK, eIF4A and eIF4E each selectively regulate the translation of a largely unique subset of mRNA providing the opportunity to impact distinct facets of tumor biology and disease subsets with each target in our portfolio.

Figure 3: eFFECTOR's targets are located at a key node between oncogenic signaling pathways and the proteins they produce.



We see a high potential for improved therapeutic outcomes by targeting key translation regulators in the eIF4F complex to treat cancer. We believe targeting these translational regulators to treat cancer will allow our product candidates to have a broader therapeutic impact on tumors relative to programs directed at inhibiting activity of a single translated protein. By regulating the expression of sets of functionally related proteins that drive both tumor growth as well as the body's response to the tumor, our product candidates are designed to generate effects on both tumor and immune cells that we believe can address many of the limitations of current targeted or immunotherapies.

Our Development Programs

We are developing a portfolio of selective small molecule STRIs targeting the eIF4F complex that we believe have the potential to overcome some of the limitations of current targeted or immunotherapies in a number of significant cancer types for which current treatments are limited or unavailable.

Lead Product Candidate: Tomivosertib, a Potent and Highly Selective MNK Inhibitor

Tomivosertib Overview

Tomivosertib is an oral small molecule MNK inhibitor in development for the treatment of patients with solid tumors in combination with anti PD-(L)1 therapy. MNK activates the eIF4F complex and controls the production of multiple immune-suppressive factors in T cells including PD-1, PD-L1, TIM3, LAG3 and IL-10. Through inhibition of MNK, tomivosertib is designed to reprogram T cells to delay exhaustion and dysfunction, providing a greater ability to combat tumor cells. In our completed Phase 2a CPI-A clinical trial evaluating tomivosertib in combination with anti PD-(L)1 therapy, in 17 patients with NSCLC tomivosertib demonstrated the ability to substantially extend the mPFS in patients that were previously not responding to their anti PD-(L)1 therapies. In addition, as of study completion in September 2020, two of those 17 patients (12%) have confirmed PRs, one of which went on to achieve a confirmed CR, with a third showing 28% tumor regression. Tomivosertib was generally well tolerated in this clinical trial. Based on these results, in the second quarter of 2021 we initiated patient enrollment in KICKSTART, a double-blind, randomized, placebo-controlled Phase 2b trial of tomivosertib combined with pembrolizumab, in patients with metastatic NSCLC. We expect to report topline data from the KICKSTART trial in early April 2024.

Market Opportunity

Lung cancer is the second most common cancer (excluding skin cancer) in the United States, and the leading cause of cancer death. The National Cancer Institute estimates over 237,000 new cases of lung cancer occurred in 2022. NSCLC is the most common subtype of lung cancer, accounting for 82% of all lung cancer diagnoses. Currently, approximately 75% of patients with NSCLC have tumors that lack a specific actionable mutation that is potentially conducive to approved mutation-specific targeted-therapies, but these patients may be eligible for anti PD-(L)1 as part of their frontline treatment for metastatic NSCLC. In 2022, the worldwide market value for anti PD- (L)1 therapies was greater than $35 billion, of which nearly half accounted for the treatment of patients with metastatic NSCLC. While checkpoint inhibitor treatment is very effective in patients for a variety of cancers, these agents are generally not curative, and a large majority of patients ultimately progress on their checkpoint inhibitor therapy, emphasizing the need for novel frontline combination treatments that may increase the proportion of patients that experience long term durable benefit, and delay progression in other patients. There are an estimated approximately 27,000 U.S. patients with metastatic NSCLC that have PD-L1 expression ≥50%, which we estimate represents a $4 billion market opportunity in the United States. We also believe tomivosertib can be used to treat patients with PD-L1 expression levels 1-49%, which we estimate to represent another $5 billion dollar market opportunity in the Unites States.

We believe that the PD-L1≥50% setting offers a substantial market opportunity in the United States and globally, and that there are many opportunities to expand the development of tomivosertib including other checkpoint responsive cancers, such as bladder cancer, renal cell carcinoma or MSI-H cancers.

Overview on Invention of Tomivosertib—A Highly Selective Inhibitor of MNK

We conducted an extensive medicinal chemistry effort incorporating structure-based drug design and identified tomivosertib as our lead product candidate. Tomivosertib has demonstrated highly potent and selective MNK inhibition, with a half-maximal inhibitory concentration (“IC50”), of one to two nanomolar (one billionth of a mole per liter) against each of the MNK isoforms, MNK1 and MNK2 in enzyme assays and inhibits the kinase through a reversible, ATP-competitive mechanism of action. Treatment of tumor cell lines with tomivosertib led to a dose-dependent reduction in eIF4E phosphorylation at serine 209 (IC50 = 1.4 to 21.5 nM), consistent with previous findings that phosphorylation of this site is solely dependent upon MNK. Additionally, when tested in vitro against an enzyme panel of 414 kinases, tomivosertib was shown to be a highly selective inhibitor of MNK, with a potency against MNK approximately 100-fold greater than its potency against two of the profiled kinases, CLK4 and DRAK1, and more than 1000-fold greater than its potency against the remaining 412 kinase targets tested.

Tomivosertib is designed to inhibit MNK and thus block phosphorylation of eIF4E and activation of the eIF4F complex downstream of MAPK signaling in T cells, and to selectively regulate protein translation of select mRNAs. We performed a comprehensive and quantitative measurement of the effect of tomivosertib inhibition on the

translation of expressed mRNA in multiple tumor cell lines and immune cell types. In this study, MNK was shown to play an important role in regulating anti-tumor immune response by controlling the expression of key known immune checkpoint proteins and cytokines that create an immunosuppressive tumor microenvironment, which together limit immune cell function.

We also tested tomivosertib in multiple in vivo tumor models, including syngeneic mouse models and genetically engineered mouse models of cancer conducted in immunocompetent mice, as well as multiple xenograft models comprising human tumor cells implanted in mice whose immune systems have been compromised in order to permit growth of human cells. Through this battery of in vivo preclinical tests, we have demonstrated that tomivosertib treatment as a single agent triggered a broad anti-tumor immune response in immunocompetent mouse models, including induction of anti-tumor immunity that persisted after tomivosertib dosing is stopped.

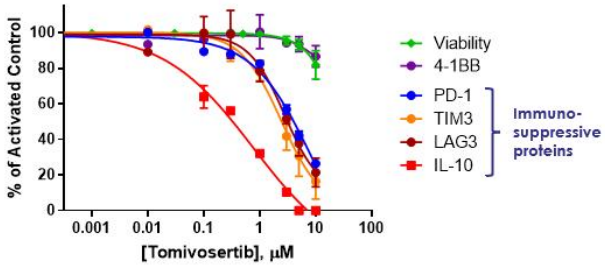
Tomivosertib Mechanism of Action: Stimulating the Immune System to Enhance Tumor Killing

Our preclinical and clinical data collected to date suggest combining tomivosertib with an anti PD-(L)1 inhibitor can overcome mechanisms of resistance to checkpoint inhibitors, resulting in enhanced sensitivity to checkpoint inhibitors. Our preclinical studies have shown that suppressing MNK broadly enhanced T cell effector response both in vivo and in vitro. Through its mechanism designed to reprogram T cells by blocking a pivotal intracellular signaling pathway, tomivosertib has been shown to:

- enhance tumor cell killing;
- downregulate several key checkpoint inhibitory proteins, including PD-1, PD-L1, TIM3 and LAG3;
- decrease production of immunosuppressive IL-10, while maintaining immune-stimulatory interferon gamma; and
- increase T cell central memory pool.

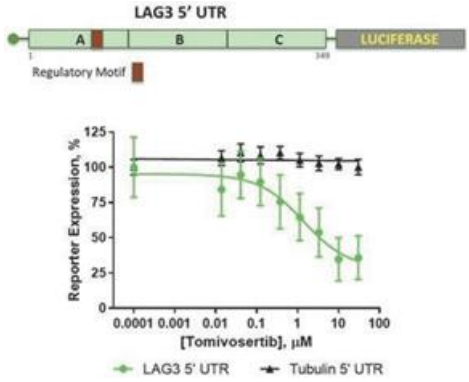
In preclinical studies, tomivosertib at clinically relevant concentrations has been shown to downregulate multiple immunosuppressive proteins simultaneously, including PD-1, PD-L1, TIM3, LAG3 and IL-10, as shown in figure 4 below. Specifically, incubating increasing concentration of tomivosertib with activated primary human T cells showed dose-dependent suppression of multiple checkpoints associated with T cell exhaustion, reaching statistical significance ($p<0.05$) in the 0.1 to 1.0 Î¼M range, coupled with maintenance of T cell viability and activation marker 4-1BB, an immune-stimulatory protein. Collectively, these experiments suggest that tomivosertib selectively reprogramed T cells resulting in robust effector target killing activity by suppressing exhaustion/ dysfunction properties.

Figure 4: Tomivosertib downregulates multiple checkpoint proteins and immunosuppressive IL-10.



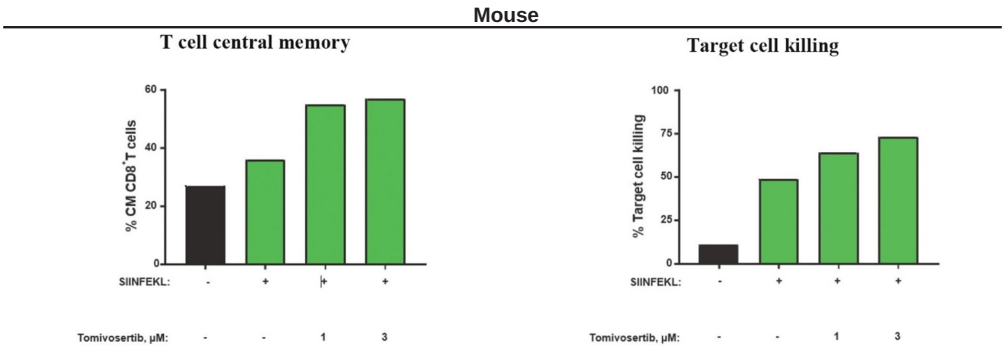
To explore the molecular mechanism of downregulation, we conducted a study placing sequences of the LAG3 5' UTR in a luciferase reporter assay and assessing for luciferase expression in T cells in the presence of increasing tomivosertib, which showed luciferase protein levels decrease as a function of tomivosertib concentration, reaching statistical significance ($p<0.05$) in the 10 Î¼M and above range (see figure 5 below). Similar results were obtained using the 5'-UTR of PD-L1. When the 5'-UTR of tubulin, a control protein not involved in immunosuppression, was used to drive luciferase expression, tomivosertib had no effect.

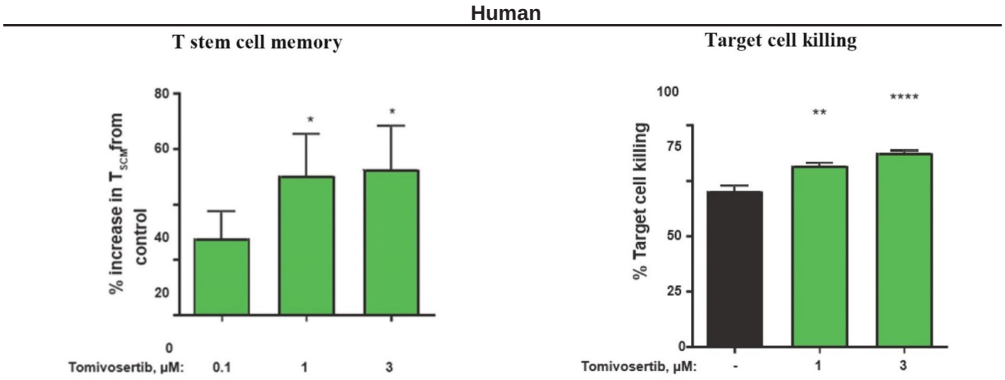
Figure 5: Tomivosertib downregulation of protein production is selective for the LAG3 5' UTR compared to tubulin 5' UTR.



To understand the impact of tomivosertib on T cell function, we utilized populations of mouse or human T cells engineered to recognize SIINFEKL, a peptide derived from ovalbumin, or the human protein CD19, respectively, as shown in figure 6 below. In mouse, stimulation of splenocytes comprised of the engineered T cells in the presence of increasing concentration of tomivosertib resulted in increased T cell central memory, as defined by cells with high expression of two markers CD44 and CD62L, and increased killing of target cells bearing the ovalbumin peptide. Likewise, stimulation of human engineered T cells targeting CD19 in the presence of increasing concentration of tomivosertib resulted in an increased pool of stem cell memory T cells, as defined by human surface markers CD45RA+CD27+ and increased killing of target cells expressing CD19.

Figure 6: Tomivosertib increases central memory and stem cell memory T cell pools and enhances target cell killing.





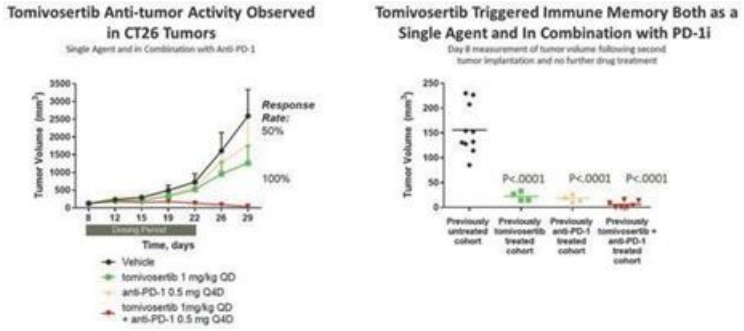
* p <0.05; ** p < 0.01; **** p < 0.001

Thus, treatment with tomivosertib has been shown to suppress production of multiple proteins and factors that lead to T cell exhaustion and dysfunction, increase the pool of memory T cells, and increase the killing of target cells by T cells.

Tomivosertib Has Been Shown to Trigger Immune Memory as a Single Agent and Enhanced antiPD-1 Activity in Preclinical Models

To demonstrate that the immune-enhancing properties of tomivosertib can lead to anti-tumor activity, we conducted a preclinical study in mice with intact immune systems and implanted them with syngeneic tumor CT26. These tumor-bearing mice were subsequently dosed with either tomivosertib, a mouse version of antiPD-1 antibody, or the combination of the two drugs (see figure 7 below). All dosing was conducted for 2 weeks. These experiments showed administration of either single agent tomivosertib or antiPD-1 therapy resulted in tumor reduction in about 50% relative to control untreated mice, whereas the combination of both resulted in full regression of the tumor in all mice treated. To demonstrate the role of immune memory, mice in each cohort that showed tumor regression were re-challenged with additional CT-26 tumor cells injected in the contralateral flank and in the absence of any further drug treatment. The results showed these mice, including those pretreated with single agent tomivosertib, and the combination of tomivosertib plus anti PD-L1, were able to reject subsequent tumor challenge, indicating enhancement of immune memory which was able to prevent growth of the newly implanted tumors. Further pharmacodynamic biomarkers in the CT26 models showed that tomivosertib treatment also resulted in enhanced intratumor ratio of effector CD8+, cytotoxic T cells, to FOXP3+, immunosuppressive regulatory T cells, and resulted in lowering immunosuppressive M2 macrophages within the tumor. Collectively, these data demonstrate that tomivosertib potentiated the immune system and resulted in durable inhibition of tumor growth. A recent publication by independent investigators at McGill University also showed that blocking MNK resulted in robust immune activation and tumor regressions across several mice models of melanoma (JCI, 2021) by further activating T cells and other immune cells.

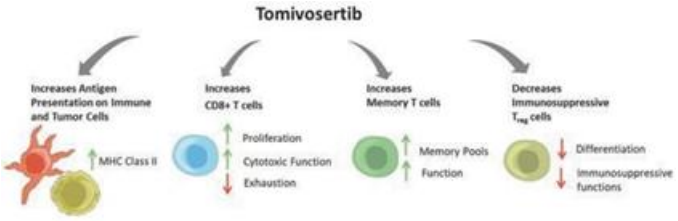
Figure 7: Preclinical studies show that tomivosertib plus an anti-PD-1 inhibitor resulted in regressions in all animals and persisting immune memory upon a tumor rechallenge even as a single agent.



Tomivosertib Acts on Multiple Cell Types That Drive Immune Response

Our data as well as recent data from McGill University suggest that blocking MNK on multiple immune cell types broadly engages the immune system to kill cancer cells (see figure 8 below). These mechanisms that drive immune activity include: (1) downregulating multiple checkpoint proteins and immunosuppressive cytokines on T cells; (2) increasing antigen presentation on dendritic cells; (3) increasing cytotoxic function of CD8+T cells and blocking T cell exhaustion/dysfunction; and (4) expanding T cell memory pools. Collectively, these effects may complement checkpoint inhibitors by increasing tumor recognition, restoring immune response, improving durability of response and preserving immune persistence.

Figure 8: Tomivosertib designed to act on multiple cell types that drive immune response.



Based on these findings, we believe tomivosertib has the potential to improve current immunological treatments for cancer by extending the benefit that patients experience with checkpoint inhibitors and restoring benefit to patients who have stopped responding to checkpoint inhibitors.

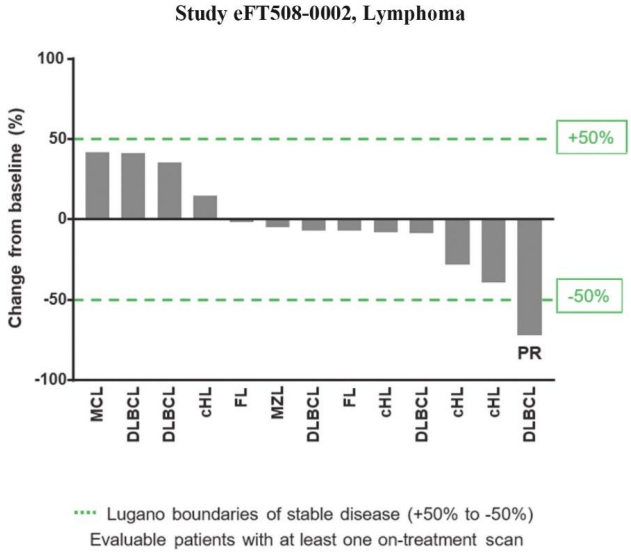
Phase 1 Dose Escalation Trial in Cancer Patients and Food Effect Study in Healthy Volunteers

We conducted two independent Phase 1 dose escalation clinical trials in solid tumors and lymphoma, respectively, to assess the safety, pharmacokinetics, pharmacodynamics and tumor control of tomivosertib. The primary endpoint of each trial was to establish MTD and determine a recommended Phase 2 dose (“RP2D”).

In our solid tumor Phase 1 dose escalation trial, we enrolled patients with any metastatic solid tumor who had progressed on standard of care therapies. From this trial we established the RP2D as 200 mg twice daily (“BID”), in a capsule formulation taken while fasted, and we subsequently conducted our Phase 2a CPI-A study using this dosing regimen. We also found that tomivosertib monotherapy treatment was generally well-tolerated in this patient population. The most frequent treatment-emergent AEs were nausea, vomiting, fatigue, constipation, dyspepsia and tremor. At doses that exceeded the RP2D, there was a higher incidence and severity of these AEs. The overall pharmacokinetic exposure showed increase as a function of dose with a half-life of approximately 12 hours, supporting a BID regimen.

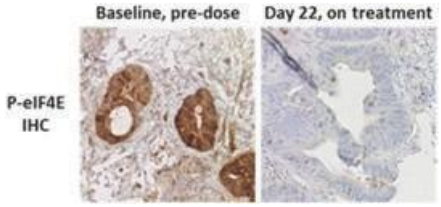
In our lymphoma Phase 1 dose escalation trial, we enrolled patients with B cell malignancies, predominantly patients with lymphoma, who had progressed on standard of care therapies. This trial initially tested safety in two dose levels, 300 mg or 450 mg once daily ("QD") and 200 mg BID or 300 mg BID, followed by limited expansion at the RP2D, 200 mg BID capsule. In this study, we established the MTD as 200 mg BID capsules taken fasted. The most common AEs experienced by patients in the RP2D expansion cohort were nausea, vomiting, hypercalcemia, and fatigue. One patient who received the capsule formulation at 200 mg BID achieved a confirmed PR, or a confirmed decrease in tumor size by at least 50%, per the Lugano criteria for lymphoma, determined from a scan after treatment as compared to the immediately prior scan (see figure 9 below). This patient had previously experienced a radiographic progression on R-CHOP (chemotherapy combination regimen of rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisone) and autologous stem cell transplant. Eight patients experienced stable disease, meaning their tumor assessments remained within the established boundaries for lymphoma of +/- 50% from baseline with no appearance of new lesions, with several of those patients demonstrating initial decreased tumor volume. Of 19 patients enrolled, 13 were radiographically evaluable with at least one on-treatment scan. Their overall best response is shown in Figure 9 below.

Figure 9: Phase 1 dose escalation trial included multiple patients with tumor regressions.



In addition, the pharmacodynamics in both peripheral blood mononuclear cells as well as in pre- and on-treatment tumor biopsies showed that phospho-eIF4E, a marker of MNK inhibition, was effectively inhibited at the RP2D. At the RP2D, we observed 90 to 100% inhibition of the MNK target as measured by phospho-eIF4E immunohistochemistry ("IHC") from pre- and on-treatment biopsies samples (see figure 10 below).

Figure 10: Marker of MNK activation is down regulated in tumors as shown from a patient's biopsy samples



We also completed two healthy volunteer food effect studies in healthy volunteers in order to evaluate the pharmacokinetic distribution of tomivosertib under either fasted or fed conditions. These were single-dose crossover studies evaluating drug exposure in the same patients at either of two different doses of tomivosertib, 100 mg or 200 mg, each taken with or without food. The results of these studies determined that food increased blood exposure concentration of tomivosertib by approximately two-fold, demonstrating that exposure of tomivosertib at 100 mg taken with food is comparable to 200 mg taken without food. To facilitate patient convenience moving forward, the RP2D for tomivosertib will be 100 mg BID taken with food starting within our Phase 2b KICKSTART trial.

Phase 2a Trial of Tomivosertib in Combination with Checkpoint Inhibitors

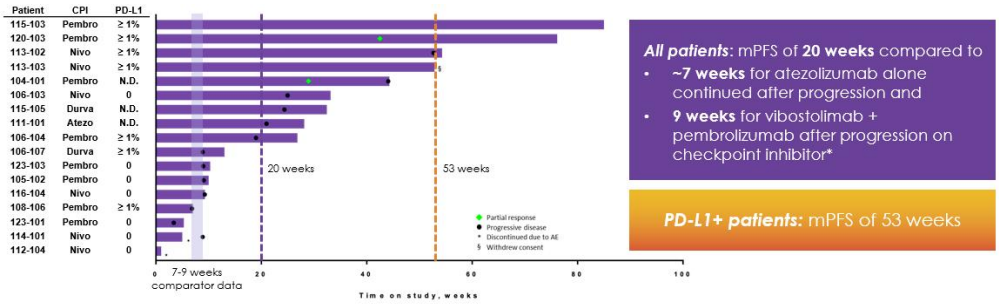
We conducted a Phase 2a CPI-A trial which evaluated tomivosertib in subjects who had initiated anti PD- (L)1 monotherapy and were not responding, that is had either developed progressive disease ("PD"), per RECIST criteria on their therapy, or a greater than 20% increase in target tumor size, or had undergone ≥12 weeks of anti PD-(L)1 therapy with no evidence of a PR or CR. We enrolled a total of 39 patients in this trial with diverse tumor types and any prior anti PD-(L)1 therapy approved by the FDA for the indication it was prescribed. Among these, 17 patients had a primary cancer type of NSCLC with advancing metastatic disease, on their anti PD-(L)1 therapy, including 16 of 17 who met the RECIST criteria for PD, prior to the addition of tomivosertib. Per our protocol, subjects continued their anti PD-(L)1 therapy according to their package insert, without a break in treatment schedule, and then initiated tomivosertib at 200 mg BID taken fasted 7 days prior to their next scheduled anti PD-(L)1 therapy. The primary objectives of this trial were to evaluate safety and antitumor activity, as measured by PFS and ORR. Overall, treatment with tomivosertib in combination with anti PD-(L)1 therapy was generally well tolerated. The AEs that occurred were generally consistent with the AE profiles of tomivosertib and anti PD-(L)1 therapy each as monotherapies. The most common AEs were nausea, fatigue, tremor, vomiting, and increased aspartate aminotransferase and alanine aminotransferase, which are two metabolic enzymes whose levels in blood are tracked as a measure of liver function. These AEs were generally grade 1 or 2 in severity.

In the Phase 2a study, 87% (34 of 39) of subjects experienced an adverse event potentially related to tomivosertib. The most common adverse events occurring in >20% of subjects and related to tomivosertib included: nausea, experienced by 16 (41.0%) subjects; tremor experienced by 15 (38.5%) subjects; fatigue experienced by 11 (28.2%) subjects, and vomiting experienced by 9 (23.1%) subjects. In the Phase 2a study, 28% of study subjects experienced a Grade 3 adverse event potentially related to tomivosertib. No specific Grade >3 adverse events potentially related to tomivosertib were experienced. The following Grade 3 adverse events potentially related to tomivosertib were experienced by two patients: alanine aminotransferase increase, blood creatinine phosphokinase (a metabolic enzyme whose levels in blood are assessed as a potential indicator of drug effects on muscle tissue) increase, and rash.

Of the total 39 patients enrolled, three (7.7%) patients had confirmed PRs, or decreases in tumor assessments of greater than or equal to 30% per RECIST 1.1 criteria. Of the patients with confirmed PRs, two had NSCLC and one had renal cell carcinoma. In addition, there was only one patient enrolled with gastric cancer and that patient had a 66% reduction of their target lesion upon addition of tomivosertib. One of five patients (20%) who enrolled with renal cell carcinoma had a confirmed PR. In the 17 patients with NSCLC, tomivosertib substantially extended the mPFS in patients that were previously progressing on their anti PD-(L)1 therapies. In addition, as of study completion in September 2020, two of those 17 NSCLC patients (12%) had confirmed PRs, one of which went on to achieve a confirmed CR after study completion, with a third showing 28% tumor regression. The patients with NSCLC generally had multiple treatments prior to coming on to study, with a median of two prior therapies, and 16

of the 17 (94%) NSCLC patients had RECIST progression on PD-(L)1 immediately prior to the addition of tomivosertib, and the other patient had a 13% increase in tumor size that was not classified as a RECIST progression. The mPFS in the 17 NSCLC patients was 20 weeks (see figure 11 below). Further, the mPFS in patients known to have PD-L1 expression level greater than 1% ("PD-L1>1%"), suggestive of an immune-responsive tumor, was 53 weeks. From our database, patients were either characterized as PD-L1=0, PD-L1>1% or PD-L1 unknown. As a comparison, in the Phase 3 OAK trial, which led to the FDA approval of atezolizumab, an inhibitor of PD-L1, in second line plus treatment of NSCLC patients, the average benefit of patients (n =168) treated beyond initial RECIST progression with continued treatment with atezolizumab was approximately 7 weeks. Thus, the benefit observed after the addition of tomivosertib in patients with NSCLC was nearly three-times greater relative to a historical comparator. Additionally, when vibostolimab, an agent directed against TIGIT, another immunosuppressive checkpoint protein, was added to pembrolizumab in patients who had progressed on pembrolizumab, a mPFS of 9 weeks was observed. However, because tomivosertib was not studied in head-to-head clinical trials with these agents, such data may not be directly comparable due to differences in study protocols, conditions and patient populations.

Figure 11. Swimmers plot showing length of time on tomivosertib plus anti PD-(L)1 combination therapy in NSCLC.

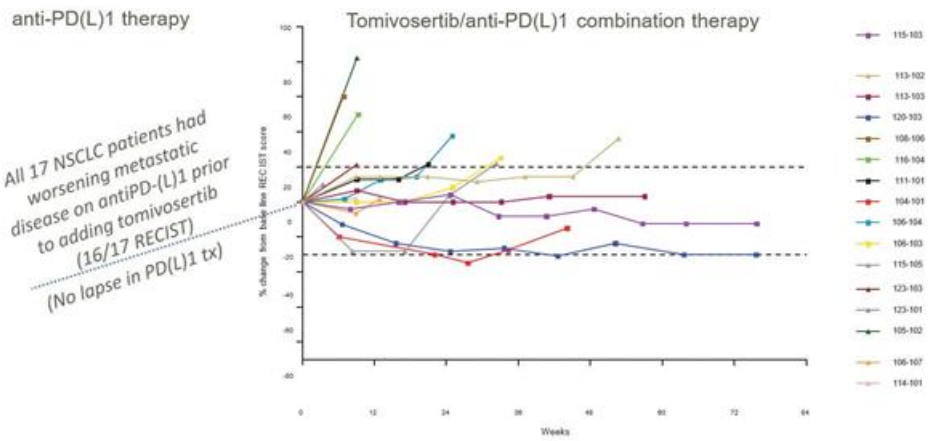


*FOR ILLUSTRATIVE PURPOSES ONLY: Data for atezolizumab from Treatment Beyond Progression (TBP) cohort in OAK trial. Data for vibostolimab+pembrolizumab from trial NCT02964013; Differences exist between trial designs and subject characteristics, and caution should be exercised when comparing data across trials.

Data through study completion in September 2020
Patients 115-103 and 120-103 continued treatment past study completion on Single Patient Expanded Access INDs.

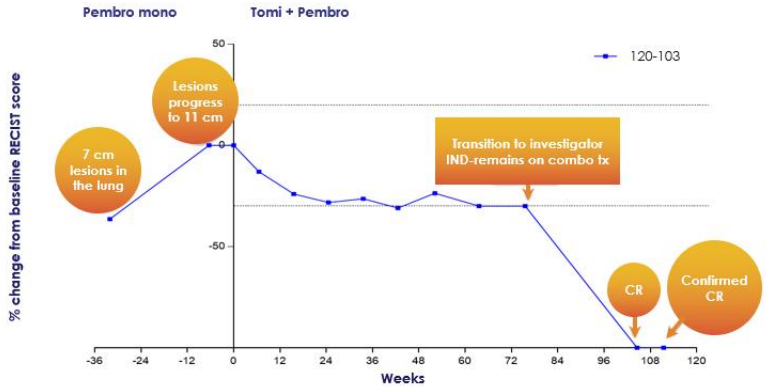
An important aspect of tomivosertib's activity in the P2a trial is its demonstrated ability to change the trajectory of tumor growth in patients that were already progressing on their anti PD-(L)1 therapy prior to the addition of tomivosertib. As shown in figure 12 below, most patients either stabilized or had their target tumor lesions regress upon the addition of tomivosertib, and 9 of the 17 (53%) patients experienced an extension of their PFS for at least 6 months which is generally believed to be clinically meaningful.

Figure 12: Spider plot showing trajectory of target tumor lesions after tomivosertib added to anti-PD(L)1 monotherapy.



As diagrammed in figure 13 below, one of our patients with NSCLC experienced a confirmed PR through approximately 80 weeks on our P2a trial before the trial was closed. This patient continued treatment with the combination of tomivosertib and pembrolizumab under an investigator sponsored compassionate use protocol after our trial ended, and subsequently experienced a confirmed CR, meaning a complete response confirmed on two scans, after a total of approximately 24 months on the combination therapy. This patient was PD-L1>50%.

Figure 13: Tumor trajectory of patient who experienced a confirmed complete response with the combination of tomivosertib and pembrolizumab after two years on the combination therapy.



In our Phase 2a trial, patients known to have tumors that express biomarker PD-L1 showed a preferential treatment response relative to those patients known to have tumors that exhibited no PD-L1 expression. To assess the impact of PD-L1 status, a known marker for sensitivity to anti PD-(L)1 therapy in NSCLC, on the benefit of adding tomivosertib, we conducted a post hoc Kaplan Meier (KM) analysis of PFS in patients positive for PD-L1 compared to patients negative for this marker. PD-L1 status was available for 14 of the 17 patients. The KM analysis showed that the benefit of tomivosertib was highest in PD-L1-positive patients, who had a mPFS of 53 weeks, compared to PD-L1-negative patients who had a mPFS of 9 weeks, a value similar to what has been seen in other

trials when patients received only anti-PD-(L)1 treatment after progression (see figure 14a below). We believe this correlation is consistent with tomivosertib's mechanism of reversing T cell exhaustion and re-invigorating the immune system, and we are excluding PD-L1 negative patients from our Phase 2b KICKSTART trial. In contrast to the impact of PD-L1 status on tomivosertib treatment, in the treatment beyond progression cohort of the OAK study of atezolizumab monotherapy, PD-L1 status was not correlated with response, suggesting that exclusion of PD-L1 negative patients may differentially enhance response in the tomivosertib plus pembrolizumab arm compared to the placebo plus pembrolizumab arm in our Phase 2b KICKSTART trial. The concentration of tomivosertib benefit in PD-L1 positive patients is further demonstrated in tornado plots, which show time on therapy after adding tomivosertib compared to time on the immediately prior anti-PD-(L)1 therapy. In PD-L1 positive patients, the time on therapy after adding tomivosertib is comparable to or greater than the time on prior therapy, whereas in PD-L1 negative patients the time on therapy after adding tomivosertib is shorter than the time on prior therapy (see figure 14b below).

Figure 14a: Kaplan Meier curves showing the difference between PD-L1 positive and PD-L1 negative patients in our P2a trial.

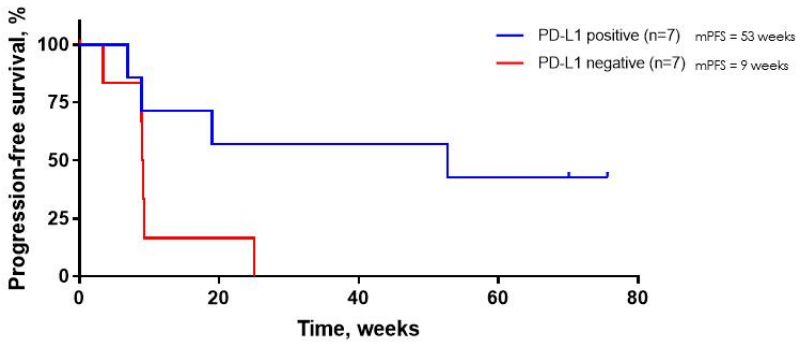
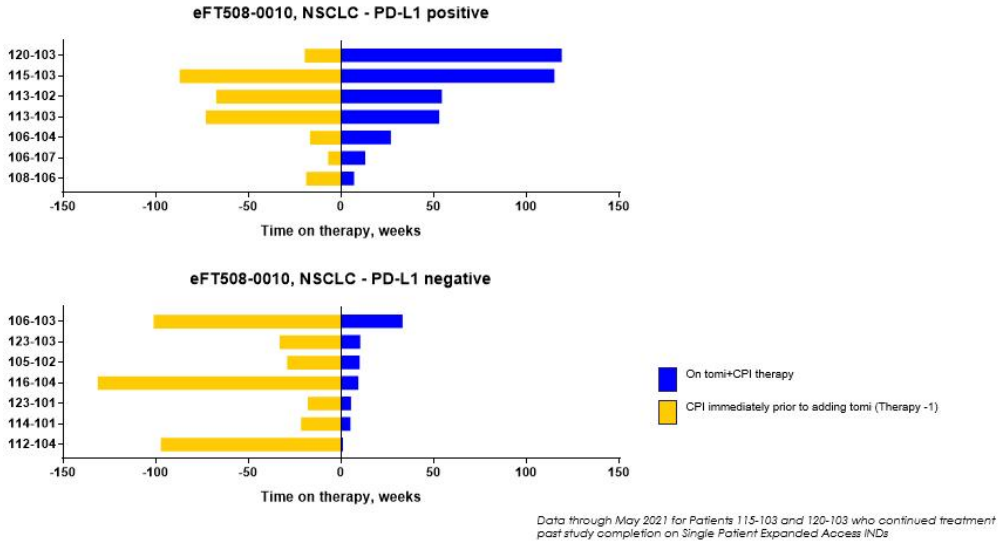


Figure 14b: Tornado plots showing the difference between PD-L1 positive and PD-L1 negative patients in our P2a trial.

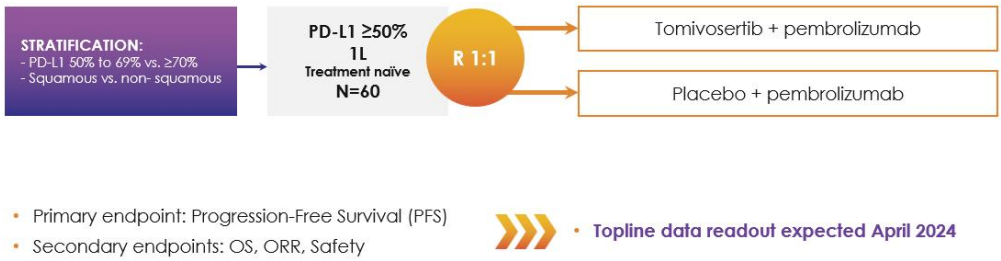


KICKSTART—A Randomized Phase 2b Trial Evaluating PD-L1≧50%

We are currently evaluating patients with metastatic NSCLC in KICKSTART, a randomized, double-blind, placebo-controlled Phase 2b clinical trial, as illustrated in figure 15 below. We are conducting this trial to evaluate the efficacy and safety of the addition of tomivosertib to frontline pembrolizumab treatment in NSCLC patients with PD-L1≥50%. In the KICKSTART trial, patients without prior treatment for metastatic NSCLC, including no prior anti PD-(L)1 treatment, were randomized 1:1 to receive tomivosertib plus pembrolizumab or placebo plus pembrolizumab.

We have enrolled 54 patients, originally targeted at 60, in the KICKSTART trial and the primary endpoint is PFS. In addition, OS, safety and ORR will be assessed as secondary endpoints. We expect to report topline data in early April 2024. This analysis will be after 37 PFS events, which provide 79% power to observe a Hazard Ratio of 0.65 at a p<0.2, compared to the original plan to report after 38 PFS events, which would have provided 80% power. If we obtain positive results from this Phase 2b clinical trial, we plan to follow this trial with subsequent Phase 3 registration trials.

Figure 15: Schematic of ongoing KICKSTART P2b trial in NSCLC frontline treatment indication.



SU2C Breast Cancer Trial

Tomivosertib has also been tested in a single-arm Phase 2a clinical trial in patients with metastatic breast cancer in combination with chemotherapy in a study led by Dr. Nahum Sonenberg of McGill University. We supplied tomivosertib capsules for this trial and all other costs were fully funded through a grant from Stand Up to Cancer (SU2C) Canada. The group initially planned to enroll up to 40 patients with metastatic breast cancer for whom approved and available therapies were not effective in controlling the cancer. Tomivosertib was administered in combination with paclitaxel or nab-paclitaxel. The primary objectives of this trial were to assess safety and tolerability of tomivosertib as monotherapy and in combination with paclitaxel, and to assess pharmacodynamic effects as an indication of biological activity of tomivosertib treatment. The group elected to enroll only 19 patients, which the investigators believe will be sufficient to report positive pharmacodynamic data.

Northwestern University Investigator-Initiated Trial in Patients Acute Myeloid Leukemia

In 2023, we announced the initiation of an investigator-initiated Phase 1 dose escalation trial evaluating tomivosertib in patients with relapsed/refractory Acute Myeloid Leukemia (AML). The trial will be conducted at the Robert H. Lurie Comprehensive Cancer Center of Northwestern University and chaired by Shira Dinner, M.D., Associate Professor of Medicine (Hematology and Oncology). Leonidas Platanias, M.D., Ph.D., Director, Robert H. Lurie Comprehensive Cancer Center and Professor of Medicine (Hematology and Oncology) and Biochemistry and Molecular Genetics, and Jessica Altman, M.D., Professor of Medicine (Hematology and Oncology) will serve as Co-Chairs of the trial. The trial is designed to capitalize on previously published results that showed preclinical activity of tomivosertib in AML models. Once the appropriate dose for tomivosertib in AML is identified, the investigator hopes to expand the trial to test tomivosertib in combination with venetoclax and azacytidine.

Additional Exploratory Tomivosertib Trials in Solid Tumors

Tomivosertib was evaluated in several additional Phase 2a trials prior to our CPI-A and KICKSTART trials. In 2019, we completed a combination trial with avelumab, an inhibitor of PD-L1, in patients with microsatellite stable colorectal cancer (“MSS CRC”), through a clinical trial collaboration and supply agreement with Pfizer and Merck KGaA. MSS CRC is generally not responsive to immunologic agents. We enrolled 55 patients in this trial including an initial 10 patients in the dose escalation portion of tomivosertib combined with the standard of care dose of avelumab, 15 patients who initially received tomivosertib as monotherapy and were allowed an option to crossover to a combination of tomivosertib and avelumab, and 30 patients who received the combination of tomivosertib and avelumab. Tomivosertib was generally well tolerated in combination with avelumab at 200 mg BID, taken fasted, as the RP2D. We observed one confirmed PR and 25% of the patients remained on study for >12 weeks in this typically immune-refractory patient population. However, based on tomivosertib’s mechanism of action, we elected to focus future development of tomivosertib on more immune-responsive cancers. Prior to this trial, we enrolled 16 patients in a monotherapy trial treating castration resistant prostate cancer (“CRPC”). We observed no PRs or CRs in this CRPC trial and seven of the 16 (44%) patients experienced SD. We stopped this trial due to limited activity and to focus on further development in combination with checkpoint inhibitors.

Zotatifin—A Potent and Selective eIF4A mRNA Helicase Inhibitor

Zotatifin Overview

Our second product candidate in clinical development, zotatifin, is a small molecule inhibitor of eIF4A, a subunit of the eIF4F complex that regulates translation of cell proliferation proteins which can be oncogenic drivers in cancer. eIF4A is a helicase responsible for unwinding complex mRNA secondary structures found in the 5’ UTR of select mRNA, allowing efficient ribosome binding and subsequent translation of mRNA into important proteins. Zotatifin is designed to downregulate multiple oncoproteins, several of which are up-regulated as part of well-characterized feed-back pathways causing resistance to specific targeted therapies. Our preclinical experiments show zotatifin has the potential to both work as a single agent or in combination with several targeted therapies to prevent resistance, including in important indications such as several breast cancer tumor types and KRAS mutant NSCLC. We have completed the initial dose escalation portion of this trial and are currently evaluating zotatifin in

combination with fulvestrant and abemaciclib ("ZFA triplet") in a Phase 2a open-label expansion cohort in patients with ER+ breast cancer. In light of the favorable safety results observed in the Phase 1/2 clinical trial and target engagement data generated to date, we resumed dose escalation of zotatifin in combination with fulvestrant ("ZF doublet") in patients with ER+ breast cancer to determine if a higher dose of zotatifin can be utilized in future clinical studies. In the first quarter of 2024, dose escalation of the ZF doublet concluded with the determination of 0.2 mg/kg zotatifin Q2W as the RP2D for the ZF doublet.

To date, we've reported data from five cohorts including patients with ER+ breast cancer, which demonstrated that zotatifin was generally well tolerated and showed signals of activity, including partial responses in heavily pretreated ER+ breast cancer patients. We reported topline results for the fully enrolled ZFA triplet cohort in ER+ breast cancer at the American Society of Clinical Oncology ("ASCO") 2023 Annual Meeting in June, where as of a cut-off of May 3, 2023, partial responses were observed in 5 of 19 (26%) evaluable patients treated with the ZFA triplet, including four confirmed partial responses and one unconfirmed partial response. In addition, a partial response was observed in 1 of 3 (33%) patients in the first resumed dose escalation cohort of the ZF doublet. Both ZFA and ZF combinations were generally well tolerated with a large majority of adverse events Grade 1 or 2. We reported mature data for the ZFA triplet cohort at the 2023 San Antonio Breast Cancer Symposium (SABCS®) in December, where median PFS was 7.4 months as of a cut-off date of November 17, 2023.

Market Opportunity

The National Cancer Institute estimates that in the United States over 287,000 new cases of invasive breast cancer and over 237,000 new cases of lung cancer occurred in 2022. ER+ breast cancer represents approximately 60% or more of all breast cancers and NSCLC is the most common subtype of lung cancer, accounting for 82% of all lung cancer diagnoses. KRAS mutant lung cancer is estimated to represent about 25% of NSCLC. In metastatic ER+ breast cancer, patients are currently typically treated with inhibitors of estrogen receptor ("ER") and CDK4/6, but most patients eventually progress. Thus, there is a need for improved therapies. In KRAS mutant lung cancer, targeting KRAS G12C mutation subtype with selective inhibitor, two agents have received approval by the FDA, however, resistance is emerging and this agent is not effective against other KRAS mutation subtypes such as G12A, G12D or G12V.

We are currently focusing development of zotatifin in ER+ metastatic breast cancer. Based on our preclinical studies, we believe that a combination of zotatifin with an ER inhibitor, such as fulvestrant, may be able to treat patients with ER+ breast cancer, representing about 42,000 patients annually in the U.S. Fulvestrant is generic and marketed by several companies including Astrazeneca who markets it under the brand name Faslodex for the treatment of breast cancer. Furthermore, we believe a triple combination of zotatifin with fulvestrant and a CDK4/6 inhibitor may provide even greater activity. Currently marketed CDK4/6 inhibitors include abemaciclib (Verenzio), palbociclib (Ibrance) and ribociclib (KISQALI). We also believe that zotatifin could be active in other subsets of breast cancer, including FGFR+ and HER2+ subgroups. FGFR2 and HER2 are RTKs, important proteins driving cancer. Inhibitors of multiple RTKs are available on the market today such as inhibitors of HER2, EGFR and FGFR. However, challenges remain with emergent resistance to individual RTK inhibitors through either mutation or upregulated production of RTKs and/or downstream effector proteins. Based on preclinical data, zotatifin has single agent activity against certain ER+ breast cancers that also have mutations in either HER2 or FGFR, which we estimate combined total approximately 17,000 patients.

In NSCLC, we plan to develop zotatifin KRAS mutant NSCLC as either a single agent or in combination with targeted agents such as those inhibiting KRAS G12C.KRAS activating mutations occur in approximately 25% of patients with NSCLC and there are limited drugs available to treat these patients. There are multiple activating mutation subtypes of KRAS, including G12A, G12C, G12D and G12V, and we estimate there are 28,000 KRAS mutant NSCLC patients in the U.S.

In TNBC, preclinical research performed at Baylor College of Medicine ("Baylor") showed that zotatifin inhibits the production of sox4 and fgfr1 which leads to the induction of IFN-related pathways and the remodeling of the tumor immune microenvironment, and results in the inhibition of cell proliferation. Moreover, zotatifin combined synergistically with carboplatin, a chemotherapy used to treat TNBC, to suppress TNBC tumor progression. This research provides an important rationale for evaluating zotatifin in TNBC, a high unmet need indication.

Overview of Invention of Zotatifin—Persistent Chemistry Effort Incorporating a Natural Product as a Design Element

The discovery process that led to the identification of zotatifin as a clinical candidate began with a core pharmacophore found in silvestrol and rocaglamide A ("Roc A"), two natural products that have shown interesting biological activities but lack certain drug-like properties. We undertook a sophisticated and comprehensive computational analysis of available information, including a crystal structure of Roc A bound to eIF4A and RNA. Additionally, we used mutational analysis to identify critical amino acids in eIF4A required for binding, and structure-activity relationships amongst our early program compounds, to identify a preferred orientation of certain substituents on the core pharmacophore. These insights enabled an efficient process whereby we limited synthesis and testing to compounds with a high chance of retaining strong affinity for eIF4A. This allowed us to focus our resources on a persistent discovery plan conferring drug-like properties to mature program compounds.

Zotatifin Mechanism of Action: Downregulating Multiple Disease-Driving Proteins in One Pill

eIF4A is a catalytic subunit of the eIF4F complex that regulates translation of cell proliferation proteins which can be oncogenic drivers in cancer. eIF4A is a helicase and is responsible for unwinding complex secondary structures found in the 5' UTR of select mRNA. This unwinding is a regulatory control step that leads to efficient production of important proteins that enable normal cells to respond to growth signals, and which are upregulated in tumor cells.

As shown in figure 16 below, eIF4A is a located at a central node at the intersection where two important cell growth and proliferation pathways, the PI3K-AKT and RAS-MEK pathways, converge to activate the translation of select messenger mRNA into proteins that are frequent culprits in key disease-driving processes. eIF4A regulates production of multiple growth-dependent proteins involved in cell growth, proliferation and survival. Many of these proteins are oncogenic drivers and often upregulated in cancer. Proteins in tumor cells that are controlled by eIF4A include:

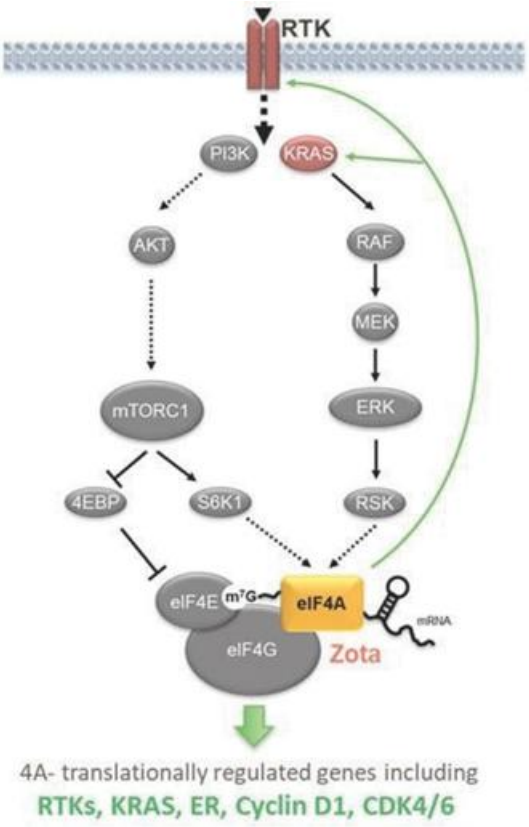
(1) multiple oncoproteins for which targeted therapies such as ER, HER2, FGFR and KRAS G12C are approved by the FDA;

(2) oncoproteins for which there are currently no targeted therapies available, such as MYC and Cyclin D1; and

(3) certain proteins that are often upregulated in response to targeted therapies as a resistance mechanism, such as Cyclin D1, CDK4/6, RTKs and KRAS.

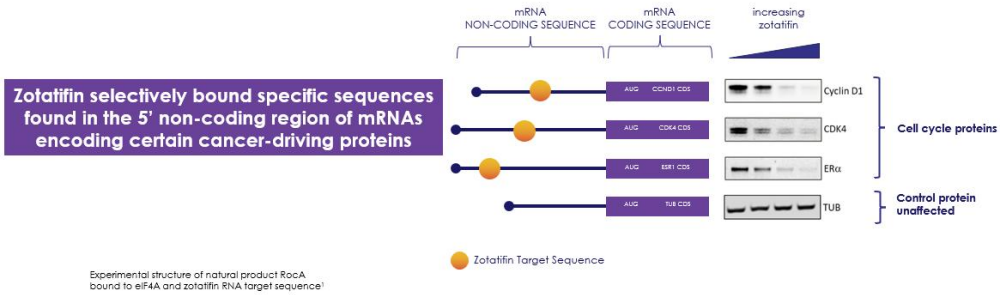
Several of these oncoproteins can function in concert within a vertical signaling pathway to drive tumor growth, proliferation and survival in cancer, including certain breast cancers and NSCLC. Simultaneously inhibiting more than one oncoprotein in a vertical signaling pathway and/or set of cooperating pathways has become recognized as a generalizable way to approach cancer therapy. Because zotatifin simultaneously regulates multiple oncoproteins in the same vertical signaling pathways, as well as set of cooperating pathways, this may potentially lead to single agent activity. In addition, by combining with another targeted therapy acting within the same pathway, zotatifin has the potential to augment inhibition of multiple oncogenic drivers to deepen or broaden the response to zotatifin and complementary agents. Resistance to these targeted therapies can occur via upregulation of both the protein which is being targeted as well as other pathway proteins also regulated by eIF4A.

Figure 16: eIF4A is a key node that is activated by multiple RTKs and KRAS and controls production of many cancer driving proteins.



As illustrated in figure 17 below, we discovered that most proteins inhibited by zotatifin have common distinct translation initiation regulatory elements in the 5' UTR of the mRNA that are recognized by zotatifin. These common regulatory elements are found in the mRNA of multiple key oncoproteins that drive cancer. In addition, many of these proteins are over-expressed in response to targeted therapies, leading to drug resistance. Importantly, our preclinical data showed that zotatifin inhibition in physiologic concentrations in vitro only impacted translation of approximately 5% of mRNAs in a cell, indicating that global protein synthesis is unaffected at these concentrations. Further, because these translation initiation regulatory elements are located in the mRNA prior to and independent from the coding sequences that dictate the amino acids included in protein synthesis, their inhibition is independent of protein mutation variants. For example, in preclinical studies, zotatifin inhibited production of KRAS across multiple activating mutation subtypes such as G12C, G12V and G12D due to their common translation initiation regulatory elements.

Figure 17: Zotatifin is selective for proteins that drive tumor growth and resistance.



Preclinical Studies with Zotatifin

Preclinical experiments showed that zotatifin was most active in models with either two or more select oncogenic drivers that are directly downregulated by zotatifin. In addition, preclinical models have also demonstrated zotatifin's tumor growth inhibition activity in combination with drugs that target specific protein in the same vertical pathways, such as inhibitors of HER2, FGFR, AKT or PI3K, or in combination with drugs against targets that are activated by these pathways such as ER and CDK4/6. There are no currently available drugs that directly target Cyclin D1 or MYC and we believe zotatifin may be an attractive drug candidate in cancers driven by these proteins.

We believe the potential of zotatifin to downregulate multiple disease-driving proteins involved in specific breast cancer tumor types, including ER, Cyclin D1, CDK4/6 FGFR, and HER2, may provide an important treatment option for patients with these tumor types. In our preclinical studies, zotatifin demonstrated efficacy in several mice models of breast cancers. For example, in the MDA-MB-361, ER+HER2+PIK3CA mutant, model of breast cancer, treatment with either zotatifin or palbociclib, an inhibitor of CDK4/6, resulted in comparable efficacy. Interestingly, co-treatment with both zotatifin and palbociclib together showed strong combination activity with tumor regressions persisting for more than 40 days after dosing with the combination had stopped (see figure 18a below). In multiple preclinical models, zotatifin downregulates production of Cyclin D1. CDK4, Cyclin D1 and p27 can form an active trimer complex that promotes cell division and is refractory to CDK 4/6 inhibitors, and upregulation of free Cyclin D1 has been shown to promote resistance to CDK4/6 inhibition. Therefore, we believe a combination of zotatifin with a CDK4/6 inhibitor has the potential to be a promising treatment option for patients with ER+ metastatic breast cancer (see figure 18b below).

Figure 18a: Zotatifin demonstrates single agent activity comparable to palbociclib and compelling tumor regression in combination with palbociclib in a preclinical model of breast cancer.

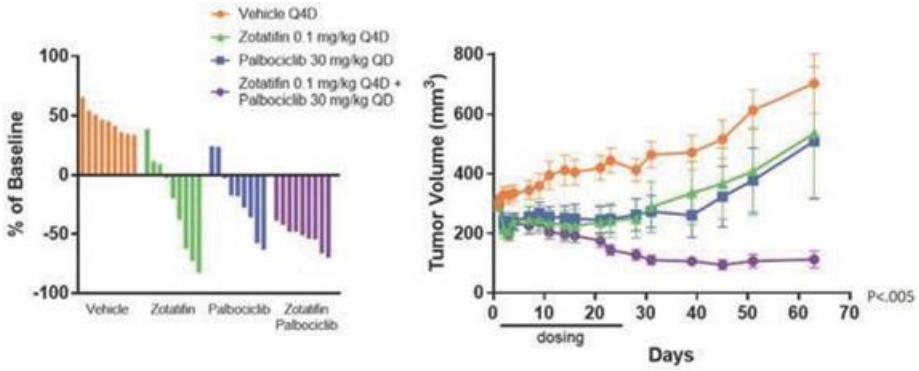
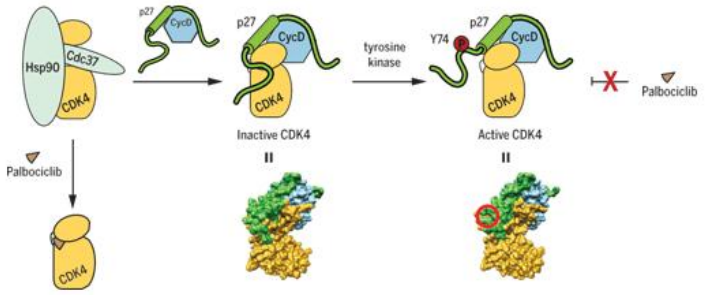


Figure 18b: Zotatifin downregulation of Cyclin D1 expected to antagonize formation of the p27/D1/CDK4 trimer.

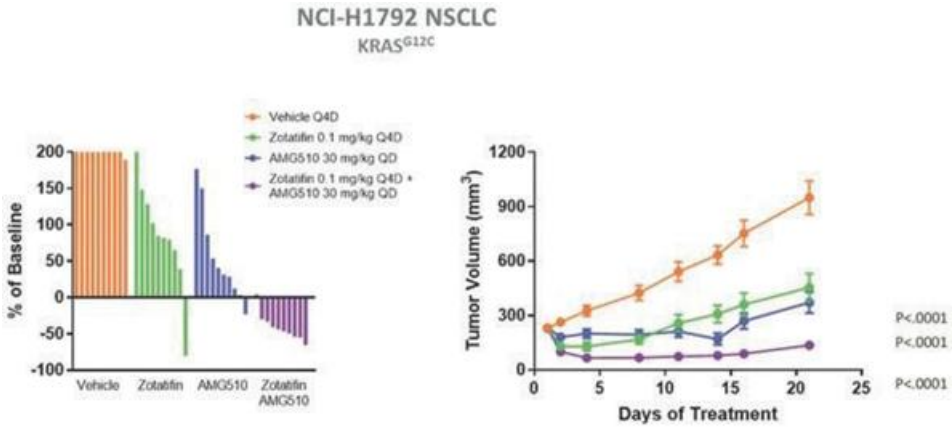


Palbociclib, abemaciclib and ribociclib were found to be inactive against the active, phosphorylated trimeric form of p27/D1/CDK4

Guilley, et al Science 2019

Across a panel of approximately 100 cell lines evaluated, zotatifin treatment resulted in apoptosis in many lines harboring activating KRAS mutation. Furthermore, in cell proliferation and apoptosis assays, zotatifin showed strong activity in combination with a KRAS G12C inhibitor produced by Amgen, known as AMG510 or sotorasib, which recently received regulatory approval. We believe that zotatifin has the potential to overcome mechanisms of resistance to inhibitors of KRAS G12C by downregulating Cyclin D1 and certain RTKs, as well as inhibiting de novo KRAS protein production. Our preclinical studies showed that in models of NCI-H1792 KRAS G12C mutant NSCLC, zotatifin had similar tumor growth inhibition activity as AMG510. This preclinical data also showed that the combination of zotatifin and AMG510 led to tumor regressions in almost all animals tested (see figure 19 below). In preclinical models of KRAS mutant tumors, zotatifin downregulated KRAS, Cyclin D1 and several RTKs. Upregulation of these proteins has been shown to promote resistance to KRAS inhibition and, therefore, we believe a combination of zotatifin with a KRAS inhibitor has the potential to be a promising treatment option for patients with KRASG12C NSCLC.

Figure 19: Zotatifin demonstrates single agent activity comparable to KRAS G12C inhibitor, AMG510, and compelling tumor regression in combination with AMG510 in a preclinical model of KRASG12C NSCLC.



Phase 1/2 Clinical Trial Observations and Plans

We are evaluating zotatifin in a Phase 1/2 clinical trial in patients with certain solid tumors. We completed the initially planned dose escalation portion of this trial as well as the initial Phase 2 expansion portion in certain indications, including the evaluation of zotatifin in combination with fulvestrant and abemaciclib (“ZFA triplet”) in patients with ER+ breast cancer. The primary objectives of the Phase 1 portion of the trial included assessing safety and selecting a RP2D of zotatifin administered intravenously (“IV”). In the initial Phase 1 dose-escalation portion of the trial, we enrolled 37 patients at doses ranging from 0.005 mg/kg IV weekly to 0.1 mg/kg IV weekly including modified regimens of two weeks on treatment followed by one week off treatment. During dose escalation we observed three DLTs, including one DLT of grade 2 thrombocytopenia that prevented the completion of continued therapy throughout the DLT window observed in the 0.035 mg/kg IV weekly cohort and two DLTs observed in the 0.1 mg/kg IV weekly administered two weeks on and one week off cohort. One patient experienced a DLT of grade 3 anemia and another patient experienced a DLT of grade 3 gastrointestinal bleed in the setting of grade 2 thrombocytopenia. Based on this data, we concluded that the 0.1 mg/ kg dose exceeded the MTD. Overall AEs across all dose levels included predominantly Grade 1 and Grade 2 nausea, vomiting and anemia. Zotatifin exhibited dose-proportional pharmacokinetic exposure and had a relatively long half-life of approximately four days. At doses of 0.035 mg/kg and above, zotatifin has achieved exposures in blood in humans that correspond to levels resulting in preclinical activity in mice studies.

In June 2021, based on an evaluation of data from the Phase 1 dose escalation portion of our Phase 1/2 clinical trial of zotatifin, we selected 0.07 mg/kg given on Day 1 and Day 8 of a 21-day cycle, a dose and schedule at which we observed no DLTs, as the RP2D.

We initiated clinical evaluation of zotatifin in Phase 2a indication-specific expansion cohorts. The primary objectives of the Phase 2a cohorts are to further characterize safety and to identify initial signals of efficacy in biomarker-specific patient populations. We initiated four expansion cohorts, three in mBC and one in NSCLC. Specifically, we initiated cohorts evaluating zotatifin as a monotherapy treatment in ER+/FGFR+ mBC, as a combination with fulvestrant, an FDA-approved inhibitor of ER, in ER+ mBC, as a combination with fulvestrant and abemaciclib, an FDA-approved inhibitor of CDK4/6, in ER+/HER2- mBC, and as a combination with sotorasib, an FDA approved KRAS inhibitor, in KRAS G12C NSCLC. Each of our Phase 2a expansion cohorts were structured as a Simon’s Two Stage design in which seven patients would be enrolled in the first stage of the trial and assessed for activity prior to advancing to the second stage of the trial.

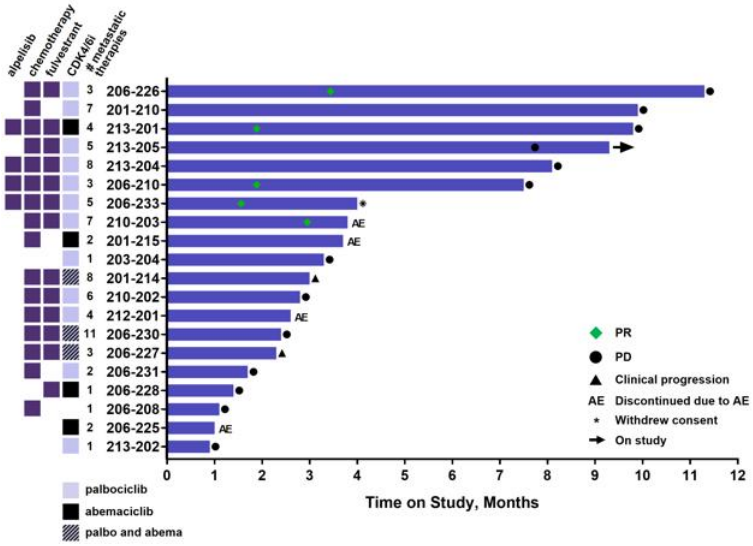
In June 2022, we reported interim data from four of the ongoing Phase 2a expansion cohorts. As of the March 4, 2022 cutoff date, the interim results showed that zotatifin was generally well tolerated at the .07 kg/mg dose and treatment emergent adverse events ("TEAEs") related to zotatifin were mostly mild, readily managed and reversible, and included fatigue, anemia, diarrhea, vomiting and nausea. In the 25 patients that had received the recommended Phase 2 dose, none exhibited zotatifin-related Grade 3, 4 or 5 TEAEs. In the ER+ breast cancer cohort evaluating zotatifin and fulvestrant ("ZF doublet"), we reported one out of seven partial responses and three out of seven patients with stable disease, which allowed for expansion from seven total patients to 18 patients. In the ER+/FGFR amplified breast cancer cohort evaluating zotatifin as a monotherapy, one out of seven patients had stable disease, which was not sufficient to expand the size of the cohort. In the KRAS G12C NSCLC cohort evaluating zotatifin in combination with sotorasib, one patient had been enrolled at the interim data cutoff date and reported stable disease. In the ER+ breast cancer cohort evaluating the ZFA triplet, two patients had been enrolled at the interim data cutoff date with one reported partial response.

In January 2023, we reported updated interim data for the ZF doublet and ZFA triplet cohorts. As of the December 15, 2022 cutoff date, zotatifin continued to be generally well tolerated with four Grade 3+ TEAE in the ZF doublet cohort (n=18) and four Grade 3+ TEAE in the ZFA triplet cohort (n=7). One partial response and one patient with prolonged stable disease was reported in the ZF doublet cohort and two partial responses and one patient with prolonged stable disease was reported in the ZFA triplet cohort.

In June 2023, we presented new interim data on the fully enrolled expansion cohort of patients (n=20) who received the ZFA triplet with zotatifin dosed at 0.07 mg/kg on Days 1 and 8 of 21-day cycles. Patients were heavily pre-treated, having received a median of four prior lines of therapy for metastatic disease. As of a cut-off date of May 3, 2023, five out of 19 (26%) RECIST-evaluable patients achieved a partial response (PR), including four confirmed and one unconfirmed. All five patients who achieved a PR had previously progressed on prior CDK4/6 and fulvestrant treatments, and all five had received one or more prior lines of chemotherapy. Efficacy results exceeded our expectations for fulvestrant and abemaciclib (“FA doublet”) in such heavily pre-treated patients after CDK4/6, endocrine and/or chemotherapies. The ZFA triplet was generally well tolerated, with three patients discontinuing due to adverse events (“AEs”) of any cause, and the large majority of AEs being Grade 1 or 2.

In December 2023, we announced new positive interim data from dose escalation and Phase 2 expansion cohorts of zotatifin in patients with ER metastatic breast cancer at the San Antonio Breast Cancer Symposium (See figure 20). In the ZFA triplet, patients with a median of four prior lines of therapy for metastatic disease received 0.07 mg/kg zotatifin dosed on Days 1 and 8 of 21-day cycles, combined with fulvestrant and abemaciclib. In this cohort, the median progression free survival ("mPFS") was 7.4 months (95% confidence intervals 2.8 to non-estimable) as of a cut-off date of November 17, 2023.

Figure 20: Swimmers plot showing length of time on zotatifin plus fulvestrant and abemaciclib (ZFA triplet).



In light of the favorable safety results observed in the Phase 1/2 clinical trial and target engagement data generated to date, we resumed dose escalation of zotatifin dosed every other week, initially in the ZF doublet, in patients with ER+ breast cancer to determine if a higher dose of zotatifin can be utilized in future clinical studies. Subsequently we also initiated dose escalation in the ZFA triplet. In the first quarter of 2024, dose escalation of the ZF doublet concluded with the determination of 0.2 mg/kg zotatifin Q2W as the RP2D for the doublet. We expect to report additional data from dose escalation in the first half of 2024.

If zotatifin continues to demonstrate an adequate safety profile and sufficient signals of activity, we plan to continue clinical development of zotatifin, potentially as a combination in a randomized trial against a relevant comparator control group. We are currently evaluating plans to test the ZFA triplet in a randomized trial after we finalize the dose and schedule in the first half of 2024. We anticipate interacting with FDA on development strategy utilizing the fast-track designation received in 2023.

Stanford University Investigator-Initiated Randomized Phase 2 Clinical Trial in Patients with ER+ Breast Cancer

Stanford University is sponsoring a Phase 2 clinical trial in patients with ER+ breast cancer. This trial, being led by Jennifer Caswell-Jin, M.D., Assistant Professor of Medicine at Stanford Medicine, is bringing to the clinic the science of integrative subgroups of breast cancer, building on work done by Christian Curtis, Ph.D., Professor of Medicine, Genetics, and Biomedical Data Science, and Director of Artificial Intelligence and Cancer Genomics at Stanford Medicine. Zotatifin will be tested in specific genomically-defined subgroups, including standard risk patients as well as high-risk patients carrying specific markers predictive of relapse. To identify therapies that might provide clinical benefit to these particularly high-risk patients, Dr. Caswell-Jin will direct an umbrella, randomized pre-operative trial testing integrative subtype-targeted therapeutics in ER+/HER2- breast cancer. Zotatifin will be investigated in a cohort of patients at high risk of relapse, including a group with overexpression of cyclin D1 and fibroblast growth factor 3, proteins that promote cancer growth and survival, and a separate group with

overexpression of fibroblast growth factor receptor 1, as well as in a cohort of patients at standard risk for relapse. In both cohorts, patients will be randomized to receive a single dose of zotatifin plus fulvestrant, or fulvestrant alone, 14 days before surgery. The primary objective of the study is to assess change in tumor proliferative status, as measured by Ki67 staining, from baseline to 14 days after preoperative treatment with either regimen.

eIF4E—Global Partnership with Pfizer

In December 2019, we entered into the Pfizer Agreement pursuant to which we granted Pfizer a global license to our earliest stage program, inhibitors of eIF4E. eIF4E is an oncogene and historically intractable target whose expression is increased, or upregulated, in a variety of human cancers and is linked to poor prognosis and resistance to certain therapies. eIF4E integrates signals from multiple important onco-genes and tumor suppressor proteins, including BRAF, MYC, mTOR, PI3K, AKT and PTEN, and selectively regulates the translation of a set of target mRNA largely distinct from those regulated by MNK and eIF4A. This may expand the potential patient population that may benefit from selective translation regulation therapy. In conjunction with Pfizer, we selected our lead development candidate to progress into IND-enabling studies that are ongoing. Pfizer is responsible for further development of this program, including submission of an IND and initiating a Phase 1 dose escalation clinical trial. See "—Pfizer Research Collaboration and License Agreement for Inhibitors of eIF4E" below for a description of the Pfizer Agreement.

Research conducted by Dr. Davide Ruggero and published in July 2015 in Cell, has demonstrated a small set of mRNA are sensitive to reduced levels of eIF4E. The eIF4E-sensitive mRNA encode proteins involved in oncogenic transformation, tumor growth stimulation, and inhibition of apoptotic pathways, suggesting eIF4E is an attractive target for cancer therapy. In addition, we believe tumors that overexpress eIF4E, including head and neck squamous cell carcinoma, lymphoma and breast cancer, represent significant clinical opportunities.

Because the natural ligand for eIF4E is a highly charged entity, termed the 5' cap, it has been historically difficult to identify product candidates to inhibit this protein within cells. Using our proprietary structure-based and fragment-based drug design expertise we have invented several small molecule inhibitors of eIF4E that bind to the same site as, and compete with, the 5' cap. In conjunction with Pfizer, we selected a lead product candidate which in preclinical models was shown to be a potent and selective inhibitor of eIF4E. This candidate has demonstrated activity in tumor cell assays and has demonstrated substantial in vivo anti-tumor activity.

We will continue to evaluate the development progress of the lead product candidate inhibitor of eIF4E, and consider building the sales and marketing infrastructure, as needed, to support the exercise of our option to co-promote and profit share in the United States as the data evolves.

Our Proprietary Translation Regulation Technology Platform

We discovered our product candidates using our proprietary selective translation regulation technology platform. Our platform includes our ribosomal profiling technology combined with state-of-the-art chemistry design strategies. Our ribosomal profiling technology enables comprehensive and quantitative measurement of the density of ribosomes on expressed mRNA in the cell which predicts the rate of translation and, therefore, enables identification of targets that are upregulated in tumors and whose production is sensitive to selective inhibition by our product candidates. Information as to which mRNA's translation can be inhibited by our product candidates is an important part of our process to select tumor types and patient populations for clinical studies. Ribosomes are the macromolecular machines responsible for synthesizing proteins based on instructions contained in mRNA. This profiling has allowed us to assess the efficiency of mRNA's translation in cells or in tissues, distinguishes between transcriptional and translational regulation of gene expression, and identifies therapeutic targets, biomarkers and contexts of drug sensitivity or resistance. By measuring translational efficiency in various normal and diseased states we have been able to determine which proteins are subject to translational regulation and, importantly, which proteins are upregulated in various disease states. We incorporated and enhanced the original technology licensed from UCSF and industrialized it for use in our internal drug discovery and development efforts. The application of this technology has generated a proprietary understanding of genes that are translationally dysregulated in multiple tumor types and allowed us to identify specific points of therapeutic intervention.

To develop our product candidates, we conducted a focused approach to medicinal chemistry incorporating both fragment-based and structure-based design techniques. We also applied our specialized expertise regarding atomic interactions that offer potential for potent, highly specific drug target interactions. Our approach in identifying selective and potent inhibitors of our drug targets was based, in part, on balancing physical chemical properties with high binding affinity. We combined these drug design capabilities with external synthetic chemistry efforts to enhance our ability to identify potent and selective lead product candidates in an efficient and effective manner.

Manufacturing

We do not own or operate, and currently have no plans to establish any manufacturing facilities. We currently rely, and expect to continue to rely, on third-party manufacturers to produce sufficient quantities of our product candidates and their component raw materials for use in our preclinical development and clinical trials and in relation to any future commercialization of our product candidates. Our third-party manufacturers are responsible for obtaining the raw materials necessary to manufacture our product candidates, and we believe that these raw materials are readily available from more than one source. Additional third-party manufacturers are and will be used to fill, label, package and distribute investigational drug products. This approach allows us to maintain a more efficient infrastructure while enabling us to focus our expertise on developing our products. Although we believe we have multiple potential sources for the manufacture of our product candidates and the related raw materials, we currently rely on single manufacturers, including Curia Global (formerly AMRI), Catalent, and Corden, for different aspects of tomivosertib and zotatifin.

Commercialization Plan

We currently have no sales, marketing or commercial product distribution capabilities and have no experience as a company in commercializing products. We intend to build our own commercialization organization and capabilities over time to market any approved products in North America. We believe that this commercial organization can be modest in size and targeted to a relatively small number of oncologists specializing in our target markets. Outside of North America, we may establish collaborations with pharmaceutical companies to leverage their commercialization capabilities to maximize the potential of our product candidates.

As our product candidates progress through stages of development, our commercial plans may change. Clinical data, the size of the development programs, the size of our target markets, the size of a commercial infrastructure and manufacturing needs may all influence our U.S., European and rest of the world commercialization strategies.

Our Collaboration and License Agreements

Pfizer Research Collaboration and License Agreement for Inhibitors of eIF4E

In December 2019, we entered into the Pfizer Agreement, to research and develop small molecules that target eIF4E. Pursuant to the Pfizer Agreement, we granted Pfizer a worldwide, exclusive license, with a right to sublicense, under certain of our patents, know-how, and materials to use, develop, manufacture, commercialize, and otherwise exploit compounds or products targeting eIF4E, for any and all indications. Pursuant to the Pfizer Agreement, Pfizer granted us an option to co-fund and co-promote a single such licensed product under a profit and loss share arrangement in the United States. The option can be exercised prior to a specified time before the first patient is expected to be enrolled in a clinical trial intended to support an NDA for marketing approval.

Under the Pfizer Agreement, eFFECTOR was responsible for initial research in collaboration with Pfizer, and Pfizer is responsible for all further development of this asset, including submission of an IND and conducting all clinical development and commercialization activities. Pfizer is obligated to use commercially reasonable efforts to develop and seek regulatory approval for a licensed product, and commercialize a licensed product where Pfizer has received regulatory approval, in the United States and certain other countries. In the event we exercise our co-funding and co-promotion option, a joint steering committee will oversee the development plan and budget of the co-developed product, and we will have the responsibility to conduct a portion of product marketing presentations to healthcare providers.

Pursuant to the Pfizer Agreement, we received an upfront, one-time, non-refundable, non-creditable payment of $15 million dollars from Pfizer. Pfizer was obligated to reimburse us for costs incurred for research performed, up to a specified cap in the low double-digit millions. Upon the achievement of specified early development and regulatory milestones, Pfizer will be obligated to pay us up to $80 million dollars in the aggregate. For other non-early stage development milestones Pfizer's payment obligations to us depend upon whether we have exercised our co-funding and co-promotion option: 1) if we do not exercise our option, non-early stage development payments may total up to $165 million dollars in aggregate, and 2) if we do exercise our option, non-early stage development payments may total up to $70 million dollars in aggregate. Upon the achievement of specified sales milestones, Pfizer is also obligated to make tiered milestone payments of up to $235 million dollars in aggregate. On a product-by-product basis, Pfizer will also be required to pay us high single-digit percentage royalties on annual net sales of each licensed product. If we exercise our co-promotion and co-funding option, royalty payments will exclude sales in the United States and we will share with Pfizer profits from sale of the relevant licensed product in the United States.

Unless earlier terminated, the Pfizer Agreement will continue in effect until the expiration of all Pfizer payment obligations. Except in the U.S. if we exercise our co-funding and co-promotion option, following expiration of the obligation to pay royalties for any licensed product in a given country and payment of all amounts due, Pfizer's license to such licensed product in such country will become fully paid-up, perpetual, irrevocable and royalty-free. Pfizer may terminate the Pfizer Agreement for convenience upon written notice. Either party may terminate the Pfizer Agreement if an undisputed material breach by the other party is not cured within a defined period of time, or upon notice for insolvency-related events of the other party that are not discharged within a defined time period.

Exclusive License Agreement with UCSF

In May 2013, we entered into an agreement with UCSF which provides us an exclusive license to UCSF's patent rights in certain inventions ("UCSF Translational Profiling Patent Rights") relating to translational profiling laboratory techniques initially developed at UCSF, including certain patent rights we co-own with UCSF. Under the agreement we are permitted to research, develop, make and sell products that we discover and develop utilizing the UCSF Translational Profiling Patent Rights, which we refer to as licensed products, and use certain licensed processes utilizing the UCSF Translational Profiling Patent Rights and to sublicense such licensed products and processes. Our exclusivity is subject to certain retained research rights of UCSF and is subject to the rights of the U.S. government, if any, as set forth in 35 U.S.C. §§ 200-212. Pursuant to this law, the U.S. government may have acquired a nonexclusive, nontransferable, paid-up license to practice or have practiced for or on behalf of the U.S. government the inventions described in the UCSF Translational Profiling Patent Rights throughout the world. We have the first right to pursue patent infringement claims of potential commercial significance with respect to the licensed UCSF Translational Profiling Patent Rights, subject to certain conditions.

Under the agreement, we are required to use commercially reasonable efforts to meet certain specified development, regulatory and commercial milestones related to the licensed products within specified time periods. In consideration of the rights granted to us under the agreement, we made a one-time license issue fee cash payment to UCSF of $50,000. In July 2021, we entered into an amendment to the license agreement to confirm the impact of the merger on the license agreement, pursuant to which, upon the closing of the merger, we paid UCSF a one-time cash payment of approximately $1.0 million. We are also required to make cash milestone payments to UCSF upon the completion of certain clinical and regulatory milestones for the licensed products.

To date, we have made cash milestone payments to UCSF in an aggregate amount of $40,000. The aggregate remaining potential milestone payments are approximately $375,000. Additionally, we have agreed to pay UCSF a royalty of less than one percent on net sales of each of the first two licensed products sold by us or our affiliates, subject to a minimum annual royalty payment of $15,000 (creditable against the royalty payment otherwise due for the year in which the minimum payment was made) and other adjustments in certain circumstances. Our royalty obligations continue for each licensed product or service until the expiration of the last licensed patent covering the applicable licensed product or service which will be February 2034, absent any patent term adjustment or extensions.

UCSF may terminate the agreement if we fail to perform or violate any material term of the agreement and fail to cure such nonperformance or violation within 60 days of notice from UCSF or in the event of our insolvency. We are currently in compliance with all material terms of the agreement.

We may terminate the agreement upon 60 days' written notice to UCSF and may terminate the UCSF Translational Profiling Patent Rights on a claim-by-claim, patent-by-patent and country-by-country basis by giving written notice to UCSF. Absent early termination, the agreement will continue until the expiration date of the longest-lived patent right included in the UCSF Translational Profiling Patent Rights. In May 2016, pursuant to the terms of the UCSF license agreement, we provided notice of our election to terminate our obligations to pay the patent prosecution costs with respect to patent application claiming methods of treating cancer by inhibiting PRPS-2, thereby relinquishing our rights in any future products that would infringe the relinquished claims were they ever to be issued. At the time we made this election, we were aware of no such products within eFFECTOR or UCSF.

Intellectual Property

We strive to protect and enhance the proprietary technology, inventions, and improvements that are commercially important to our business, including seeking, maintaining and defending patent rights, whether developed internally or licensed from third parties. We own the issued patents and patent applications relating to our lead product candidate tomivosertib. Our policy is to seek to protect our proprietary position by, among other methods, filing patent applications in the United States and in jurisdictions outside of the United States directed to our proprietary technology, inventions, improvements and product candidates that are important to the development and implementation of our business. We also rely on trade secrets and know-how relating to our proprietary technology and product candidates, continuing innovation, and in-licensing opportunities to develop, strengthen and maintain our proprietary position in the field of immuno-oncology and targeted therapy with eIF4A inhibitors. We also plan to rely on data exclusivity, market exclusivity, and patent term extensions when available. Our commercial success will depend in part on our ability (1) to obtain and maintain patent and other proprietary protection for our technology, inventions, and improvements; (2) to preserve the confidentiality of our trade secrets; (3) to obtain and maintain licenses to use intellectual property owned by third parties; (4) to defend and enforce our proprietary rights, including any patents that we may own in the future; and (5) to operate without infringing on the valid and enforceable patents and other proprietary rights of third parties.

As of February 1, 2024, our licensed, owned and co-owned patent portfolio is directed to MNK inhibitors (including tomivosertib), eIF4A mRNA helicase inhibitors (including zotatifin) and various applications of our proprietary selective translation regulation platform, as well as certain of our proprietary technology, inventions, improvements or other product candidates. We also possess and/or in-license substantial know-how and trade secrets relating to the development and commercialization of our product candidates, including related manufacturing processes and technology.

Specifically, our patent portfolio includes the following families:

• MNK Inhibitors—We own thirteen U.S. patents and forty-eight foreign patents (Australia (2), Belize, Brazil, Canada (2), Chile (2), China (3), Columbia, Europe (4), Hong Kong, South Korea, India (5), Israel (2), Japan (5), Malaysia (2), Mexico (2), New Zealand, Peru (2), Philippines (2), Russia (4), Singapore (2), South Africa and Taiwan (2)), as well as five pending U.S. patent applications and twenty-eight pending foreign patent applications (Australia (2), Belize, Brazil (2), Canada (3), , China (2), Europe (2), Hong Kong (2), India , Israel, Japan , South Korea (2), , Mexico, New Zealand (3), , , Russia, Singapore (2), Taiwan and South Africa), with claims directed to: composition of matter claims directed to our lead product candidate, tomivosertib, and composition of matter claims to other MNK inhibitors; methods of treating MNK-related indications; the use of MNK inhibitors in combination with other translation inhibitors; processes for making tomivosertib; the use of MNK inhibitors in immunotherapy; and the use of MNK inhibitor biomarkers for detecting MNK-related indications and for treating MNK-related indications. Any patents that issue from the pending patent applications will be expected to expire between June 2035 and June 2040, without accounting for any potentially applicable patent term adjustments or extensions. The issued U.S. and foreign patents will expire between June 2035 and May 2038, without accounting for any potentially applicable patent term adjustments or extensions.

• eIF4A Inhibitors—We own six U.S. patents and twenty-one foreign patents (Australia (2), Brazil, Chile, China (2), Columbia, Europe (2), Hong Kong, Israel, India, Japan (2), South Korea, Mexico, Malaysia, Peru, Russia, South Africa and Taiwan), as well as four pending U.S. patent applications, and seventeen pending foreign patent applications (Australia (2), Belize, Brazil , Canada (3), China , Europe (3), Hong Kong , Japan, South Korea (2), New Zealand, and Philippines) with claims directed to the composition

of matter of our lead product candidate, zotatifin, and other eIF4A inhibitors, as well as methods for treating eIF4A-related diseases, and methods for treating eIF4A dependent conditions with a combination of eIF4A inhibitors and CDK inhibitors. Any patents that issue from the pending patent applications will be expected to expire between November 2036 and March 2041, without accounting for any potentially applicable patent term adjustments or extensions. The issued U.S. and foreign patents will expire between February 2035 and May 2038, without accounting for any potentially applicable patent term adjustments or extensions.

• eIF4E Inhibitors—We own three U.S. patents, two foreign patents (Australia, Taiwan), two pending U.S. patent applications, and fourteen pending foreign patent applications (Australia, Brazil, Canada, Chile, China, Europe (2), Indonesia, Israel, India, Japan, South Korea, New Zealand and Singapore) with claims directed to eIF4E inhibitors, methods for treating eIF4E-related diseases, as well as claims directed to compositions of eIF4E covalent binding ligands. Any patents that issue from these pending patent applications will be expected to expire between June 2040 and May 2041, without accounting for any potentially applicable patent term adjustments or extensions The issued U.S. and foreign patents will expire between February 2035 and June 2040, without accounting for any potentially applicable patent term adjustments or extensions We exclusively license some of the patents and pending patent applications in this patent family to Pfizer under the Pfizer Agreement. We also co-own with Pfizer a pending US and thirteen foreign patent applications (Australia, Brazil, Canada, Chile, China, Europe, Indonesia, Israel, India, Japan, South Korea, New Zealand and Singapore) with claims directed to eIF4E polymorph compositions. Any patents that issue from these pending applications will expire December 2041, without accounting for any potentially applicable patent term adjustments or extensions. For more information regarding the Pfizer Agreement, see the section titled “Business—Our Collaboration and License Agreements.”

• UCSF Translational Profiling Patent Rights—We licensed two patents, one in Europe and one China, from UCSF, with claims directed to the use of translational profiling in methods of treatment. The last to expire patent right that has issued expires in February 2034, without accounting for any potentially applicable extensions. For more information regarding our license agreement with UCSF, see the section titled “Business—Our Collaboration and License Agreements.”

With respect to our product candidates and processes we intend to develop and commercialize in the normal course of business, we intend to pursue patent protection covering, when possible, compositions, methods of use, dosing and formulations. We may also pursue patent protection with respect to manufacturing and drug development processes and technologies.

Issued patents can provide protection for varying periods of time, depending upon the date of filing of the patent application, the date of patent issuance, and the legal term of patents in the countries in which they are obtained. In general, patents issued for applications filed in the United States can provide exclusionary rights for 20 years from the earliest effective filing date. In addition, in certain instances, the term of an issued U.S. patent that covers or claims an FDA approved product can be extended to recapture a portion of the term effectively lost as a result of the FDA regulatory review period, which is called patent term extension. The restoration period cannot be longer than five years and the total patent term, including the restoration period, must not exceed 14 years following FDA approval. The term of patents outside of the United States varies in accordance with the laws of the foreign jurisdiction, but typically is also 20 years from the earliest effective filing date. However, the actual protection afforded by a patent varies on a product-by-product basis, from country-to-country, and depends upon many factors, including the type of patent, the scope of its coverage, the availability of regulatory-related extensions, the availability of legal remedies in a particular country, and the validity and enforceability of the patent.

The patent positions of companies like ours are generally uncertain and involve complex legal and factual questions. No consistent policy regarding the scope of claims allowable in patents in the field of immuno-oncology has emerged in the United States. The relevant patent laws and their interpretation outside of the United States is also uncertain. Changes in either the patent laws or their interpretation in the United States and other countries may diminish our ability to protect our technology or product candidates and enforce the patent rights that we license and could affect the value of such intellectual property. In particular, our ability to stop third parties from making, using, selling, offering to sell, or importing products that infringe our intellectual property will depend in part on our success in obtaining and enforcing patent claims that cover our technology, inventions, and improvements. With respect to both licensed and company-owned intellectual property, we cannot guarantee that patents will be granted with respect to any of our pending patent applications or with respect to any patent applications we may file in the future, nor can we be sure that any patents that may be granted to us in the future will be commercially useful in protecting our products, the methods of use or manufacture of those products.

Moreover, even the issued patents that we license do not guarantee us the right to practice our technology in relation to the commercialization of our products. Patent and other intellectual property rights in the pharmaceutical and biotechnology space are evolving and involve many risks and uncertainties. For example, third parties may have blocking patents that could be used to prevent us from commercializing our product candidates and practicing our proprietary technology. The issued patents that we in-license and those that may issue in the future may be challenged, invalidated, or circumvented, which could limit our ability to stop competitors from marketing related products or could limit the term of patent protection that otherwise may exist for our product candidates. In addition, the scope of the rights granted under any issued patents may not provide us with protection or competitive advantages against competitors with similar technology. Furthermore, our competitors may independently develop similar technologies that are outside the scope of the rights granted under any issued patents that we own or exclusively in-license. For these reasons, we may face competition with respect to our product candidates. Moreover, because of the extensive time required for development, testing and regulatory review of a potential product, it is possible that, before any particular product candidate can be commercialized, any patent protection for such product may expire or remain in force for only a short period following commercialization, thereby reducing the commercial advantage the patent provides.

Competition

The biotechnology and pharmaceutical industries are characterized by rapidly advancing technologies, intense competition and a strong emphasis on proprietary products. While we believe that our technology, knowledge, experience and scientific resources provide us with competitive advantages, we face potential competition from many different sources, including major pharmaceutical, specialty pharmaceutical and biotechnology companies, academic institutions and governmental agencies and public and private research institutions. Any product candidates that we successfully develop and commercialize will compete with existing therapies and new therapies that may become available in the future. Many of our competitors, either alone or with their collaborators have significantly greater financial, technical, manufacturing, marketing, sales and supply resources or experience than we do. Accordingly, our competitors may be more successful than us in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining approval for treatments and achieving widespread market acceptance, rendering our treatments obsolete or non-competitive. Merger and acquisition activity in the biotechnology and biopharmaceutical industries may result in even more resources being concentrated among a smaller number of our competitors. These companies also compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and patient registration for clinical trials and acquiring technologies complementary to, or necessary for, our programs. We also face competition from such companies in seeking any future potential collaborations to partner our product candidates. Our commercial opportunity could be substantially limited if our competitors develop and commercialize products that are more effective, safer, less toxic, more convenient or less expensive than our comparable products. 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 and other competition and the availability of reimbursement from government and other third-party payors.

If any of our product candidates are approved in oncology indications such as NSCLC or breast cancer, they will compete with small molecule therapies, biologics, cell-based therapies and traditional chemotherapy, or a combination of any such methods. With respect to tomivosertib, we are aware of AUM Biosciences which is developing a MNK inhibitor, AUM001 in solid tumors. In addition, several novel combinations with FDA-approved PD-1 or PD-L1 inhibitors are being developed in NSCLC. These include, among others, anti-TIGIT and anti-LAG3 therapies from Bristol-Myers Squibb Co., Gilead Sciences, GSK plc, Merck & Co, Novartis AG and Roche. With respect to zotatifin, we are aware of PIC Therapeutics which is developing pre-clinical small molecules targeting the eukaryotic translation initiation factors (eIFs). Moreover, there are currently several marketed drugs and product candidates in development for the treatment of ER+ breast cancer that may compete with zotatifin, including fulvestrant marketed by AstraZeneca plc, elacestrant marketed by Menarini, capivasertib, an AKT inhibitor being marketed by AstraZeneca plc, oral SERDS being developed by Arvinas, Inc., AstraZeneca plc, Eli Lilly and Co, Eisai Co., Ltd, Roche and Zentalis Pharmaceuticals, Inc., among others.

Government Regulation

Government authorities in the United States, at the federal, state and local level, and other countries extensively regulate, among other things, the research, development, testing, manufacture, quality control, approval, labeling, packaging, storage, record-keeping, promotion, advertising, distribution, marketing and export and import of drug products. Generally, before a new drug can be marketed, considerable data demonstrating its quality, safety and efficacy must be obtained, organized into a format specific for each regulatory authority, submitted for review and approved by the regulatory authority. A new drug must be approved by the FDA through the NDA process before it may be legally marketed in the United States. We, along with any third-party contractors, will be required to navigate the various preclinical, clinical and commercial approval requirements of the governing regulatory agencies of the countries in which we wish to conduct studies or seek approval of our products and product candidates. The process of obtaining regulatory approvals and the subsequent compliance with applicable federal, state, local and foreign statutes and regulations require the expenditure of substantial time and financial resources.

U.S. Drug Development Process

In the United States, the FDA regulates drugs under the federal Food, Drug, and Cosmetic Act (“FDCA”) and its implementing regulations. The process of obtaining regulatory approvals and the subsequent compliance with appropriate federal, state, local and foreign statutes and regulations require the expenditure of substantial time and financial resources. The process required by the FDA before a drug may be marketed in the United States generally involves the following:

- completion of preclinical laboratory tests, animal studies and formulation studies, certain of which must be in accordance with FDA’s Good Laboratory Practice requirements and other applicable regulations;
- submission to the FDA of an IND, which must become effective before human clinical trials may begin;
- approval by an independent Institutional Review Board (“IRB”) or ethics committee at each clinical site before each trial may be initiated;
- performance of adequate and well-controlled human clinical trials in accordance with Good Clinical Practices ("GCPs") to establish the safety and efficacy of the proposed drug for its intended use;
- preparation of and submission to the FDA of an NDA after completion of all pivotal trials;
- a determination by the FDA within 60 days of its receipt of an NDA to file the application for review
- satisfactory completion of an FDA advisory committee review, if applicable;
- satisfactory completion of an FDA inspection of the manufacturing facility or facilities at which the drug is produced to assess compliance with current Good Manufacturing Practice (“cGMP”) requirements to assure that the facilities, methods and controls are adequate to preserve the drug’s identity, strength, quality and purity, and potential inspection of selected clinical investigation sites to assess compliance with GCPs; and
- FDA review and approval of the NDA to permit commercial marketing of the product for particular indications for use in the United States.

The preclinical developmental stage generally involves laboratory evaluations of drug chemistry, formulation and stability, as well as studies to evaluate the molecule’s toxicity in animals, which support subsequent clinical testing. The conduct of preclinical studies is subject to federal regulations and requirements, including GLP regulations for certain toxicology studies. The sponsor must submit the results of the preclinical studies, together with manufacturing information, analytical data, any available clinical data or literature and a proposed clinical protocol, to the FDA as part of the IND. An IND is a request for allowance from the FDA to administer an investigational drug product to humans. 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. Some long-term preclinical testing, such as animal tests of effects on reproduction and

carcinogenicity, may continue after the IND is submitted. An IND must become effective before human clinical trials may begin. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA, within the 30-day time period, raises safety concerns or questions about the proposed clinical trial. In such a case, the IND may be placed on clinical hold and the IND sponsor and the FDA must resolve any outstanding concerns or questions before the clinical trial can begin. Clinical holds also may be imposed by the FDA at any time before or during studies due to safety concerns or non-compliance. Submission of an IND therefore may or may not result in FDA allowance to begin a clinical trial.

Clinical trials involve the administration of the investigational product to human subjects under the supervision of qualified investigators, generally physicians not employed by or under the trial sponsor's control, in accordance with GCPs, which include, among other things, the requirement that all research subjects provide their informed consent for their participation in any clinical study. Clinical trials are conducted under protocols detailing, among other things, the objectives of the study, dosing procedures, subject selection and exclusion criteria, the parameters to be used in monitoring subject safety and the effectiveness criteria to be evaluated. A separate submission to the existing IND must be made for each successive clinical trial conducted during product development and for any subsequent protocol amendments. While the IND is active, progress reports summarizing the results of the clinical trials and nonclinical studies performed since the last progress report, among other information, must be submitted at least annually to the FDA, and written IND safety reports must be submitted to the FDA and investigators for serious and unexpected suspected adverse events, findings from other studies suggesting a significant risk to humans exposed to the same or similar drugs, findings from animal or in vitro testing suggesting a significant risk to humans, and any clinically important increased incidence of a serious suspected adverse reaction compared to that listed in the protocol or investigator brochure.

Furthermore, an independent IRB for each site proposing to conduct the clinical trial must review and approve the plan for any clinical trial and its informed consent form before the clinical trial begins at that site and must monitor the study until completed. 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. Depending on its charter, this group may determine whether a trial may move forward at designated check points based on access to certain data from the trial. The FDA or the sponsor may suspend a clinical trial at any time on various grounds, including a finding that the research subjects or patients are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution if the clinical trial is not being conducted in accordance with the IRB's requirements or if the drug has been associated with unexpected serious harm to patients. There are also requirements governing the reporting of ongoing clinical studies and clinical study results to public registries.

Human clinical trials are typically conducted in three sequential phases that may overlap or be combined:

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

- Phase 2: The product candidate is administered to a limited patient population with a specified disease or condition to evaluate the preliminary efficacy, optimal dosages and dosing schedule and to identify possible adverse side effects and safety risks. Multiple Phase 2 clinical trials may be conducted to obtain information prior to beginning larger and more expensive Phase 3 clinical trials.

- Phase 3: The product candidate is administered to an expanded patient population to further evaluate dosage, to provide statistically significant evidence of the product's effectiveness for its intended use(s) 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.

In some cases, the FDA may require, or sponsors may voluntarily pursue, additional clinical trials after a product is approved to gain more information about the product within the approved indication. These so-called Phase 4 studies, may be conducted after initial marketing approval, and may be used to gain additional experience from the treatment of patients in the intended therapeutic indication. In certain instances, the FDA may mandate the performance of Phase 4 clinical trials as a condition of approval of an NDA.

In addition, during the development of a new drug, sponsors are given opportunities to meet with the FDA at certain points. These points may be prior to submission of an IND, at the end of Phase 2, and before an NDA is submitted. Meetings at other times may be requested. These meetings can provide an opportunity for the sponsor to share information about the data gathered to date, for the FDA to provide advice, and for the sponsor and the FDA to reach agreement on the next phase of development.

Concurrent with clinical trials, companies usually complete additional animal studies and must also develop additional information about the chemistry and physical characteristics of the drug and finalize a process for manufacturing the product in commercial quantities in accordance with cGMP requirements. The manufacturing process must be capable of consistently producing quality batches of the product candidate and, among other things, the manufacturer must develop methods for testing the identity, strength, quality and purity of the final drug. In addition, 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.

U.S. Review and Approval Process

Assuming successful completion of all required testing in accordance with all applicable regulatory requirements, the results of product development, including results from preclinical and other non-clinical studies and clinical trials, along with descriptions of the manufacturing process, analytical tests conducted on the chemistry of the drug, proposed labeling and other relevant information are submitted to the FDA as part of an NDA requesting approval to market the product. Data can come from company-sponsored clinical studies intended to test the safety and effectiveness of a use of the product, or from a number of alternative sources, including studies initiated by independent investigators. The submission of an NDA is subject to the payment of substantial user fees; a waiver of such fees may be obtained under certain limited circumstances. Additionally, no user fees are assessed on NDAs for products designated as orphan drugs, unless the application also requests a non-orphan indication.

In addition, the Pediatric Research Equity Act (PREA), requires a sponsor to conduct pediatric clinical trials for most drugs, for a new active ingredient, new indication, new dosage form, new dosing regimen or new route of administration. Under PREA, original NDAs and certain supplements must contain a pediatric assessment unless the sponsor has received a deferral or waiver. The required assessment must evaluate the safety and effectiveness of the product for the claimed indications in all relevant pediatric subpopulations and support dosing and administration for each pediatric subpopulation for which the product is deemed safe and effective. The sponsor or FDA may request a deferral of pediatric clinical trials for some or all of the pediatric subpopulations. A deferral may be granted for several reasons, including a finding that the drug is ready for approval for use in adults before pediatric clinical trials are complete or that additional safety or effectiveness data needs to be collected before the pediatric clinical trials begin. The FDA must send a non-compliance letter to any sponsor that fails to submit the required assessment, keep a deferral current or fails to submit a request for approval of a pediatric formulation.

The FDA conducts a preliminary review of all NDAs within the first 60 days after submission, before accepting them for filing, to determine whether they are sufficiently complete to permit substantive review The FDA may request additional information rather than accept an NDA for filing. In this event, the NDA must be resubmitted with the additional information. The resubmitted application also is subject to review before the FDA accepts it for filing. Once filed, the FDA reviews an NDA to determine, among other things, whether a product is safe and effective for its intended use and whether its manufacturing is cGMP-compliant to assure and preserve the product's identity, strength, quality and purity. Under the Prescription Drug User Fee Act guidelines that are currently in effect, the FDA has a goal of ten months from the filing date to complete a standard review of an NDA for a drug that is a new molecular entity. This review typically takes twelve months from the date the NDA is submitted to FDA because the FDA has approximately two months to make a "filing" decision after it the application is submitted.

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

Before approving an NDA, the FDA will typically inspect the facility or facilities where the product is manufactured. The FDA will not approve an application unless it determines that the manufacturing processes and facilities are in compliance with cGMP and adequate to assure consistent production of the product within required specifications. Additionally, before approving a NDA, the FDA may inspect one or more clinical sites to assure compliance with GCPs.

After the FDA evaluates an NDA and conducts inspections of manufacturing facilities where the investigational product and/or its drug substance will be produced, the FDA may issue an approval letter or a Complete Response Letter ("CRL"). An approval letter authorizes commercial marketing of the product with specific prescribing information for specific indications. A CRL usually describes the specific deficiencies in the NDA identified by the FDA and may require additional clinical data, including additional clinical trials, or other significant and time-consuming requirements related to clinical trials, nonclinical studies or manufacturing. If a CRL is issued, the sponsor must resubmit the NDA, addressing all of the deficiencies identified in the letter, or withdraw the application. Even if such data and information are submitted, the FDA may decide that the NDA does not satisfy the criteria for approval.

If regulatory approval of a product is granted, such approval will be granted for particular indications and may entail limitations on the indicated uses for which such product may be marketed. For example, the FDA may approve the NDA with a Risk Evaluation and Mitigation Strategy ("REMS") to ensure the benefits of the product outweigh its risks. A REMS is a safety strategy to manage a known or potential serious risk associated with a medicine and to enable patients to have continued access to such medicines by managing their safe use, and could include medication guides, physician communication plans, or elements to assure safe use, such as restricted distribution methods, patient registries, and other risk minimization tools. The FDA also may condition approval on, among other things, changes to proposed labeling or the development of adequate controls and specifications. The FDA may also require one or more Phase 4 post-market studies and surveillance to further assess and monitor the product's safety and effectiveness after commercialization, and may limit further marketing of the product based on the results of these post-marketing studies.

Expedited Development and Review Programs

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

A product candidate intended to treat a serious or life-threatening disease or condition may also be eligible for Breakthrough Therapy designation to expedite its development and review. A product candidate can receive Breakthrough Therapy designation if preliminary clinical evidence indicates that the product candidate, alone or in combination with one 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. The designation includes all of the Fast Track program features, as well as more intensive FDA interaction and guidance beginning as early as Phase 1 and an organizational commitment to expedite the development and review of the product candidate, including involvement of senior managers.

Any marketing application for a drug submitted to the FDA for approval, including a product candidate with a Fast Track designation and/or Breakthrough Therapy designation, may be eligible for other types of FDA programs intended to expedite the FDA review and approval process, such as priority review. An NDA is eligible for priority review if the product candidate is designed to treat a serious or life-threatening disease or condition, and if approved, would provide a significant improvement in safety or effectiveness compared to available alternatives for such disease or condition. For new-molecular-entity NDAs, 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.

Additionally, depending on the design of the applicable clinical studies, product candidates studied for their safety and effectiveness in treating serious or life-threatening diseases or conditions may receive accelerated approval upon a determination that the product has an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit, or on an intermediate clinical endpoint that can be measured earlier than irreversible morbidity or mortality, that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments. As a condition of accelerated approval, the FDA will generally require the sponsor to perform adequate and well-controlled confirmatory clinical studies to verify and describe the anticipated effect on irreversible morbidity or mortality or other clinical benefit, and may require that such confirmatory trials be underway prior to granting accelerated approval. Products receiving accelerated approval may be subject to expedited withdrawal procedures if, among other things, the sponsor fails to conduct the required confirmatory studies in a timely manner or if such studies fail to verify the predicted clinical benefit. In addition, the FDA currently requires as a condition for accelerated approval pre-approval of promotional materials, which could adversely impact the timing of the commercial launch of the product.

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. Even if a product candidate qualifies for one or more of these programs, the FDA may later decide that the product no longer meets the conditions for qualification or decide that the time period for FDA review or approval will not be shortened.

Orphan drug designation and exclusivity

Under the Orphan Drug Act, the FDA may grant orphan designation to a drug intended to treat a rare disease or condition, which is generally defined as a disease or condition with either (i) a patient population of fewer than 200,000 individuals in the United States, or (ii) a patient population greater than 200,000 individuals in the United States and when there is no reasonable expectation that the cost of developing and making available the drug in the United States will be recovered from sales in the United States for that drug. Orphan drug designation must be requested before submitting an NDA. After the FDA grants orphan drug designation, the generic identity of the therapeutic agent and its potential orphan use are disclosed publicly by the FDA.

If a product that has orphan drug designation subsequently receives the first FDA approval for a particular active ingredient for the disease or condition 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, to market the same drug for the same disease or condition for seven years from the date of such approval, 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 for the same disease or condition, or the same drug for a different disease or condition. Among the other benefits of orphan drug designation are tax credits for certain research and a waiver of the NDA 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 disease or condition for which it received orphan designation. In addition, orphan drug exclusive marketing rights in the United States may be lost if the FDA later determines that the request for designation was materially defective or, as noted above, if a second applicant demonstrates that its product is clinically superior to the approved product with orphan exclusivity or the manufacturer of the approved product is unable to assure sufficient quantities of the product to meet the needs of patients with the rare disease or condition.

Post-approval Requirements

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

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

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

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

In addition, the distribution of prescription pharmaceutical products is subject to the Prescription Drug Marketing Act (“PDMA”) which regulates the distribution of drugs and drug samples at the federal level and sets minimum standards for the registration and regulation of drug distributors by the states. Both the PDMA and state laws limit the distribution of prescription pharmaceutical product samples and impose requirements to ensure accountability in distribution.

Marketing Exclusivity

Market exclusivity provisions authorized under the FDCA can delay the submission or the approval of certain marketing applications. The FDCA provides a five-year period of non-patent data exclusivity within the United States to the first applicant to obtain approval of an NDA for a new chemical entity. A drug is a new chemical entity if the FDA has not previously approved any other new drug containing the same active moiety, which is the molecule or ion responsible for the action of the drug substance. During the exclusivity period, the FDA may not approve or even accept for review an abbreviated new drug application (“ANDA”) or an NDA submitted under Section 505(b)(2),("505(b)(2) NDA"), submitted by another company for another drug based on the same active moiety, regardless of whether the drug is intended for the same indication as the original innovative drug or for another indication, 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 to one of the patents listed with the FDA by the innovator NDA holder.

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

Pediatric exclusivity is another type of marketing exclusivity available in the United States. Pediatric exclusivity provides for an additional six months of exclusivity attached to another existing period of regulatory exclusivity or patent term if a sponsor conducts clinical trials in children in response to a written request from the FDA. The issuance of a written request does not require the sponsor to undertake the described clinical trials. In addition, orphan drug exclusivity, as described above, may offer a seven-year period of marketing exclusivity, except in certain circumstances.

Other Healthcare Laws and Regulations

Pharmaceutical companies like us are subject to additional healthcare regulation and enforcement by the federal government and by authorities in the states and foreign jurisdictions in which they conduct their business. Such regulation may constrain the financial arrangements and relationships through which we research, develop, and ultimately, sell, market and distribute any products for which we obtain marketing approval. Such laws include, without limitation, federal and state anti-kickback, fraud and abuse, and false claims laws, such as the federal Anti-Kickback Statute and the federal Civil False Claims Act, and transparency laws and regulations addressing drug pricing and payments and other transfers of value made by pharmaceutical manufacturers to physicians and other healthcare providers, such as the federal Physician Payment Sunshine Act. Violations of any of such laws or any other governmental regulations that apply may result in significant penalties, including, without limitation, administrative, civil and criminal penalties, damages, fines, disgorgement, the curtailment or restructuring of operations, integrity oversight and reporting obligations to resolve allegations of noncompliance, exclusion from participation in federal and state healthcare programs, such as Medicare and Medicaid, and imprisonment.

Coverage, Pricing and Reimbursement

Sales of any approved pharmaceutical product depend, in part, on the extent to which such product will be covered by third-party payors, such as federal, state, and foreign government healthcare programs, commercial insurance and managed healthcare organizations, as well as the level of reimbursement for such product by third-party payors. Decisions regarding the extent of coverage and amount of reimbursement to be provided are made on a plan-by-plan basis. Third-party payors are increasingly reducing coverage and reimbursement for medical products, drugs and related pharmaceutical company services. In addition, the U.S. government, state legislatures and foreign governments have continued implementing cost-containment programs, including price controls, restrictions on coverage and reimbursement and requirements for substitution of generic products. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit sales of any product for which we may receive marketing approval in one or more jurisdictions. Decreases in third-party reimbursement for any product or a decision by a third-party payor not to cover a product could reduce physician usage and patient demand for the product and also have a material adverse effect on sales.

Moreover, as a condition of participating in, and having products covered under, certain U.S. federal healthcare programs, such as Medicare and Medicaid, we may become subject to federal laws and regulations that require pharmaceutical manufacturers to calculate and report certain price reporting metrics to the government, such as Medicaid Average Manufacturer Price ("AMP") and Best Price, Medicare Average Sales Price, the 340B Ceiling Price, and Non-Federal AMP reported to the Department of Veteran Affairs, and with respect to Medicaid, pay statutory rebates on utilization of manufacturers' products by Medicaid beneficiaries.

Compliance with such laws and regulations will require significant resources and may have a material adverse effect on our revenues.

Healthcare Reform

In addition, as previously mentioned, the primary trend in the U.S. healthcare industry and elsewhere is cost containment. Government authorities and other third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medical products and services, implementing reductions in Medicare and other health care funding and applying new payment methodologies. For example, in the United States, in March 2010, the ACA was enacted, which substantially changed the way healthcare is financed by both governmental and private insurers, and significantly affected the pharmaceutical industry. The ACA contained a number of provisions, including those governing enrollment in federal healthcare programs, reimbursement adjustments and changes to fraud and abuse laws. As another example, the 2021 Consolidated Appropriations Act signed into law on December 27, 2020 incorporated extensive health care provisions and amendments to existing laws, including a requirement that all manufacturers of drugs products covered under Medicare Part B report the product's average sales price to the federal government beginning on January 1, 2022, subject to enforcement via civil money penalties. Since its enactment, there have been executive, judicial and Congressional challenges to certain aspects of the ACA. On June 17, 2021, the U.S. Supreme Court dismissed the most recent judicial challenge to the ACA brought by several states without specifically ruling on the constitutionality of the ACA.

Other legislative changes have been proposed and adopted since the ACA was enacted, including the American Rescue Plan Act of 2021, effective January 1, 2024, which eliminated the statutory cap on rebate amounts owed by drug manufacturers under the Medicaid Drug Rebate Program ("MDRP"). The rebate was previously capped at 100% of the AMP for a covered outpatient drug.

Moreover, there has been heightened governmental scrutiny over the manner in which manufacturers set prices for their marketed products, which has resulted in several Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for pharmaceutical products. Most recently, on August 16, 2022, the Inflation Reduction Act of 2022, or IRA, was signed into law. Among other things, the IRA requires manufacturers of certain drugs to engage in price negotiations with Medicare (beginning in 2026), with prices that can be negotiated subject to a cap; imposes rebates under Medicare Part B and Medicare Part D to penalize price increases that outpace inflation (first due in 2023); and replaces the Part D coverage gap discount program with a new discounting program (beginning in 2025).

The IRA permits the Secretary of the Department of Health and Human Services (HHS) to implement many of these provisions through guidance, as opposed to regulation, for the initial years. HHS has and will continue to issue and update guidance as these programs are implemented. On August 29, 2023, HHS announced the list of the first ten drugs that will be subject to price negotiations, although the Medicare drug price negotiation program is currently subject to legal challenges. For that and other reasons, it is currently unclear how the IRA will be effectuated.

At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. In December 2020, the U.S. Supreme Court held unanimously that federal law does not preempt the states' ability to regulate pharmaceutical benefit managers ("PBMs") and other members of the health care and pharmaceutical supply chain, an important decision that is expected to lead to further and more aggressive efforts by states in this area.

It also possible that governmental action will be taken in response to the COVID-19 pandemic. We expect that additional state and federal healthcare reform measures will be adopted in the future, any of which could impact the amounts that federal and state governments and other third-party payors will pay for healthcare products and services.

Data Privacy & Security

Numerous state, federal and foreign laws govern the collection, use, disclosure and protection of personal information. In the United States, numerous federal and state laws and regulations, including data breach notification laws, health information privacy and security laws and consumer protection laws and regulations govern the collection, use, disclosure, and protection of health-related and other personal information. In addition, certain foreign laws govern the privacy and security of personal data, including health-related data. Privacy and security laws, regulations, and other obligations are constantly evolving, may conflict with each other to complicate compliance efforts, and can result in investigations, proceedings, or actions that lead to significant civil and/or criminal penalties and restrictions on data processing.

Human Capital

As of February 29, 2024, we had 14 full-time employees and no part-time employees. Of these employees, 4 hold Ph.D. or M.D. degrees and 8 are engaged in research and development. Our employees are not represented by labor unions or covered by collective bargaining agreements. We consider our relationship with our employees to be good.

Our human capital resources objectives include, as applicable, identifying, recruiting, retaining, and incentivizing our management team and our clinical, scientific and other employees and consultants. The principal purposes of our equity and cash incentive plans are to attract, retain and motivate personnel through the granting of stock-based and cash-based compensation awards, in order to align our interests and the interests of our stockholders with those of our employees and consultants.

Corporate Information

We were incorporated under the laws of the state of Delaware on October 2, 2020 under the name Locust Walk Acquisition Corp ("LWAC"). eFFECTOR Therapeutics, Inc. was incorporated under the laws of the state of Delaware on May 1, 2012. On August 25, 2021, we consummated a merger pursuant to which a wholly-owned subsidiary of Locust Walk Acquisition Corp. merged with and into eFFECTOR Therapeutics Operations, Inc. (formerly known as eFFECTOR Therapeutics, Inc.) ("Old eFFECTOR"), with eFFECTOR Therapeutics Operations, Inc. becoming our wholly-owned subsidiary (the "Business Combination"). Upon the closing of the merger, we changed our name to eFFECTOR Therapeutics, Inc. Our corporate headquarters are currently located at 142 North Cedros, Suite B, Solana Beach, California 92075, and our telephone number is (858) 925-8215.

Unless the context otherwise requires, all references in this section to "we," "our," "us" or "eFFECTOR" refer to the business of eFFECTOR Therapeutics, Inc. prior to the consummation of the Business Combination, which is our business following the consummation of the Business Combination.

Available Information

Our internet address is www.effector.com. Our investor relations website is located at https://investors.effector.com/. We make available free of charge on our investor relations website under “SEC Filings” our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, our directors’ and officers’ Section 16 reports and any amendments to those reports as soon as reasonably practicable after filing or furnishing such materials to the U.S. Securities and Exchange Commission (“SEC”). They are also available for free on the SEC’s website at www.sec.gov.

We use our investor relations website as a means of disclosing material non-public information and for complying with our disclosure obligations under Regulation FD. Investors should monitor such website, in addition to following our press releases, SEC filings and public conference calls and webcasts. Information relating to our corporate governance is also included on our investor relations website. The information in or accessible through the SEC and our website are not incorporated into, and are not considered part of, this filing.

Item 1A. Risk Factors.

You should carefully consider the following risk factors, together with the other information contained in this Annual Report, including our financial statements and the related notes and “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” before making an investment regarding our common stock or warrants. We cannot assure you that any of the events discussed in the risk factors below will not occur. These risks could have a material and adverse impact on our business, results of operations, financial condition and growth prospects. If that were to happen, the trading price of our common stock or warrants could decline. Additional risks and uncertainties not presently known to us or that we currently deem immaterial also may impair our business operations or financial condition. In this section, we first provide a summary of the principal risks and uncertainties we face and then provide a full set of risk factors and discuss them in greater detail.

Summary of Risk Factors

- We have a limited operating history, have incurred significant operating losses since our inception and expects to incur significant losses for the foreseeable future. We may never generate any revenue from product sales or become profitable or, if we achieve profitability, we may not be able to sustain such profitability.
- We will require substantial additional capital to finance our operations, and a failure to obtain this necessary capital when needed on acceptable terms, or at all, could force us to delay, limit, reduce or terminate our product development, commercialization efforts or other operations.
- We depend heavily on the success of our product candidates tomivosertib and zotatifin, which are in Phase 2 clinical development. If we or our collaborators are unable to successfully develop, obtain regulatory approval for and commercialize our product candidates or experience significant delays in doing so, our business will be materially harmed.
- Clinical and preclinical development involves a lengthy and expensive process with an uncertain outcome, and the results of preclinical studies and early clinical trials are not necessarily predictive of future results. Any of our product candidates may not have favorable results in later clinical trials, if any, or receive regulatory approval on a timely basis, if at all.
- Any difficulties or delays in the commencement or completion, or termination or suspension, of our current or planned clinical trials could result in increased costs to us, delay or limit our ability to generate revenue and adversely affect our commercial prospects.
- We may find it difficult to enroll patients in our clinical trials. If we encounter difficulties enrolling subjects in our clinical trials, our clinical development activities could be delayed or otherwise adversely affected.
- We rely on third parties to conduct our clinical trials and preclinical studies. If these third parties do not successfully carry out their contractual duties, comply with applicable regulatory requirements or meet expected deadlines, our development programs and our ability to seek or obtain regulatory approval for our product candidates or commercialize our products may be delayed.

- We face significant competition from entities that have developed or may develop product candidates for cancer, including companies developing novel treatments and technology platforms. If our competitors develop technologies or product candidates more rapidly than we do or their technologies are more effective, our business and ability to develop and successfully commercialize products may be adversely affected;
- Our success depends on our ability to protect our intellectual property and proprietary technologies.
- The market price of our common stock and warrants is likely to be highly volatile, and you may lose some or all of your investment.
- If we fail to meet the continued listing requirements of the Nasdaq Capital Market, our common stock and warrants could be delisted.

Risks Related to Our Limited Operating History, Financial Position and Capital Requirements

We have a limited operating history, have incurred significant operating losses since our inception and expect to incur significant losses for the foreseeable future. We may never generate any revenue from product sales or become profitable, or, if we achieve profitability, we may not be able to sustain it.

We are a clinical-stage biopharmaceutical company with a limited operating history upon which you can evaluate our business and prospects. We commenced operations in 2012. To date, we have focused primarily on raising capital, identifying potential product candidates, establishing our intellectual property portfolio, conducting preclinical studies and clinical trials, establishing arrangements with third parties for the manufacture of our product candidates and related raw materials, and providing general and administrative support for these operations. Our approach to the discovery and development of product candidates based on our technology platform is unproven, and we do not know whether we will be able to develop or obtain regulatory approval for any products of commercial value. In addition, we only have two product candidates, tomivosertib and zotatifin, in clinical development. We have not yet demonstrated an ability to successfully complete pivotal clinical trials, obtain regulatory approvals, manufacture a commercial scale product, or arrange for a third party to do so on our behalf, or conduct sales and marketing activities necessary for successful product commercialization. Consequently, any predictions made about our future success or viability may not be as accurate as they could be if we had a history of successfully developing and commercializing pharmaceutical products.

Other than revenue generated under our Research Collaboration and License Agreement with Pfizer, Inc. (the “Pfizer Agreement”), we have incurred significant operating losses since our inception and expect to incur significant losses for the foreseeable future. We do not have any products approved for sale and have not generated any product revenue since inception. If we are unable to successfully develop and obtain requisite approval for our product candidates, we may never generate any revenue from product sales. Our net loss was $22.7 million for the year ended December 31, 2022, and our net loss was $35.8 million for the year ended December 31, 2023. As of December 31, 2023, we had an accumulated deficit of $179.4 million. Substantially all of our operating losses resulted from expenses incurred in connection with the research and development of our product candidates and development programs, and general and administrative costs associated with our operations. All of our product candidates will require substantial additional development time and resources before we would be able to apply for or receive regulatory approvals and begin generating revenue from product sales. We expect to incur losses for the foreseeable future, and we anticipate these losses will increase substantially as we continue our development of, seek regulatory approval for and potentially commercialize any approved product candidates.

To become and remain profitable, we must succeed in developing and eventually commercializing products that generate significant revenue. This will require us to be successful in a range of challenging activities, including completing clinical trials and preclinical studies of our product candidates, obtaining regulatory approval for these product candidates, and manufacturing, marketing, and selling any products for which we may obtain regulatory approval. We are only in the preliminary stages of most of these activities. We may never succeed in these activities and, even if we do, may never generate revenue that is significant enough to achieve profitability. In addition, we have not yet demonstrated an ability to successfully overcome many of the risks and uncertainties frequently encountered by companies in new and rapidly evolving fields, particularly in the biopharmaceutical industry. Because of the numerous risks and uncertainties associated with pharmaceutical product development, we are unable to accurately predict the timing or amount of increased expenses or if we will be able to achieve profitability. Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis.

Our failure to become and remain profitable may have an adverse effect on the value of our company and could impair our ability to raise capital, expand our business, maintain our research and development efforts, diversify our product candidates or even continue our operations. A decline in the value of our company could also cause you to lose all or part of your investment.

We will require substantial additional capital to finance our operations, and a failure to obtain this necessary capital when needed on acceptable terms, or at all, could force us to delay, limit, reduce or terminate our development programs, commercialization efforts or other operations.

The development of pharmaceutical product candidates is capital-intensive. Our operations have consumed substantial amounts of cash since inception. We expect our expenses to increase in connection with our ongoing activities, particularly as we conduct our ongoing and planned clinical trials of, and seek regulatory approval for, tomivosertib and zotatifin. Additionally, although Pfizer is currently responsible for the development of our eIF4E program, if we exercise our option to co-fund and co-promote this program pursuant to the terms of the Pfizer Agreement, we will incur additional expenses. Furthermore, if we obtain regulatory approval for any of our product candidates, we expect to incur significant commercialization expenses related to product manufacturing, marketing, sales and distribution. Because the outcome of any clinical trial or preclinical study is highly uncertain, we cannot reasonably estimate the actual amounts necessary to successfully complete the development and commercialization of our product candidates. Furthermore, we expect to incur additional costs associated with operating as a public company. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. If we are unable to raise capital when needed or on attractive terms, we could be forced to delay, reduce or eliminate our research and development programs or any future commercialization efforts.

Based upon our current operating plans, we believe that our existing cash, cash equivalents and short-term investments will enable us to fund our operations into the first quarter of 2025. We have based this estimate on assumptions that may prove to be wrong, and we could use our capital resources sooner than we currently expect. Our operating plans and other demands on our cash resources may change as a result of many factors currently unknown to us, and we may need to seek additional funds sooner than planned, through public or private equity or debt financings or other capital sources, including potential collaborations, licenses and other similar arrangements. In addition, we may seek additional capital due to favorable market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. Attempting to secure additional financing may divert our management from our day-to-day activities, which may adversely affect our ability to develop our product candidates.

In January 2022, we entered into an equity purchase agreement (the “Purchase Agreement”) with Lincoln Park Capital Fund, LLC ("Lincoln Park”) which provides for the sale to Lincoln Park up to $50.0 million of shares of our common stock over the 36 month term of the Purchase Agreement, subject to certain conditions, of which we have sold $3.1 million through December 31, 2023.

In September 2022, we entered into our Controlled Equity Offering Sales Agreement (“Sales Agreement”) with Cantor Fitzgerald & Co (“Cantor”) pursuant to which we may, from time to time, sell shares of our common stock having an aggregate of up to $50.0 million pursuant to our Form S-3 registration statement (the "ATM Offering Program"). During the year ended December 31, 2023, we sold an aggregate of 537,200 shares of common stock for aggregate gross proceeds of $7.2 million. There can be no assurance that the Sales Agent will be successful in consummating future sales based on prevailing market conditions or in the quantities or at the prices that we deem appropriate. In addition, under current SEC regulations, as of the filing of this annual report on Form 10-K, our public float is less than $75 million, and under SEC regulations for so long as our public float remains less than $75 million, the amount we can raise through primary public offerings of securities in any twelve-month period using shelf registration statements is limited to an aggregate of one-third of our public float, which is referred to as the baby shelf rules. As of March 15, 2024, our public float was approximately $65.6 million, based on 3,914,309 shares of outstanding common stock held by non-affiliates and at a price of $16.95 per share, which was the last reported sale price of our common stock on the Nasdaq Capital Market on March 4, 2024. As a result of our public float being below $75 million, we will be limited by the baby shelf rules until such time as our public float exceeds $75 million, which means we only have the capacity to sell shares up to one-third of our public float under shelf registration statements in any twelve-month period. During the twelve-month period ended March 15, 2024, we had sold a total of $16.2 million in offerings pursuant to shelf registration statements which will limit our capacity to sell shares under our current shelf registration statement.

Our future capital requirements will depend on many factors, including, but not limited to:

• the type, number, scope, progress, expansions, results, costs and timing of, our clinical trials and preclinical studies of our product candidates which we are pursuing or may choose to pursue in the future;

• the costs and timing of manufacturing for our product candidates, including commercial manufacturing if any product candidate is approved;

• the timing and amount of the milestone or other payments made to us under our collaboration with Pfizer and any future collaborations, including with other parties;

• the costs, timing and outcome of regulatory review of our product candidates;

• the costs of obtaining, maintaining and enforcing our patents and other intellectual property rights;

• our efforts to enhance operational systems, including enhanced internal controls over financial reporting;

• the costs associated with hiring additional personnel and consultants as our clinical and preclinical activities increase;

• the costs and timing of establishing or securing sales and marketing capabilities if any product candidate is approved;

• our ability to achieve sufficient market acceptance, coverage and adequate reimbursement from third-party payors and adequate market share and revenue for any approved products;

• patients' willingness to pay out-of-pocket for any approved products in the absence of coverage and/or adequate reimbursement from third-party payors;

• any delays and cost increases that result from the COVID-19 pandemic or future epidemic diseases;

• the terms and timing of establishing and maintaining collaborations, licenses and other similar arrangements; and

• costs associated with any products or technologies that we may in-license or acquire.

Conducting clinical trials and preclinical studies is a time-consuming, expensive and uncertain process that takes years to complete, and we may never generate the necessary data or results required to obtain regulatory approval and commercialize our product candidates. In addition, our product candidates, if approved, may not achieve commercial success. Our commercial revenue, if any, will be derived from sales of products that we do not expect to be commercially available for many years, if at all. Accordingly, we will need to continue to rely on additional financing to achieve our business objectives. Adequate additional financing may not be available to us on acceptable terms, or at all.

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

Until such time, if ever, as we can generate substantial product revenue, we expect to finance our cash needs through equity offerings, debt financings, or other capital sources, including potential additional collaborations, licenses and other similar arrangements. We do not have any committed external source of funds, other than potential sales under our ATM Offering Program or Lincoln Park Purchase Agreement. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect your rights as a common stockholder. Our loan and security agreement with Oxford Financial LLC (the "Oxford LSA") includes, and any future debt financing and preferred equity 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. Such restrictions could adversely impact our ability to conduct our operations and execute our business plan.

If we raise funds through additional collaborations, licenses and other similar 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 and/or that may reduce the value of our Common Stock. If we are unable to raise additional funds through equity or debt financings or other arrangements when needed or on terms acceptable to us, we would be required to delay, limit, reduce, or terminate our product development or future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

The terms of the Lincoln Park Purchase Agreement limit the amount of share of common stock we may issue to Lincoln Park, which may limit our ability to utilize the arrangement to enhance our cash resources.

The Purchase Agreement includes restrictions on our ability to sell shares of our common stock to Lincoln Park, including, subject to specified limitations, (i) if a sale would cause us to issue, in the aggregate, 325,357 shares of common stock (which is equal to approximately 19.99% of our outstanding common stock immediately prior to the execution of the Purchase Agreement, as adjusted for the 1-for-25 reverse stock split completed on January 12, 2024) (the "Exchange Cap"), or (ii) if a sale would cause Lincoln Park and its affiliates to beneficially own more than 9.99% of our issued and outstanding common stock. As of December 31, 2023, we had issued an aggregate of 29,221 shares of common stock pursuant to the Purchase Agreement, reducing the Exchange Cap to 296,136 shares of common stock. Accordingly, we cannot guarantee that we will be able to sell all $50.0 million of shares of common stock in this offering. If we cannot sell the full amount of the shares that Lincoln Park has committed to purchase because of these limitations, we may be required to utilize more costly and time-consuming means of accessing the capital markets, which could materially adversely affect our liquidity and cash position.

The terms of the Oxford LSA place restrictions on our operating and financial flexibility. If we raise additional capital through debt financing, the terms of any new debt could further restrict our ability to operate our business.

As of December 31, 2023, we have an outstanding term loan in the principal amount of $20.0 million under our Oxford LSA. The Oxford LSA permitted us to draw down an additional $10.0 million (the "Term B Loan") upon achievement of certain clinical development milestones on or prior to June 30, 2023. As a result of the discontinuation of one of the cohorts in our KICKSTART trial, which was previously announced in January 2023, we did not achieve one of the clinical development milestones by June 30, 2023 and therefore no longer have access to the additional $10.0 million under the Term B Loan. The term loan is secured by a lien covering substantially all of our personal property, rights and assets, excluding intellectual property, which is subject to a negative pledge. The Oxford LSA contains customary affirmative and negative covenants and events of default applicable to us. The affirmative covenants include, among others, covenants requiring us to maintain governmental approvals, deliver certain financial reports, maintain insurance coverage and protect material intellectual property. The negative covenants include, among others, restrictions on transferring collateral, incurring additional indebtedness, engaging in mergers or acquisitions, paying cash dividends or making other distributions, making investments, creating liens, selling assets and making any payment on subordinated debt, in each case subject to certain exceptions. The restrictive covenants of the Oxford LSA could cause us to be unable to pursue business opportunities that we or our stockholders may consider beneficial. In addition, Oxford could declare a default upon the occurrence of any event that it interprets as a material adverse change as defined under the Oxford LSA. Due to our determination that there is substantial doubt as to our ability to continue as a going concern, we have determined that the assessment about whether a material adverse change may occur under the Oxford LSA is not within our control, increasing the risk that the loan could be considered to be in default. If we default under the Oxford LSA, Oxford may accelerate all of our repayment obligations and take control of our pledged assets, potentially requiring us to renegotiate our agreement on terms less favorable to us or to immediately cease operations. Further, if we are liquidated, Oxford's right to repayment would be senior to the rights of the holders of our common stock to receive any proceeds from the liquidation. Any declaration by Oxford of an event of default could significantly harm our business and prospects and could cause the price of our common stock to decline. If we raise any additional debt financing, the terms of such additional debt could further restrict our operating and financial flexibility.

Our management, as of December 31, 2023, and our independent registered public accounting firm, in their report on our financial statements as of and for the fiscal year ended December 31, 2023, have concluded that there is substantial doubt as to our ability to continue as a going concern.

Our audited financial statements for the fiscal year ended December 31, 2023 were prepared assuming that we will continue as a going concern. The going concern basis of the presentation assumes that we will continue in operation for the foreseeable future and will be able to realize our assets and satisfy our liabilities in the normal

course of business and do not include any adjustments to reflect the possible future effects on the recoverability and classification of assets or amounts and classification of liabilities that may result from our inability to continue as a going concern. As of December 31, 2023, our management concluded that, based on expected operating losses and negative cash flows, there is substantial doubt about our ability to continue as a going concern for the twelve months after the date the financial statements were issued. Our ability to continue as a going concern is subject to our ability to raise additional capital through equity offerings or debt financings, including through potential future sales of common stock to Lincoln Park under the Purchase Agreement and sales pursuant to the ATM Offering Program. Additionally, we may receive additional milestone payments under the Pfizer Agreement. However, we may not be able to secure additional financing in a timely manner or on favorable terms, if at all, and may not receive any milestone payments. If we cannot continue as a going concern, we may have to liquidate our assets and may receive less than the value at which those assets are carried on our financial statements, and it is likely that our stockholders may lose some or all of their investment in us. If we seek additional financing to fund our business activities in the future and there remains substantial doubt about our ability to continue as a going concern, investors or other financing sources may be unwilling to provide additional funding on commercially reasonable terms or at all.

Risks Related to the Discovery, Development and Regulatory Approval of Our Product Candidates

We depend heavily on the success of tomivosertib and zotatifin, which are in Phase 2 clinical development. If we or our collaborators are unable to successfully develop, obtain regulatory approval for and commercialize our product candidates, or experience significant delays in doing so, our business will be materially harmed.

We are early in our development efforts and have only two product candidates, tomivosertib and zotatifin, in clinical development. Our other development program focused on eIF4E inhibitors is still in the preclinical stage under our collaboration with Pfizer. Our ability to generate product revenue, which we do not expect will occur for many years, if ever, will depend heavily on the successful development and eventual commercialization of our product candidates. The success of our product candidates will depend on several factors, including the following:

- timely initiation and successful enrollment of participants in our clinical trials and timely completion of clinical trials and preclinical studies with favorable results;
- allowance or authorization to proceed with clinical trials of our product candidates under investigational new drug applications (“INDs”) by the U.S. Food and Drug Administration, (the “FDA”) or under similar regulatory submissions by comparable foreign regulatory authorities;
- the frequency, duration and severity of potential adverse events in clinical trials;
- whether we are required by the FDA or other comparable foreign regulatory authorities to conduct additional clinical trials or other studies beyond those planned to support the approval and commercialization of our product candidates;
- maintaining and establishing relationships with contract research organizations (“CROs”) and clinical sites for the clinical development of our product candidates both in the United States and internationally;
- our ability to demonstrate the safety and efficacy of our product candidates to the satisfaction of the FDA and comparable regulatory authorities;
- timely receipt of marketing approvals from applicable regulatory authorities, including new drug applications (“NDAs”) from the FDA and maintaining such approvals;
- our ability and the ability of third parties with whom we contract to manufacture adequate clinical and commercial supplies of our product candidates or any 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 (“cGMPs”);
- establishing sales, marketing and distribution capabilities and launching commercial sales of our products, if and when approved, whether alone or in collaboration with others;
- establishing and maintaining patent and trade secret protection or regulatory exclusivity for our product candidates;

- the willingness of physicians, operators of clinics and patients to utilize or adopt any of our product candidates over alternative or more conventional therapies, such as chemotherapy, to treat solid tumors;
- maintaining an acceptable safety profile of our products following approval, if any; and
- maintaining and growing an organization of people who can develop and commercialize our products and technology.

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 product candidates. If we or are collaborator are unable to develop, obtain regulatory approval for, or, if approved, successfully commercialize our product candidates, we may not be able to generate sufficient revenue to continue our business.

Our approach to the discovery and development of product candidates based on our technology platform is unproven, and we do not know whether we will be able to develop any products of commercial value, or if competing approaches will limit the commercial value of our product candidates.

The success of our business depends primarily upon our ability to identify, develop and commercialize our product candidates based on our proprietary selective translation regulation technology platform. Additionally, some of the disease-driving proteins that our product candidates are designed to downregulate are not adequately addressed by any approved therapies, which we believe is due to the location and complexity of these targets. While we believe we have observed favorable preclinical study and early clinical trial results related to product candidates based on our technology platform, we have not yet succeeded and may not succeed in demonstrating efficacy and safety for any product candidates in clinical trials or in obtaining marketing approvals from the FDA or other regulatory authorities or in commercializing such product candidates. Any product candidates based on our proprietary selective translation technology platform may be shown to have harmful side effects or may have other characteristics that may necessitate additional clinical testing, or make the product candidates unmarketable or unlikely to receive marketing approval. In particular, our novel approach of targeting the components of the eIF4F complex and its activating kinases, mitogen-activated protein kinases (“MAPK”) interacting kinases (“MNK”) to simultaneously downregulate multiple disease-driving proteins may have unexpected consequences, including adverse events that preclude successful development and approval of our product candidates. Further, because all of our current product candidates and development programs are focused on the eIF4F complex and MNK, adverse developments with respect to one of our product candidates or development programs may have a significant adverse impact on the actual or perceived likelihood of success and value of our other product candidates or development programs.

In addition, the biotechnology and biopharmaceutical industries are characterized by rapidly advancing technologies. Our future success will depend in part on our ability to maintain a competitive position with our scientific approach. If we fail to stay at the forefront of technological change in utilizing our approach to create and develop STRI product candidates, we may be unable to compete effectively. Our competitors may render our approach obsolete, or limit the commercial value of our product candidates by advances in existing technological approaches or the development of new or different approaches, potentially eliminating the advantages in our drug discovery process that we believe we derive from our approach. By contrast, adverse developments with respect to other companies that attempt to use a similar approach to our approach may adversely impact the actual or perceived value and potential of our product candidates. If any of these events occur, we may be forced to delay, modify, or abandon our development efforts for a program or programs, which would have a material adverse effect on our business and could potentially cause us to cease operations.

Clinical and preclinical development involves a lengthy and expensive process with an uncertain outcome, and the results of preclinical studies and early clinical trials are not necessarily predictive of future results. Any of our product candidates may not have favorable results in later clinical trials, if any, or receive regulatory approval on a timely basis, if at all.

Clinical and preclinical development is expensive and can take many years to complete, and its outcome is inherently uncertain. We cannot guarantee that any clinical trials or preclinical studies will be conducted as planned or completed on schedule, if at all, and failure can occur at any time during the preclinical study or clinical trial process, including due to factors that are beyond our control. Further, we may not be able to meet expected timeframes for data readouts for our clinical trials. Despite promising preclinical or clinical results, any product candidate can unexpectedly fail at any stage of preclinical or clinical development. The historical failure rate for

product candidates in our industry is high. The results from preclinical studies or clinical trials of a product candidate or a competitor's product candidate in the same class may not predict the results of later clinical trials of our product candidate, and interim, topline or preliminary results of a clinical trial are not necessarily indicative of final results. Product candidates in later stages of clinical trials may fail to show the desired safety and efficacy characteristics despite having progressed through preclinical studies and initial clinical trials. In particular, while we have conducted certain preclinical studies and early clinical trials of tomivosertib, we do not know whether tomivosertib will perform in ongoing and future clinical trials as it has performed in these prior studies. It is not uncommon to observe results in clinical trials that are unexpected based on preclinical studies and early clinical trials, and many product candidates fail in clinical trials despite very promising early results. A number of companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in clinical development even after achieving promising results in earlier studies.

For the foregoing reasons, we cannot be certain that our ongoing and planned clinical trials and preclinical studies will be successful. Any safety concerns observed in any one of our clinical trials in our targeted indications could limit the prospects for regulatory approval of our product candidates in those and other indications, which could have a material adverse effect on our business, financial condition and results of operations.

Any difficulties or delays in the commencement or completion, or any terminations or suspensions, of our current or planned clinical trials could result in increased costs to us, delay or limit our ability to generate revenue and adversely affect our commercial prospects.

In order to obtain FDA approval to market a new drug we must demonstrate the safety and efficacy of our product candidates in humans to the satisfaction of the FDA. To meet these requirements, we will have to conduct adequate and well-controlled clinical trials. Clinical testing is expensive, time-consuming and subject to uncertainty.

Before we or our collaborator can initiate clinical trials for a product candidate, we or they must submit the results of preclinical studies to the FDA or comparable foreign regulatory authorities along with other information, including information about product candidate chemistry, manufacturing and controls and proposed clinical trial protocol, as part of an IND or similar regulatory submission. The FDA or comparable foreign regulatory authorities may require us or our collaborators to conduct additional preclinical studies for any product candidate before it allows us to initiate clinical trials under any IND or similar regulatory submission, which may lead to delays and increase the costs of our preclinical development programs. Moreover, even if these trials begin, issues may arise that could cause regulatory authorities to suspend or terminate such clinical trials. Any delays in the commencement or completion of our ongoing and planned clinical trials for our current and any future product candidate could significantly affect our product development timelines and product development costs.

We do not know whether our planned trials will begin on time or be completed on schedule, if at all. The commencement, data readouts, and completion of clinical trials can be delayed for a number of reasons, including delays related to:

- inability to generate sufficient preclinical, toxicology, or other in vivo or in vitro data to support the initiation or continuation of a clinical trial;
- obtaining regulatory authorizations to commence a trial or reaching a consensus with regulatory authorities on trial design or implementation;
- any failure or delay in reaching an agreement with CROs and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- delays in identifying, recruiting and training suitable clinical investigators;
- delays in obtaining approval from one or more institutional review boards ("IRBs") or ethics committees at clinical trial sites;
- IRBs refusing to approve, suspending or terminating the trial at an investigational site, precluding enrollment of additional subjects, or withdrawing their approval of the trial;
- changes to the clinical trial protocol;
- clinical sites deviating from the trial protocol or dropping out of a trial;

• failure by us or our CROs to perform in accordance with good clinical practice (“GCP”) requirements or applicable regulatory guidelines in other countries;

• manufacturing sufficient quantities of product candidate or obtaining sufficient quantities of combination therapies for use in clinical trials;

• subjects failing to enroll or remain in our trials at the rate we expect, or failing to return for post-treatment follow-up;

• patients choosing alternative treatments for the indications for which we are developing our product candidates, or participating in competing clinical trials;

• lack of adequate funding to continue the clinical trials or costs being greater than we anticipate;

• subjects experiencing severe or unexpected drug-related adverse effects;

• occurrence of serious adverse events in trials of the same class of agents conducted by other companies;

• imposition of a temporary or permanent clinical hold by regulatory authorities;

• selection of clinical endpoints that require prolonged periods of clinical observation or analysis of the resulting data;

• the costs of clinical trials of our product candidates being greater than we anticipate;

• transfer of manufacturing processes to larger-scale facilities operated by a contract manufacturing organization, (“CMO”) delays or failure by our CMOs or us to make any necessary changes to such manufacturing process, or failure of our CMOs to produce clinical trial materials in accordance with cGMPs regulations or other applicable requirements; and

• third parties being unwilling or unable to satisfy their contractual obligations to us in a timely manner.

Clinical trials must be conducted in accordance with the FDA and other applicable regulatory authorities' legal requirements, regulations or guidelines, and are subject to oversight by these governmental agencies and Ethics Committees or IRBs at the medical institutions where the clinical trials are conducted. We could also encounter delays if a clinical trial is suspended or terminated by us, by the IRBs of the institutions in which such trials are being conducted, by a Data Safety Monitoring Board for such trial or by the FDA or comparable foreign regulatory authorities. Such authorities may impose such a suspension or termination due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols, inspection of the clinical trial operations or trial site by the FDA or comparable foreign regulatory authorities resulting in the imposition of a clinical hold, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from using a drug, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical trial. In addition, changes in regulatory requirements and policies may occur, and we may need to amend clinical trial protocols to comply with these changes. Amendments may require us to resubmit our clinical trial protocols to IRBs for reexamination, which may impact the costs, timing or successful completion of a clinical trial.

Further, our conduct of clinical trials in foreign countries presents additional risks that may delay completion of our clinical trials. These risks include the failure of enrolled patients in foreign countries to adhere to clinical protocol as a result of differences in healthcare services or cultural customs, managing additional administrative burdens associated with foreign regulatory schemes, as well as political and economic risks, including war, relevant to such foreign countries.

In addition, many of the factors that cause, or lead to, the termination or suspension of, or a delay in the commencement or completion of, clinical trials may also ultimately lead to the denial of regulatory approval of a product candidate. We may make formulation or manufacturing changes to our product candidates, in which case we may need to conduct additional preclinical studies and/or clinical trials to show that the results obtained from such new formulations are consistent with previous results. Any delays to our clinical trials that occur as a result could shorten any period during which we may have the exclusive right to commercialize our product candidates and our competitors may be able to bring products to market before we do, and the commercial viability of our product candidates could be significantly reduced. Any of these occurrences may harm our business, financial condition and prospects significantly.

We may find it difficult to enroll patients in our clinical trials. If we encounter difficulties enrolling subjects in our clinical trials, our clinical development activities could be delayed or otherwise adversely affected.

We may not be able to initiate or continue clinical trials for our product candidates if we are unable to identify and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA or similar regulatory authorities outside the United States. Subject enrollment, a significant factor in the timeline of clinical trials, is affected by many factors including the size and characteristics of the patient population, the proximity of patients to clinical sites, the eligibility and exclusion criteria for the trial, the design of the clinical trial, the risk that enrolled patients will not complete a clinical trial, our ability to recruit clinical trial investigators with the appropriate competencies and experience, our ability to obtain and maintain patient consents, patient referral practices of physicians, ability to monitor patients adequately during and after treatment, competing clinical trials and clinicians' and patients' perceptions as to the potential advantages and risks of the product candidate being studied in relation to other available therapies, including any new products that may be approved for the indications we are investigating as well as any product candidates under development.

We will be required to identify and enroll a sufficient number of subjects for each of our clinical trials. Potential subjects for any planned clinical trials may not be adequately diagnosed or identified with the diseases which we are targeting or may not meet the entry criteria for such trials. We also may encounter difficulties in identifying and enrolling patients with a stage of disease appropriate for our ongoing and planned clinical trials and monitoring such patients adequately during and after treatment. The large number of clinical trials concurrently seeking to enroll patients with NSCLC and breast cancers, as well as the other cancers we intend to evaluate, may result in delays or difficulties enrolling a sufficient number of patients, particularly patients that meet our specific enrollment criteria, and completing the trials on schedule, if at all. We may not be able to initiate or continue clinical trials if we are unable to locate a sufficient number of eligible subjects to participate in the clinical trials required by the FDA or comparable foreign regulatory authorities. In addition, the process of finding and diagnosing patients is and will likely continue to be costly. The timing of our clinical trials depends, in part, on the speed at which we can recruit patients to participate in our trials, as well as completion of required follow-up periods. The eligibility criteria of our clinical trials further limits the pool of available trial participants. If patients are unwilling to participate in our trials for any reason, including the existence of concurrent clinical trials for similar patient populations, the availability of approved therapies, or we otherwise have difficulty enrolling a sufficient number of patients, the timeline for recruiting subjects, conducting studies and obtaining regulatory approval of our product candidates may be delayed. For example, in January 2023, we announced enrollment challenges due to staffing issues and completion of other trials across clinical sites for both the frontline PD-L1>50% cohort and the PD-L1>1% maintenance cohort of our KICKSTART trial of tomivosertib in combination with patients with metastatic NSCLC. As a result, we have discontinued enrollment in the PD-L1>1% cohort and focused on enrollment in the PD-L1>50% cohort. We expect to report topline data from the PD-L1>50% cohort in early April 2024. Additionally, because our clinical trials may enroll patients with advanced/metastatic cancers, the patients are typically in the late stages of their disease and may experience clinical disease progression independent from our product candidates, making them unevaluable for purposes of the clinical trial and requiring additional patient enrollment. Our inability to enroll a sufficient number of subjects for any of our future clinical trials would result in significant delays or may require us to abandon one or more clinical trials altogether. In addition, we expect to rely on CROs and clinical trial sites to ensure proper and timely conduct of our future clinical trials, and while we have entered into agreements governing their services, we have limited influence over their actual performance. We cannot assure you that our assumptions used in determining expected clinical trial timelines are correct or that we will not experience delays in enrollment, which would result in the delay of completion of such trials beyond our expected timelines.

Use of our product candidates could be associated with side effects, adverse events or other properties or safety risks, which could delay or preclude approval, cause us to suspend or discontinue clinical trials, abandon a product candidate, limit the commercial profile of an approved label or result in other significant negative consequences that could severely harm our business, prospects, operating results and financial condition.

As is the case with oncology drugs generally, it is likely that there may be side effects and adverse events associated with use of our product candidates. Results of our clinical trials could reveal a high and unacceptable severity and prevalence of side effects or unexpected characteristics. Undesirable side effects caused by our product candidates when used alone or in combination with other approved drugs or investigational agents could cause us or regulatory authorities to interrupt, delay or halt clinical trials and could result in a more restrictive label, or lead to the delay or denial of regulatory approval by the FDA or comparable foreign regulatory authorities. The drug-related

side effects could affect patient recruitment or the ability of enrolled patients to complete the trial or result in potential product liability claims. Any of these occurrences may harm our business, financial condition and prospects significantly.

Moreover, if our product candidates are associated with undesirable side effects in clinical trials or have characteristics that are unexpected, we may elect to abandon their development or limit their development to more narrow uses or subpopulations in which the undesirable side effects or other characteristics are less prevalent, less severe or more acceptable from a risk-benefit perspective, which may limit the commercial expectations for the product candidate if approved. We may also be required to modify our study plans based on findings in our ongoing clinical trials.

In our Phase 1 dose escalation trial of tomivosertib in solid tumor patients, using a capsule formulation, the most frequent treatment-related adverse events ("TRAEs") were nausea, vomiting, fatigue, constipation, dyspepsia and tremor. At doses that exceeded our recommended Phase 2 dose ("RP2D"), we observed a higher incidence and severity of TRAEs. In our Phase 1 dose escalation trial of tomivosertib in lymphoma patients, the most common TRAEs experienced by patients in the RP2D expansion cohort were nausea, vomiting, hypercalcemia, and fatigue. In our Phase 2a trial of tomivosertib combined with anti-PD-(L)1 agents, the most common TRAEs were nausea, fatigue, tremor, vomiting, increased aspartate aminotransferase and increased alanine aminotransferase. These TRAEs were generally Grade 1 or 2 in severity, although alanine aminotransferase increase, blood creatine phosphokinase increase and rash were experienced as Grade 3 in two patients each.

In the completed Phase 1 dose escalation portion of our Phase 1/2 clinical trial of zotatifin in patients with solid tumors with certain mutations, we have observed three dose limiting toxicities ("DLTs"). The first DLT, observed in the 0.035mg/kg IV weekly cohort, was a Grade 2 thrombocytopenia that prevented the completion of continued therapy throughout the DLT window. The second and third DLTs were observed in the 0.1 mg/kg IV two weeks on and one week off cohort. Thus the 0.1 mg/kg dose exceeded the maximum tolerated dose ("MTD"). One patient experienced a DLT of Grade 3 anemia and another patient experienced a DLT of Grade 3 GI bleed in the setting of Grade 2 thrombocytopenia. Overall adverse events ("AEs") across all dose levels included predominantly Grade 1 and Grade 2 nausea, vomiting and anemia.

We may be required to modify our development and clinical trial plans based on findings in our ongoing clinical trials. Many compounds that initially showed promise in early-stage testing for treating cancer have later been found to cause side effects that prevented further development of the compound or, in larger patient populations, failed to demonstrate statistically significant efficacy. In addition, regulatory authorities may draw different conclusions or require additional testing to further explore adverse safety findings.

It is possible that as we test our product candidates in larger, longer and more extensive clinical trials, including with different dosing regimens, or as the use of these product candidates becomes more widespread if they receive regulatory approval, illnesses, injuries, discomforts and other adverse events that were observed in earlier trials, as well as conditions that did not occur or went undetected in previous trials, may be reported by subjects. If such side effects become known later in development or upon approval, if any, such findings may harm our business, financial condition and prospects significantly. In addition, our ongoing and planned clinical trials of tomivosertib in combination with inhibitors of programmed cell death protein 1 ("PD-1") and programmed cell death ligand 1 ("PD-L1") (collectively, "Anti-PD-(L)1" therapy) may result in adverse events based on the combination therapy that may negatively impact the reported adverse event profile in such clinical trial. Anti-PD-(L)1 therapy has been shown to have adverse events, including immune-related adverse events on the liver and other organ systems, which may limit the maximum dose in our clinical trials or otherwise negatively impact our combination clinical trials. Patients treated with our product candidates may also be undergoing surgical, radiation and chemotherapy treatments, which can cause side effects or adverse events that are unrelated to our product candidates but may still impact the success of our clinical trials. The inclusion of critically ill patients in our clinical trials may result in deaths or other adverse medical events due to other therapies or medications that such patients may be using or due to the gravity of such patients' illnesses. For example, it is expected that some of the patients enrolled in our clinical trials will die or experience major clinical events either during the course of our clinical trials or after participating in such trials.

In addition, if one or more of our product candidates receives marketing approval, and we or others later identify undesirable side effects caused by any such product, a number of potentially significant negative consequences could result, including:

- regulatory authorities may withdraw, suspend or limit approvals of such product, or seek an injunction against its manufacture or distribution;

- we may be required to recall a product or change the way such product is administered to patients;
- regulatory authorities may require additional warnings on the label, such as a “black box” warning or a contraindication;
- we may be required to implement a Risk Evaluation and Mitigation Strategy (“REMS”) or create a medication guide outlining the risks of such side effects for distribution to patients;
- we may be required to change the way a product is distributed or administered, conduct additional clinical trials or change the labeling of a product or be required to conduct additional post-marketing studies or surveillance;
- we could be sued and held liable for harm caused to patients;
- sales of the product may decrease significantly or the product could become less competitive; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of the particular product candidate, if approved, and could significantly harm our business, results of operations and prospects.

As an organization, we have never completed pivotal clinical trials and may be unable to do so for any of our product candidates.

We will need to successfully complete our planned clinical trials and later-stage and pivotal clinical trials in order to obtain FDA or comparable foreign regulatory approval to market our product candidates. Carrying out later-stage clinical trials and the submission of a successful NDA is a complicated process. As an organization, we have not previously conducted any pivotal clinical trials, have limited experience in preparing and submitting marketing applications, and have not previously submitted an NDA or other comparable foreign regulatory submission for any product candidate. In addition, we have had limited interactions with the FDA and cannot be certain how many additional clinical trials of our product candidates will be required or how such trials should be designed. Consequently, we may be unable to successfully and efficiently execute and complete necessary clinical trials in a way that leads to regulatory submission and approval of our product candidates. We may require more time and incur greater costs than our competitors and may not succeed in obtaining regulatory approvals of product candidates that we develop. Failure to commence or complete, or delays in, our planned clinical trials, could prevent us from or delay us in submitting NDAs for and commercializing our product candidates.

We are developing our product candidates to be used in combination with additional therapies, which exposes us to additional risks.

We are developing tomivosertib for use in combination with one or more currently approved anti-PD-(L)1 therapies and zotatifin for use in combination with ER inhibitors, such as fulvestrant, HER2 inhibitors, Herceptin, KRAS G12C inhibitors and abemaciclib, a CDK4/6 inhibitor. Fulvestrant is generic and marketed by several companies including Astrazeneca who markets it under the brand name Faslodex for the treatment of breast cancer. Herceptin is owned and marketed by Genentech for the treatment of breast cancer and other cancers. Two KRAS G12C inhibitors have now been approved for the treatment of NSCLC. Abemaciclib is marketed by Eli Lilly and Company under the name Verzenio for the treatment of ER+/Her2-breast cancer. Therefore, even if tomivosertib or zotatifin were to receive marketing approval or be commercialized for use in combination, we would continue to bear the risks that the FDA or similar foreign regulatory authorities could revoke approval of the anti-PD-(L)1 therapy or the ER, HER2 or KRAS G12C inhibitors used in combination with tomivosertib or zotatifin, respectively, or that safety, efficacy, manufacturing or supply issues could arise with these combination therapies. Combination therapies are commonly used for the treatment of cancer, and we would be subject to similar risks if we develop other product candidates for use in combination with other classes of oncology therapies. Developing combination therapies using approved anti-PD-(L)1 therapies, or ER, HER2 and KRAS G12C inhibitors, as we plan to do for tomivosertib and zotatifin, respectively, also exposes us to additional clinical and development-related risks, such as the requirement that we collect data to demonstrate the safety and efficacy of each active component of any combination regimen we may develop. In addition, we may also evaluate the combination of tomivosertib, zotatifin or other product candidates with one or more other cancer therapies that have not yet been approved for marketing by the FDA or similar foreign regulatory authorities. We may not be able to market and sell our product candidates

for use in combination regimens with any such unapproved cancer therapies that do not ultimately obtain their own marketing approvals.

If the FDA or similar foreign regulatory authorities do not approve these other combination agents or revoke their approval of, or if safety, efficacy, manufacturing, or supply issues arise with the drugs we choose to evaluate in combination with our product candidates, we may be unable to obtain approval of or market tomivosertib, zotatifin or other product candidates for combination therapy regimens.

Additionally, the use of one or more combination agents in our clinical trials increases the costs of such clinical trials. Furthermore, if the third-party providers of therapies or therapies in development used in combination with our product candidates are unable to produce sufficient quantities for clinical trials or for commercialization of our product candidates, or if the costs of combination therapies are prohibitive, 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.

We may expend our limited resources to pursue a particular product candidate 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 specific product candidates, and specific indications. As a result, we may forgo or delay pursuit of opportunities with other product candidates that could have had greater commercial potential. Specifically, we are developing product candidates that singularly target the eIF4F complex and its activating kinase, MNK, and we are prioritizing the development of our product candidates in indications that are sensitive to the inhibition of these targets. For example, after completion of a combination trial of tomivosertib and avelumab, a PD-L1 inhibitor, in patients with microsatellite stable colorectal cancer, which is generally not responsive to immunological agents, we elected to focus future development of tomivosertib on more immune-responsive cancers. Similarly, we stopped our clinical trial evaluating tomivosertib in patients with castrate-resistant prostate cancer to focus on the development of tomivosertib in combination with anti-PD-(L)1 therapies. Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. Our spending on current and future research and development programs and product candidates for specific indications may not yield any commercially viable product candidates. 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 collaborations, licenses and other similar arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such product candidate.

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

From time to time, we may publicly disclose interim, topline or preliminary data from our clinical trials and preclinical studies, 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 full analyses of all data related to the particular 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 interim, topline, or preliminary results that we report may differ from future results of the same trials, or different conclusions or considerations may qualify such results, once additional data have been received and fully evaluated. Topline and preliminary 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. As a result, topline and preliminary data should be viewed with caution until the final data are available.

We may also disclose interim data from our clinical trials. Interim data from clinical trials that we may complete are subject to the risk that one or more of the clinical outcomes may materially change as patient enrollment continues and more patient data become available. Adverse differences between interim, topline, or preliminary data and final data could significantly harm our business prospects.

Further, others, including regulatory agencies, may not accept or agree with our assumptions, estimates, calculations, conclusions or analyses or may interpret or weigh the importance of data differently, which could impact the value of the particular program, the approvability or commercialization of the particular product

candidate or product and our business in general. In addition, the information we choose to publicly disclose regarding a particular study or clinical trial is based on what is typically extensive information, and you or others may not agree with what we determine is the material or otherwise appropriate information to include in our disclosure, and any information we determine not to disclose may ultimately be deemed significant with respect to future decisions, conclusions, views, activities or otherwise regarding a particular drug, product candidate or our business. If the interim, topline, or preliminary data that we report differ from actual results, or if others, including regulatory authorities, disagree with the conclusions reached, our ability to obtain approval for and commercialize our product candidates, our business, operating results, prospects or financial condition may be harmed.

Changes in methods of product candidate manufacturing or formulation may result in additional costs or delay.

As product candidates progress through clinical trials to marketing approval and commercialization, it is common that various aspects of the development program, such as manufacturing methods and formulation, are altered along the way in an effort to optimize safety, efficacy, yield and manufacturing batch size, minimize costs and achieve consistent quality and results. Any future changes we may make to our product candidates may also cause such candidates to perform differently and affect the results of future clinical trials. Such changes or related unfavorable clinical trial results could delay initiation or completion of additional clinical trials, require the conduct of bridging studies or clinical trials or the repetition of one or more studies or clinical trials, increase development costs, delay or prevent potential marketing approval and jeopardize our ability to commercialize our product candidates, if approved, and generate revenue.

We may attempt to secure approval from the FDA or comparable foreign regulatory authorities through the use of accelerated approval pathways. If we are unable to obtain such approval, we may be required to conduct additional clinical trials beyond those that we contemplate, which could increase the expense of obtaining, and delay the receipt of, necessary marketing approvals. Even if we receive accelerated approval from the FDA, if our confirmatory trials do not verify clinical benefit, or if we do not comply with rigorous post-marketing requirements, the FDA may seek to withdraw accelerated approval.

We may in the future seek accelerated approval for our one or more of our product candidates. Under the accelerated approval program, the FDA may grant accelerated approval to a product candidate designed to treat a serious or life-threatening condition that provides meaningful therapeutic benefit over available therapies upon a determination that the product candidate has an effect on a surrogate endpoint or intermediate clinical endpoint that is reasonably likely to predict clinical benefit. The FDA considers a clinical benefit to be a positive therapeutic effect that is clinically meaningful in the context of a given disease, such as irreversible morbidity or mortality. For the purposes of accelerated approval, a surrogate endpoint is a marker, such as a laboratory measurement, radiographic image, physical sign, or other measure that is thought to predict clinical benefit, but is not itself a measure of clinical benefit. An intermediate clinical endpoint is a clinical endpoint that can be measured earlier than an effect on irreversible morbidity or mortality that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit. The accelerated approval pathway may be used in cases in which the advantage of a new drug over available therapy may not be a direct therapeutic advantage, but is a clinically important improvement from a patient and public health perspective. If granted, accelerated approval is usually contingent on the sponsor's agreement to conduct, in a diligent manner, additional confirmatory studies to verity and describe the drug's clinical benefit. If such post-approval studies fail to confirm the drug's clinical benefit or are not completed in a timely manner, the FDA may withdraw its approval of the drug on an expedited basis. In addition, in December 2022, President Biden signed an omnibus appropriations bill to fund the U.S. government through fiscal year 2023. Included in the omnibus bill is the Food and Drug Omnibus Reform Act of 2022, which among other things, provided FDA new statutory authority to mitigate potential risks to patients from continued marketing of ineffective drugs previously granted accelerated approval. Under these provisions, the FDA may require a sponsor of a product seeking accelerated approval to have a confirmatory trial underway prior to such approval being granted.

Prior to seeking accelerated approval for any of our product candidates, we intend to seek feedback from the FDA and will otherwise evaluate our ability to seek and receive accelerated approval. There can be no assurance that after our evaluation of the feedback and other factors we will decide to pursue or submit an NDA for accelerated approval or any other form of expedited development, review or approval. Furthermore, if we decide to submit an application for accelerated approval or receive for our product candidates, there can be no assurance that such application will be accepted or that any expedited development, review or approval will be granted on a timely basis, or at all. The FDA or other comparable foreign regulatory authorities could also require us to conduct further

studies prior to considering our application or granting approval of any type. A failure to obtain accelerated approval or any other form of expedited development, review or approval for our product candidate would result in a longer time period to commercialization of such product candidate, if any, could increase the cost of development of such product candidate and could harm our competitive position in the marketplace.

Disruptions at the FDA and other government agencies caused by funding shortages or global health concerns could hinder their ability to hire, retain or deploy key leadership and other personnel, or otherwise prevent new or modified products from being developed, approved or commercialized in a timely manner or at all, 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, statutory, regulatory and policy changes, the FDA's ability to hire and retain key personnel and accept the payment of user fees, and other events that may otherwise affect the FDA's ability to perform routine functions. Average review times at the FDA have fluctuated in recent years. In addition, government funding of other government agencies that fund research and development activities is subject to the political process, which is inherently fluid and unpredictable. Disruptions at the FDA and other agencies may also slow the time necessary for new drugs or modifications to approved drugs 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 FDA employees and stop critical activities.

Separately, in response to the COVID-19 pandemic, the FDA postponed most inspections of domestic and foreign manufacturing facilities at various points. Even though the FDA has since resumed standard inspection operations, any resurgence of the virus or emergence of new variants may lead to administrative or inspectional delays. If a prolonged government shutdown occurs, or if global health concerns prevent the FDA or other regulatory authorities from conducting their regular inspections, reviews or other regulatory activities, it could significantly impact the ability of the FDA or other regulatory authorities to timely review and process our regulatory submissions, which could have a material adverse effect on our business.

We may seek orphan drug designation for certain future product candidates, but we may be unable to obtain such designation or to obtain or maintain the benefits associated with orphan drug designation, including market exclusivity, which may cause our product revenue, if any, to be reduced.

We may seek orphan product designation for some of our product candidates; however, we may never receive such designations. Under the Orphan Drug Act, the FDA may designate a drug product as an orphan drug if it is intended to treat a rare disease or condition, defined as a patient population of fewer than 200,000 in the United States, or a patient population greater than 200,000 in the United States where there is no reasonable expectation that the cost of developing the drug will be recovered from sales in the United States. Orphan drug designation must be requested before submitting an NDA. In the United States, orphan drug designation entitles a party to financial incentives such as opportunities for grant funding towards clinical trial costs, tax advantages and application fee waivers. After the FDA grants orphan drug designation, the generic identity of the drug and its potential orphan use are disclosed publicly by the FDA.

In addition, if a product receives the first FDA approval for the disease or condition for which it has orphan designation, the product is entitled to orphan drug exclusivity, which means the FDA may not approve any other application to market the same drug for the same disease or condition for a period of seven years, except in limited circumstances, such as a showing of clinical superiority over the product with orphan exclusivity or where the manufacturer is unable to assure sufficient product quantity for the orphan patient population. Exclusive marketing rights in the United States may also be unavailable if we or our collaborators seek approval for a disease or condition broader than the orphan designated disease or condition and may be lost if the FDA later determines that the request for designation was materially defective.

Even if we obtain orphan drug designation, we may not be the first to obtain marketing approval for any particular orphan disease or condition due to the uncertainties associated with developing pharmaceutical products. Further, even if we obtain orphan drug exclusivity for a product candidate, that exclusivity may not effectively protect the product from competition because different drugs can be approved for the same disease or condition. Even after an orphan drug is approved, the FDA can subsequently approve the same drug for the same disease or condition if the FDA concludes that the later drug is clinically superior in that it is safer, more effective, or makes a

major contribution to patient care. Orphan drug designation neither shortens the development time or regulatory review time of a drug nor gives the drug any advantage in the regulatory review or approval process.

A Fast Track Designation from the FDA, even if granted for any of our 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 regulatory approval.

In November 2023, the FDA granted Fast Track designation to zotatifin in combination with fulvestrant and abemaciclib (ZFA triplet) as second- or third-line therapy for the treatment of adult patients with estrogen receptor-positive (ER+)/human epidermal growth factor-negative (HER2-) advanced or metastatic breast cancer with disease progression following treatment with endocrine therapy and a CDK 4/6 inhibitor, and we may seek such designation for some or all of our other product candidates. The Fast Track program is intended to expedite or facilitate the process for reviewing product candidates that meet certain criteria. Specifically, drugs and biologics are eligible for Fast Track designation if they are intended, alone or in combination with one or more drugs or biologics, to treat a serious or life-threatening disease or condition and demonstrate the potential to address unmet medical needs for the disease or condition. Fast Track designation applies to the combination of the product candidate and the specific indication for which it is being studied. The sponsor of a Fast Track product candidate has opportunities for more frequent interactions with the applicable FDA review team during product development and, once an NDA is submitted, the application may be eligible for priority review. An NDA submitted for a Fast Track product candidate may also be eligible for rolling review, where the FDA may consider for review sections of the NDA on a rolling basis before the complete application is submitted, if the sponsor provides a schedule for the submission of the sections of the NDA, the FDA agrees to accept sections of the NDA and determines that the schedule is acceptable, and the sponsor pays any required user fees upon submission of the first section of the application.

The FDA has broad discretion whether or not to grant this designation. Even if we believe a particular product candidate is eligible for this designation, we cannot assure you that the FDA would decide to grant it. Even if we do receive Fast Track Designation for any of our product candidates, such product candidates may not experience a faster development process, review or approval compared to conventional FDA procedures. The FDA may also withdraw Fast Track Designation if it believes that the designation is no longer supported by data from our clinical development program. Furthermore, such a designation does not increase the likelihood that zotatifin or any other product candidate that may be granted Fast Track designation will receive regulatory approval in the U.S. Many product candidates that have received Fast Track Designation have ultimately failed to obtain approval.

If we are required by the FDA to obtain approval of a companion diagnostic test in connection with approval of any of our product candidates, and we do not obtain or face delays in obtaining FDA approval of a diagnostic test, we will not be able to commercialize such product candidate and our ability to generate revenue will be materially impaired.

If safe and effective use of any of our product candidates depends on an *in vitro* diagnostic that is not otherwise commercially available, then the FDA generally will require approval or clearance of that diagnostic, known as a companion diagnostic, at the same time that the FDA approves our product candidates, if at all. According to FDA guidance, if the FDA determines that a companion diagnostic test is essential to the safe and effective use of a novel therapeutic product or indication, the FDA generally will not approve the therapeutic product or new therapeutic product indication if the companion diagnostic is not also approved or cleared for that indication. If a satisfactory companion diagnostic is not commercially available, we may be required to develop or obtain one that would be subject to regulatory approval requirements. The process of obtaining or creating such diagnostics is time consuming and costly.

Companion diagnostics are developed in conjunction with clinical programs for the associated product and are subject to regulation as medical tests by the FDA and comparable regulatory authorities, and, to date, the FDA has generally required premarket approval of companion diagnostics for cancer therapies. The approval of a companion diagnostic as part of the therapeutic product's labeling limits the use of the therapeutic product to only those patients who express the specific genetic alteration that the companion diagnostic was developed to detect. If the FDA or a comparable regulatory authority requires approval of a companion diagnostic for any of our product candidates, whether before or after it obtains marketing approval, we, and/or future collaborators, may encounter difficulties in developing and obtaining approval for such product candidate. Any delay or failure by us or third-party collaborators to develop or obtain regulatory approval of a companion diagnostic could delay or prevent approval or continued marketing of such product candidate. We may also experience delays in developing a sustainable, reproducible and scalable manufacturing process for the companion diagnostic or in transferring that process to

commercial partners or negotiating insurance reimbursement plans, all of which may prevent us from completing our clinical trials or commercializing our product candidate, if approved, on a timely or profitable basis, if at all.

Risks Related to Our Reliance on Third Parties

We rely on third parties to conduct our clinical trials and preclinical studies. If these third parties do not successfully carry out their contractual duties, comply with applicable regulatory requirements or meet expected deadlines, our development programs and our ability to seek or obtain regulatory approval for or commercialize our product candidates may be delayed.

We are dependent on third parties to conduct our clinical trials and preclinical studies. Specifically, we have used and relied on, and intend to continue to use and rely on, medical institutions, clinical investigators, CROs and consultants to conduct our preclinical studies and clinical trials in accordance with our clinical protocols and regulatory requirements. These CROs, investigators and other third parties play a significant role in the conduct and timing of these trials and subsequent collection and analysis of data. While we have and will have agreements governing the activities of our third-party contractors, we have limited influence over their actual performance. Nevertheless, we are responsible for ensuring that each of our clinical trials is conducted in accordance with the applicable protocol and legal, regulatory and scientific standards, and our reliance on our CROs and other third parties does not relieve us of our regulatory responsibilities. We and our CROs are required to comply with GCP requirements, which are regulations and guidelines enforced by the FDA and comparable foreign regulatory authorities for all of our product candidates in clinical development. Regulatory authorities enforce these GCPs through periodic inspections of trial sponsors, principal investigators and trial sites. If we or any of our CROs or trial sites fail to comply with applicable GCPs, 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. In addition, our clinical trials must be conducted with product produced under cGMP regulations. Our failure to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process.

There is no guarantee that any of our CROs, investigators or other third parties will devote adequate time and resources to such trials or studies or perform as contractually required. If any of these third parties fail to meet expected deadlines, adhere to our clinical protocols or meet regulatory requirements, or otherwise performs in a substandard manner, our clinical trials may be extended, delayed or terminated. In addition, many of the third parties with whom we contract may also have relationships with other commercial entities, including our competitors, for whom they may also be conducting clinical trials or other development activities that could harm our competitive position. In addition, principal investigators for our clinical trials may serve as scientific advisors or consultants to us from time to time and may receive compensation in connection with such services. If these relationships and any related compensation result in perceived or actual conflicts of interest, or the FDA concludes that the financial relationship may have affected the interpretation of the study, the integrity of the data generated at the applicable clinical trial site may be questioned and the utility of the clinical trial itself may be jeopardized, which could result in the delay or rejection by the FDA of any NDA we submit. Any such delay or rejection could prevent us from commercializing our product candidates.

Our CROs have the right to terminate their agreements with us in the event of an uncured material breach. In addition, some of our CROs have an ability to terminate their respective agreements with us if it can be reasonably demonstrated that the safety of the subjects participating in our clinical trials warrants such termination, if we make a general assignment for the benefit of our creditors or if we are liquidated. If any of our relationships with these third parties terminate, we may not be able to enter into arrangements with alternative third parties on commercially reasonable terms or at all. Switching or adding additional CROs, investigators and other third parties involves additional cost and requires our management's time and focus. In addition, there is a natural transition period when a new CRO commences work. As a result, delays occur, which can materially impact our ability to meet our desired clinical development timelines. Though we carefully manage our relationships with our CROs, investigators and other third parties, there can be no assurance that we will not encounter challenges or delays in the future or that these delays or challenges will not have a material adverse impact on our business, financial condition and prospects.

We rely on third parties for the manufacture of our product candidates for clinical and preclinical development and expect to continue to do so for the foreseeable future. This reliance on third parties increases the risk that we will not have sufficient quantities of our product candidates or products or such quantities at an acceptable cost, which could delay, prevent or impair our development or commercialization efforts.

We do not own or operate manufacturing facilities and have no plans to develop our own clinical or commercial- scale manufacturing capabilities. We rely, and expect to continue to rely, on third parties for the manufacture of our product candidates and related raw materials for clinical and preclinical development, as well as for commercial manufacture if any of our product candidates receive marketing approval. The facilities used by third-party manufacturers to manufacture our product candidates must be approved by the FDA and any comparable foreign regulatory authority pursuant to inspections that will be conducted after we submit an NDA to the FDA or any comparable submission to a foreign regulatory authority. We do not control the manufacturing process of, and are completely dependent on, third-party manufacturers for compliance with cGMP requirements for manufacture of products. If these third-party manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or any comparable foreign regulatory authority, they will not be able to secure and/or maintain regulatory approval for their manufacturing facilities. In addition, we have no control over the ability of third-party manufacturers to maintain adequate quality control, quality assurance and qualified personnel. If the FDA or any comparable foreign regulatory authority does not approve these facilities for the manufacture of our product candidates or if it withdraws any such approval in the future, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop, obtain regulatory approval for or market our product candidates, if approved. Our failure, or the failure of our third-party manufacturers, to comply with applicable regulations could result in sanctions being imposed on us, including clinical holds, fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, seizures or recalls of product candidates or products, operating restrictions and criminal prosecutions, any of which could significantly and adversely affect supplies of our products.

Our or a third party's failure to execute on our manufacturing requirements on commercially reasonable terms and in compliance with cGMP or other regulatory requirements could adversely affect our business in a number of ways, including:

- an inability to initiate clinical trials of our product candidates under development;
- delay in submitting regulatory applications, or receiving marketing approvals, for our product candidates;
- additional inspections by regulatory authorities of third-party manufacturing facilities or our manufacturing facilities;
- requirements to cease development or to recall batches of our product candidates; and
- in the event of approval to market and commercialize our product candidates, an inability to meet commercial demands for our product candidates or any other future product candidates.

In addition, we do not have any long-term commitments or supply agreements with our third-party manufacturers. We may be unable to establish any supply agreements with our third-party manufacturers or to do so on acceptable terms, which increases the risk of timely obtaining sufficient quantities of our product candidates or such quantities at an acceptable cost. Even if we are able to establish agreements with third- party manufacturers, reliance on third-party manufacturers entails additional risks, including:

- failure of third-party manufacturers to comply with regulatory requirements and maintain quality assurance;
- breach of the manufacturing agreement by the third party;
- failure to manufacture our product according to our specifications;
- failure to manufacture our product according to our schedule or at all;
- misappropriation of our proprietary information, including our trade secrets and know-how; and
- termination or nonrenewal of the agreement by the third party at a time that is costly or inconvenient for us.

Our product candidates and any products that we may develop may compete with other product candidates and products for access to manufacturing facilities. There are a limited number of manufacturers that operate under cGMP regulations and that might be capable of manufacturing for us, in particular due to the high potency of zotatifin. Any performance failure on the part of our existing or future manufacturers could delay clinical development or marketing approval, and any related remedial measures may be costly or time-consuming to

implement. We do not currently have arrangements in place for redundant supply or a second source for all required raw materials used in the manufacture of our product candidates. If our existing or future third-party manufacturers cannot perform as agreed, we may be required to replace such manufacturers and we may be unable to replace them on a timely basis or at all. In particular, any replacement of our manufacturers could require significant effort and expertise because there may be a limited number of qualified replacements. In some cases, the technical skills or technology required to manufacture our product candidates may be unique or proprietary to the original manufacturer and we may have difficulty transferring such skills or technology to another third-party and a feasible alternative may not exist. In addition, certain of our product candidates and our own proprietary methods have never been produced or implemented outside of our company, and we may therefore experience delays to our development programs if and when we attempt to establish new third-party manufacturing arrangements for these product candidates or methods.

Our current and anticipated future dependence upon others for the manufacture of our product candidates or products may adversely affect our future profit margins and our ability to commercialize any products that receive marketing approval on a timely and competitive basis.

Our reliance on third parties requires us to share our trade secrets, which increases the possibility that a competitor will discover them or that our trade secrets will be misappropriated or disclosed.

Because we currently rely on third parties to manufacture our product candidates and to perform quality testing, and because we collaborate with various organizations and academic institutions for the advancement of certain of our development programs, we must, at times, share our proprietary technology and confidential information, including trade secrets, with them. We seek to protect our proprietary technology, in part, by entering into confidentiality agreements and, if applicable, material transfer agreements, collaborative research agreements, consulting agreements or other similar agreements with our collaborators, advisors, employees and consultants prior to beginning research or disclosing proprietary information. These agreements typically limit the rights of the third parties to use or disclose our confidential information. Despite the contractual provisions employed when working with third parties, the need to share trade secrets and other confidential information increases the risk that such trade secrets become known by our competitors, are intentionally or inadvertently incorporated into the technology of others or are disclosed or used in violation of these agreements. Given that our proprietary position is based, in part, on our know-how and trade secrets and despite our efforts to protect our trade secrets, a competitor's discovery of our proprietary technology and confidential information or other unauthorized use or disclosure would impair our competitive position and may have a material adverse effect on our business, financial condition, results of operations and prospects.

We are dependent on the Pfizer Agreement for the discovery, development and commercialization of small molecule inhibitors of eIF4E. Pfizer may unilaterally terminate the agreement for convenience, which could materially and adversely affect our business.

In December 2019, we entered into the Pfizer Agreement for our earliest stage program, inhibitors of eIF4E, and Pfizer is currently conducting IND-enabling studies for this program. Under the Pfizer Agreement, we were responsible for initial research in collaboration with Pfizer, and Pfizer is responsible for all further development of our eIF4E development program, including submission of an IND and conducting all clinical development and commercialization activities. Pfizer primarily controls the development activities, pursuant to the terms of the Pfizer Agreement, and our lack of control over such activities could result in delays or other difficulties in the development and commercialization of our eIF4E program. Any dispute with Pfizer may result in the delay or termination of the development or commercialization of this program, and may result in costly litigation that diverts our management's attention and resources away from our day-to-day activities and which may adversely affect our business, financial condition, results of operation and prospects.

In addition, Pfizer can terminate the Pfizer Agreement (including for convenience), and in the event Pfizer terminates the Pfizer Agreement, we would no longer be eligible to receive any development funding, milestone payments, royalty payments and other benefits under the agreement. In addition, any decision by Pfizer to terminate the Pfizer agreement may negatively impact public perception of our product candidates, which could adversely affect the market price of our Common Stock. We cannot provide any assurance with respect to the success of the collaboration with Pfizer. Any of the foregoing events could have a materially adverse effect on our on our business, financial condition, results of operations and prospects.

We may seek to enter into additional collaborations, licenses and other similar arrangements and may not be successful in doing so, and even if we are, we may relinquish valuable rights and may not realize the benefits of such relationships.

We may seek to enter into additional collaborations, joint ventures, licenses and other similar arrangements for the development or commercialization of our product candidates, due to capital costs required to develop or commercialize the product candidate or manufacturing constraints. Such collaborative discovery efforts may not yield additional development or product candidates for our pipeline. We may not be successful in our efforts to establish or maintain such collaborations for our product candidates because our research and development pipeline may be insufficient, our product candidates may be deemed to be at too early of a stage of development for collaborative effort or third parties may not view our product candidates as having the requisite potential to demonstrate safety and efficacy or significant commercial opportunity. In addition, we face significant competition in seeking appropriate strategic partners, and the negotiation process can be time-consuming and complex. We may have to relinquish valuable rights to our future revenue streams, research programs or product candidates, or grant licenses on terms that may not be favorable to us, as part of any such arrangement, and such arrangements may restrict us from entering into additional agreements with other potential collaborators. We cannot be certain that, following a collaboration, license or strategic transaction, we will achieve an economic benefit that justifies such transaction.

Even if we are successful in our efforts to establish such collaborations, the terms that we agree upon may not be favorable to us, and we may not be able to maintain such collaborations if, for example, the development or approval of a product candidate is delayed, the safety of a product candidate is questioned or the sales of an approved product candidate are unsatisfactory.

In addition, any potential future collaborations may be terminable by our strategic partners, and we may not be able to adequately protect our rights under these agreements. Furthermore, strategic partners may negotiate for certain rights to control decisions regarding the development and commercialization of our product candidates, if approved, and may not conduct those activities in the same manner as we do. Any termination of collaborations we enter into in the future, or any delay in entering into collaborations related to our product candidates, could delay the development and commercialization of our product candidates and reduce their competitiveness if they reach the market, which could have a material adverse effect on our business, financial condition and results of operations.

Risks Related to Commercialization of Our Product Candidates

Even if we receive regulatory approval for any product candidate, we will be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense.

Any regulatory approvals that we or our existing or future collaborators may receive for our product candidates will require the submission of reports to regulatory authorities and surveillance to monitor the safety and efficacy of the product, may contain significant limitations related to use restrictions for specified age groups, warnings, precautions or contraindications, and may include burdensome post-approval study or risk management requirements. For example, the FDA may require a REMS as a condition of approval of our product candidates, which could include 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. In addition, if the FDA or a comparable foreign regulatory authority approves our product candidates, the manufacturing processes, labeling, packaging, distribution, adverse event reporting, storage, advertising, promotion, import, export and recordkeeping for our products will be subject to extensive and ongoing regulatory requirements. These requirements include submissions of safety and other post-marketing information and reports, registration, as well as continued compliance with cGMP and GCP requirements for any clinical trials that we conduct post-approval. Manufacturers of approved products and their facilities are subject to continual review and periodic, unannounced inspections by the FDA and other regulatory authorities for compliance with cGMP regulations and standards. Later discovery of previously unknown problems with our products, 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 products, withdrawal of the product from the market or voluntary or mandatory product recalls;
- restrictions on product distribution or use, or requirements to conduct post-marketing studies or clinical trials;

- fines, restitutions, disgorgement of profits or revenue, warning letters, untitled 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 products; and
- injunctions or the imposition of civil or criminal penalties.

The occurrence of any event or penalty described above may inhibit our ability to commercialize our products and generate revenue and could require us to expend significant time and resources in response and could generate negative publicity.

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 also cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States or abroad. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may be subject to enforcement action 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.

If our product candidates are approved and we are found to have improperly promoted off-label uses of those products, we may become subject to significant liability. The FDA and other regulatory agencies strictly regulate the promotional claims that may be made about prescription products, such as our product candidates, if approved. In particular, a product may not be promoted for uses that are not approved by the FDA or such other regulatory agencies as reflected in the product's approved labeling. If we receive marketing approval for a product candidate, physicians may nevertheless prescribe it to their patients in a manner that is inconsistent with the approved label. If we are found to have promoted such off-label uses, we may become subject to significant liability. The U.S. 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. The government has also required that companies enter into consent decrees or imposed permanent injunctions under which specified promotional conduct is changed or curtailed. If we cannot successfully manage the promotion of our product candidates, if approved, we could become subject to significant liability, which would materially adversely affect our business and financial condition.

The commercial success of our product candidates, if approved, will depend upon the degree of market acceptance of such product candidates by physicians, patients, healthcare payors and others in the medical community.

Our product candidates, if approved, may not be commercially successful. Even if any of our product candidates receive regulatory approval, they may not gain market acceptance among physicians, patients, healthcare payors or the medical community. The commercial success of any of our current or future product candidates will depend significantly on the broad adoption and use of the resulting product by physicians and patients for approved indications. The degree of market acceptance of our products will depend on a number of factors, including:

- demonstration of clinical efficacy and safety compared to other more-established products;
- the indications for which our product candidates are approved;
- the limitation of our targeted patient population and other limitations or warnings contained in any FDA-approved labeling;
- acceptance of a new drug for the relevant indication by healthcare providers and their patients;
- the pricing and cost-effectiveness of our products, as well as the cost of treatment with our products in relation to alternative treatments and therapies;c

• our ability to obtain and maintain sufficient third-party coverage and adequate reimbursement from government healthcare programs, including Medicare and Medicaid, private health insurers and other third- party payors;

• the willingness of patients to pay all, or a portion of, out-of-pocket costs associated with our products in the absence of sufficient third-party coverage and adequate reimbursement;

• any restrictions on the use of our products, and the prevalence and severity of any adverse effects;

• potential product liability claims;

• the timing of market introduction of our products as well as competitive drugs;

• the effectiveness of our or any of our current or potential future collaborators' sales and marketing strategies; and

• unfavorable publicity relating to the product.

If any product candidate is approved but does not achieve an adequate level of acceptance by physicians, hospitals, healthcare payors or patients, we may not generate sufficient revenue from that product and may not become or remain profitable. Our efforts to educate the medical community and third-party payors regarding the benefits of our products may require significant resources and may never be successful.

The successful commercialization of our product candidates, if approved, will depend in part on the extent to which governmental authorities and health insurers establish coverage, adequate reimbursement levels and favorable pricing policies. Failure to obtain or maintain coverage and adequate reimbursement for our products could limit our ability to market those products and decrease our ability to generate revenue.

The availability of coverage and the adequacy of reimbursement by governmental healthcare programs such as Medicare and Medicaid, private health insurers and other third-party payors are essential for most patients to be able to afford prescription medications such as our product candidates, if approved. Our ability to achieve coverage and acceptable levels of reimbursement for our products by third-party payors will have an effect on our ability to successfully commercialize those products. Accordingly, we will need to successfully implement a coverage and reimbursement strategy for any approved product candidate. Even if we obtain coverage for a given product by a third-party payor, the resulting reimbursement payment rates may not be adequate or may require co-payments that patients find unacceptably high. For products administered under the supervision of a physician, obtaining coverage and adequate reimbursement may be particularly difficult because of the higher prices often associated with such drugs. Additionally, separate reimbursement for the product itself or the treatment or procedure in which the product is used may not be available, which may impact physician utilization. We cannot be sure that coverage and reimbursement in the United States, the European Union or elsewhere will be available for any product that we may develop, and any reimbursement that may become available may be decreased or eliminated in the future.

Third-party payors increasingly are challenging prices charged for biopharmaceutical products and services, and many third-party payors may refuse to provide coverage and reimbursement for particular drugs when an equivalent generic drug or a less expensive therapy is available. It is possible that a third-party payor may consider our products as substitutable and only offer to reimburse patients for the less expensive product. Even if we are successful in demonstrating improved efficacy or improved convenience of administration with our products, pricing of existing drugs may limit the amount we will be able to charge for our products. These payors may deny or revoke the reimbursement status of a given product or establish prices for new or existing marketed products at levels that are too low to enable us to realize an appropriate return on our investment in product development. If reimbursement is not available or is available only at limited levels, we may not be able to successfully commercialize our products and may not be able to obtain a satisfactory financial return on products that we may develop.

There is significant uncertainty related to third-party payor coverage and reimbursement of newly approved products and products added to existing therapies as combinations. In the United States, third-party payors, including private and governmental payors, such as the Medicare and Medicaid programs, play an important role in determining the extent to which new drugs will be covered. Some third-party payors may require pre-approval of coverage for new or innovative devices or drug therapies before they will reimburse healthcare providers who use such therapies. It is difficult to predict at this time what third-party payors will decide with respect to the coverage and reimbursement for our products.

Obtaining and maintaining reimbursement status is time-consuming, costly and uncertain. The Medicare and Medicaid programs increasingly are used as models for how private payors and other governmental payors develop their coverage and reimbursement policies for drugs. However, no uniform policy for coverage and reimbursement for products exists among third-party payors in the United States. Therefore, coverage and reimbursement for products can differ significantly from payor to payor. As a result, the coverage determination process is often a time-consuming and costly process that will require us to provide scientific and clinical support for the use of our products to each payor separately, with no assurance that coverage and adequate reimbursement will be applied consistently or obtained in the first instance. Furthermore, rules and regulations regarding reimbursement change frequently, in some cases at short notice, and we believe that changes in these rules and regulations are likely.

Outside the United States, international operations are generally subject to extensive governmental price controls and other market regulations, and we believe the increasing emphasis on cost-containment initiatives in Europe and other countries has and will continue to put pressure on the pricing and usage of our products. In many countries, the prices of medical products are subject to varying price control mechanisms as part of national health systems. Other countries allow companies to fix their own prices for medical products 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 products. Accordingly, in markets outside the United States, the reimbursement for our products may be reduced compared with the United States and may be insufficient to generate commercially reasonable revenue and profits.

Moreover, increasing efforts by governmental and third-party payors in the United States and abroad to cap or reduce healthcare costs may cause such organizations to limit both coverage and the level of reimbursement for newly approved products and, as a result, they may not cover or provide adequate payment for our products. We expect to experience pricing pressures in connection with the sale of any of our products due to the trend toward managed healthcare, the increasing influence of health maintenance organizations and additional legislative changes. The downward pressure on healthcare costs in general, particularly prescription drugs and surgical procedures and other treatments, has become very intense. As a result, increasingly high barriers are being erected to the entry of new products.

We face significant competition from entities that have developed or may develop product candidates for cancer, including companies developing novel treatments and technology platforms. If our competitors develop technologies or product candidates more rapidly than we do or their technologies are more effective, our business and our ability to develop and successfully commercialize products may be adversely affected.

The biotechnology and biopharmaceutical industries are characterized by rapid advancing technologies, intense competition and a strong emphasis on proprietary and novel products and product candidates. Our competitors have developed, are developing or may develop products, product candidates and processes competitive with our product candidates, including products that may also be proposed to be administered in combination with PD-(L)1 inhibitors. Any product candidates that we successfully develop and commercialize will compete with existing therapies and new therapies that may become available in the future. We believe that a significant number of products are currently under development, and may become commercially available in the future, for the treatment of indications for which we may attempt to develop product candidates. In particular, there is intense competition in the oncology field. Our competitors include larger and better-funded pharmaceutical, biopharmaceutical, biotechnological and therapeutics companies. Moreover, we may also compete with universities and other research institutions who may be active in oncology research and could be in direct competition with us. We also compete with these organizations to recruit management, scientists and clinical development personnel, which could negatively affect our level of expertise and our ability to execute our business plan. We will also face competition in establishing clinical trial sites, enrolling subjects for clinical trials and in identifying and in-licensing new product candidates. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies.

If any of our product candidates is approved in oncology indications such as NSCLC or breast cancer, they will compete with small molecule therapies, biologics, cell-based therapies and traditional chemotherapy. In addition to competing with other therapies targeting similar indications, there are numerous other companies and academic institutions focused on similar targets as our product candidates and/or different scientific approaches to treating the same indications. These companies include, among others, AUM Biosciences, Boehringer Ingelheim GmbH, Eli Lilly & Company, Exelixis, Novartis AG, and Selvita, Inc., with programs targeting MNK. Companies with FDA-approved PD-1 or PD-L1 inhibitors include AstraZeneca plc, Bristol-Myers Squibb Co., Merck & Co., Inc., Pfizer Inc./Merck KGaA, Regeneron Pharmaceuticals, Inc. and Roche Group/Genentech, Inc. In addition, a number of companies are actively testing checkpoint inhibitors in combination with novel immuno-modulatory agents including antibody therapeutics, small molecule inhibitors, oncolytic viruses, cancer vaccines and cell-based therapies.

Many of our competitors have significantly greater financial, technical, manufacturing, marketing, sales and supply resources or experience than we do. If we successfully obtain approval for any product candidate, we will face competition based on many different factors, including the safety and effectiveness of our products, the ease with which our products can be administered and the extent to which patients accept relatively new routes of administration, the timing and scope of regulatory approvals for these products, the availability and cost of manufacturing, marketing and sales capabilities, price, reimbursement coverage and patent position. Competing products could present superior treatment alternatives, including by being more effective, safer, more convenient, less expensive or marketed and sold more effectively than any products we may develop. Competitive products approaches may make any products we develop obsolete or noncompetitive before we recover the expense of developing and commercializing our product candidates. If we are unable to compete effectively, our opportunity to generate revenue from the sale of our products we may develop, if approved, could be adversely affected.

The market opportunities for our product candidates may be limited to patients who are ineligible for or have failed prior treatments and may be small or different from our estimates.

Cancer therapies are defined by lines of therapy as well as by treatment-naïve or previously-treated status patients. Often the initial approval for a new therapy is in later lines and subsequent approval in an earlier line may not be feasible. 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, including targeted therapy, immunotherapy, chemotherapy, hormone therapy, surgery or a combination of these, proves unsuccessful, second line therapy may be administered. Second line therapies often consist of additional chemotherapy, radiation, antibody drugs, tumor targeted small molecules or a combination of these. Third line therapies can include bone marrow transplantation, antibody and small molecule targeted therapies, more invasive forms of surgery and new technologies. In markets with approved therapies, there is no guarantee that our product candidates, even if approved, would be approved for second line or first line therapy. This could limit our potential market opportunity. In addition, we may have to conduct additional clinical trials prior to gaining approval for second line or first line therapy.

Our projections of both the number of people who have the cancers we are targeting, as well as the subset of people with these cancers in a position to receive later stage 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 the scientific literature, publicly available clinical molecular reports, patient foundations or market research, and may prove to be incorrect. Further, new trials or information may change the estimated incidence or prevalence of these cancers. The number of patients in the United States and other major markets and elsewhere may turn out to be lower than expected, patients may not be otherwise amenable to treatment with our products or new patients may become increasingly difficult to identify or gain access to, all of which would adversely affect our results of operations and our business. Further, even if we obtain significant market share for our product candidates, because some of our potential target populations are very small, we may not achieve profitability in the future.

We currently have no marketing and sales organization and have no experience as a company in commercializing products, and we may have to invest significant resources to develop these capabilities. If we are unable to establish marketing and sales capabilities or enter into agreements with third parties to market and sell our products, we may not be able to generate product revenue.

We have no internal sales, marketing or distribution capabilities, nor have we commercialized a product. If any of our product candidates ultimately receives regulatory approval, we must build a marketing and sales organization with technical expertise and supporting distribution capabilities to commercialize each such product in major markets, which will be expensive and time-consuming, or collaborate with third parties that have direct sales forces and established distribution systems, either to augment our own sales force and distribution systems or in lieu of our own sales force and distribution systems. We have no prior experience as a company in the marketing, sale and distribution of biopharmaceutical products and there are significant risks involved in building and managing a sales organization, including our ability to hire, retain and incentivize qualified individuals, generate sufficient sales leads, provide adequate training to sales and marketing personnel and effectively manage a geographically dispersed sales and marketing team. Any failure or delay in the development of our internal sales, marketing and distribution capabilities would adversely impact the commercialization of these products. We may not be able to enter into collaborations or hire consultants or external service providers to assist us in sales, marketing and distribution functions on acceptable financial terms, or at all. In addition, our product revenue and our profitability, if any, may be lower if we rely on third parties for these functions than if we were to market, sell and distribute any products that we develop ourselves. We likely will have little control over such third parties, and any of them may fail to devote the necessary resources and attention to sell and market our products effectively. If we are not successful in commercializing our products, either on our own or through arrangements with one or more third parties, we may not be able to generate any future product revenue and we would incur significant additional losses.

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

Our future growth may depend, in part, on our ability to develop and commercialize our product candidates in foreign markets. We are not permitted to market or promote any of our product candidates before we receive regulatory approval from applicable regulatory authorities in foreign markets, and we may never receive such regulatory approvals for any of our product candidates. To obtain separate regulatory approval in many other countries we must comply with numerous and varying regulatory requirements regarding safety and efficacy and governing, among other things, clinical trials, commercial sales, pricing and distribution of our product candidates. If we obtain regulatory approval of our product candidates and ultimately commercialize our products in foreign markets, we would be subject to additional risks and uncertainties, including:

- different regulatory requirements for approval of drugs in foreign countries;
- reduced protection for intellectual property rights;
- the existence of additional third-party patent rights of potential relevance to our business;
- unexpected changes in tariffs, trade barriers and regulatory requirements;
- economic weakness, including inflation, or political instability in particular foreign economies and markets;
- compliance with tax, employment, immigration and labor laws for employees living or traveling abroad;
- foreign currency fluctuations, which could result in increased operating expenses and reduced revenue, and other obligations incident to doing business in another country;
- foreign reimbursement, pricing and insurance regimes;
- workforce uncertainty in countries where labor unrest is common;
- production shortages resulting from any events affecting raw material supply or manufacturing capabilities abroad; and
- business interruptions resulting from geopolitical actions, including war and terrorism, or natural disasters including earthquakes, typhoons, floods and fires.

Risks Related to Our Business Operations and Industry

Our operating results may fluctuate significantly, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations or any guidance we may provide.

Our quarterly and annual operating results may fluctuate significantly, which makes it difficult for us to predict our future operating results. These fluctuations may occur due to a variety of factors, many of which are outside of our control, including, but not limited to:

- the timing and cost of, and level of investment in, research, development, regulatory approval and commercialization activities relating to our product candidates, which may change from time to time;
- the timing and success or failure of preclinical studies or clinical trials for our product candidates or competing product candidates, or any other change in the competitive landscape of our industry, including consolidation among our competitors or partners;
- the success of our existing collaboration with Pfizer and any potential additional collaboration, licensing or similar arrangements;
- coverage and reimbursement policies with respect to our product candidates, if approved, and potential future drugs that compete with our products;
- the cost of manufacturing our product candidates, which may vary depending on the quantity of production and the terms of our agreements with third-party manufacturers;

• expenditures that we will or may incur to acquire, develop or commercialize additional product candidates and technologies or other assets;

• the level of demand for any approved products, which may vary significantly and be difficult to predict; and

• future accounting pronouncements or changes in our accounting policies;

The cumulative effects of these factors could result in large fluctuations and unpredictability in our quarterly and annual operating results. As a result, comparing our operating results on a period-to-period basis may not be meaningful. Investors should not rely on our past results as an indication of our future performance.

This variability and unpredictability could also result in our failing to meet the expectations of industry or financial analysts or investors for any period. If our revenue or operating results fall below the expectations of analysts or investors or below any forecasts we may provide to the market, or if the forecasts we provide to the market are below the expectations of analysts or investors, the price of our common stock could decline substantially. Such a stock price decline could occur even when we have met any previously publicly stated revenue or earnings guidance we may provide.

Our success is dependent on our ability to attract and retain highly qualified management and other clinical and scientific personnel.

Our success depends in part on our continued ability to attract, retain, manage, and motivate highly qualified management, clinical, and scientific personnel, and we face significant competition for experienced personnel. We are highly dependent upon our senior management, as well as our senior scientists and other members of our management team. The loss of services of any of these individuals could delay or prevent the successful development of our product pipeline, initiation, or completion of our clinical trials and preclinical studies or the commercialization of our product candidates. Although we have executed employment agreements or offer letters with each member of our senior management team, these agreements are terminable at will with or without notice and, therefore, we may not be able to retain their services as expected. We do not currently maintain “key person” life insurance on the lives of our executives or any of our employees. This lack of insurance means that we may not have adequate compensation for the loss of the services of these individuals.

We will need to expand and effectively manage our managerial, operational, financial, and other resources in order to successfully pursue our clinical development and commercialization efforts. We may not be successful in maintaining our unique company culture and continuing to attract or retain qualified management, clinical, and scientific personnel in the future due to the intense competition for qualified personnel among biopharmaceutical, biotechnology, and other businesses, particularly in the San Diego area. Our industry has experienced a high rate of turnover of management personnel in recent years. If we are not able to attract, integrate, retain, and motivate necessary personnel to accomplish our business objectives, we may experience constraints that will significantly impede the achievement of our development objectives, our ability to raise additional capital, and our ability to implement our business strategy.

We may encounter difficulties in managing our growth and expanding our operations successfully.

As of December 31, 2023, we had 15 full-time employees. As we continue development and pursue the potential commercialization of our product candidates, as well as function as a public company, we will need to expand our financial, development, regulatory, manufacturing, marketing and sales capabilities or contract with third parties to provide these capabilities for us. As our operations expand, we expect that we will need to manage additional relationships with various strategic partners, suppliers and other third parties. Our future financial performance and our ability to develop and commercialize our product candidates and to compete effectively will depend, in part, on our ability to manage any future growth effectively.

Our relationships with prescribers, purchasers, third-party payors and patients will be subject to applicable anti-kickback, fraud and abuse and other health care laws and regulations, which could expose us to criminal sanctions, civil penalties, contractual damages, reputational harm and diminished profits and future earnings.

Our business operations and current and future arrangements with investigators, healthcare professionals, consultants, third-party payors, patient organizations and customers expose us to broadly applicable foreign, federal and state fraud and abuse and other healthcare and privacy laws and regulations. These laws may constrain the business or financial arrangements and relationships through which we conduct our operations, including how we research, market, sell and distribute any products for which we obtain marketing approval. Such laws include:

• the federal Anti-Kickback Statute, which prohibits, among other things, persons or entities from knowingly and willfully soliciting, offering, receiving or providing any remuneration (including any kickback, bribe or certain rebates), directly or indirectly, overtly or covertly, in cash or in kind, in return for, either the referral of an individual or the purchase, lease, or order, or arranging for or recommending the purchase, lease, or order of any good, facility, item or service, for which payment may be made, in whole or in part, under a federal healthcare program such as Medicare and Medicaid. A person or entity does not need to have actual knowledge of the federal Anti- Kickback Statute or specific intent to violate it in order to have committed a violation;

• the federal false claims laws, including the civil False Claims Act, and civil monetary penalties laws, which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, to the federal government, claims for payment or approval that are false or fraudulent, knowingly making, using or causing to be made or used, a false record or statement material to a false or fraudulent claim, or from knowingly making or causing to be made a false statement to avoid, decrease or conceal an obligation to pay money to the federal government. In addition, the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the civil False Claims Act;

• the federal Health Insurance Portability and Accountability Act of 1996, which imposes criminal and civil liability for, among other things, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, or knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false statement, in connection with the delivery of, or payment for, healthcare benefits, items or services. Similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;

• the federal Physician Payments Sunshine Act, which requires certain manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program (with certain exceptions) to report annually to the Centers for Medicare & Medicaid Services ("CMS"), information related to payments and other "transfers of value" made to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors), certain other non-physician practitioners (physician assistants, nurse practitioners, clinical nurse specialists, certified nurse anesthetists, anesthesiology assistants and certified nurse-midwives) 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, may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers; some state laws require biotechnology companies to comply with the biotechnology industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government and may require certain biotechnology companies to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures; some state laws that require biotechnology companies to report information on the pricing of certain drug products; and some state and local laws require the registration or pharmaceutical sales representatives.

Efforts to ensure that our current and future business arrangements with third parties will comply with applicable healthcare and privacy laws and regulations will involve ongoing substantial costs. It is possible that governmental authorities will conclude that our business practice, including certain scientific advisory board arrangements with physicians who are compensated in the form of stock or stock options as compensation for services provided may 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 governmental regulations that may apply to us, we may be subject to significant penalties, including civil, criminal and administrative penalties, damages, fines, disgorgement, imprisonment, exclusion from participation in government funded healthcare programs, including Medicare and Medicaid, integrity oversight and reporting obligations, contractual damages, reputational harm, diminished profits and future earnings and the curtailment or restructuring of our operations. Defending against any such actions can be costly, time-consuming and may require significant financial and personnel resources. Therefore, even if we are successful in defending against any such actions that may be brought against us, our business may be impaired. Further, 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 significant criminal, civil or administrative sanctions, including exclusions from government funded healthcare program.

Recently enacted legislation, future legislation and healthcare reform measures may increase the difficulty and cost for us to obtain marketing approval for and commercialize our product candidates and may affect the prices we may set.

In the United States and some foreign jurisdictions, there have been, and we expect there will continue to be, a number of legislative and regulatory changes to the healthcare system, including cost-containment measures that may reduce or 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 example, in March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, each as amended (collectively known as the “ACA”), was enacted in the United States. Among the provisions of the ACA of importance to our potential product candidates, the ACA established an annual, nondeductible fee on any entity that manufactures or imports specified branded prescription drugs and biologic agents; extended manufacturers’ Medicaid rebate liability to covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations; expanded eligibility criteria for Medicaid programs; expanded the entities eligible for discounts under the Public Health Service pharmaceutical pricing program; increased the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program; created a new Medicare Part D coverage gap discount program; established a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in and conduct comparative clinical effectiveness research, along with funding for such research; and established a Center for Medicare and Medicaid Innovation at CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending.

Since its enactment, there have been executive, judicial and Congressional challenges to certain aspects of the ACA. On June 17, 2021, the U.S. Supreme Court dismissed the most recent judicial challenge to the ACA brought by several states without specifically ruling on the constitutionality of the ACA.

In addition, other legislative changes have been proposed and adopted since the ACA was enacted. On August 2, 2011, the Budget Control Act of 2011 was signed into law, which, among other things, resulted in reductions to Medicare payments to providers, which went into effect on April 1, 2013 and, due to subsequent legislative amendments to the statute, will remain in effect through 2032, with the exception of a temporary suspension from May 1, 2020 through March 31, 2022, unless additional Congressional action is taken. In addition, on January 2, 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, further reduced Medicare payments to several providers, including hospitals, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

Further, there has been heightened governmental scrutiny in the United States of pharmaceutical pricing practices in light of the rising cost of prescription drugs. Such scrutiny has resulted in several recent 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, on March 11, 2021, the American Rescue Plan Act of 2021 was signed into law, which eliminated the statutory Medicaid drug rebate cap for single source and innovator multiple source drugs, beginning January 1, 2024. The rebate was previously capped at 100% of a drug's average manufacturer price. Most recently, on August 16, 2022, the Inflation Reduction Act of 2022, or IRA, was signed into law. Among other things, the IRA requires manufacturers of certain drugs to engage in price negotiations with Medicare (beginning in 2026), with prices that can be negotiated subject to a cap; imposes rebates under Medicare Part B and Medicare Part D to penalize price increases that outpace inflation (first due in 2023); and replaces the Part D coverage gap discount program with a new discounting program (beginning in 2025). The IRA permits the Secretary of the Department of Health and Human Services (HHS) to implement many of these provisions through guidance, as opposed to regulation, for the initial years. HHS has and will continue to issue and update guidance as these programs are implemented. On August 29, 2023, HHS announced the list of the first ten drugs that will be subject to price negotiations, although the Medicare drug price negotiation program is currently subject to legal challenges. For that and other reasons, it is currently unclear how the IRA will be effectuated.

At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. Legally mandated price controls on payment amounts by third-party payors or other restrictions could harm our business, results of operations, financial condition and prospects. In December 2020, the U.S. Supreme Court held unanimously that federal law does not preempt the states' ability to regulate pharmaceutical benefit managers, ("PBMs") and other members of the health care and pharmaceutical supply chain, an important decision that is expected to lead to further and more aggressive efforts by states in this area. In addition, regional healthcare authorities and individual hospitals are increasingly using bidding procedures to determine what pharmaceutical products and which suppliers will be included in their prescription drug and other healthcare programs. 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, results of operations, financial condition and prospects.

We expect that the ACA, these new laws and other healthcare reform measures that may be adopted in the future may result in additional reductions in Medicare and other healthcare funding, more rigorous coverage criteria, new payment methodologies and additional downward pressure on the price that we receive for any approved product. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability or commercialize our product candidates, if approved.

Actual or perceived failures to comply with applicable data protection, privacy and security laws, regulations, standards and other requirements could adversely affect our business, results of operations, and financial condition.

The global data protection landscape is rapidly evolving, and we are or may become subject to numerous state, federal and foreign laws, requirements and regulations governing the collection, use, disclosure, retention, and security of personal information. Implementation standards and enforcement practices are likely to remain uncertain for the foreseeable future, and we cannot yet determine the impact future laws, regulations, standards, or perception of their requirements may have on our business. This evolution may create uncertainty in our business, affect our ability to operate in certain jurisdictions or to collect, store, transfer use and share personal information, necessitate the acceptance of more onerous obligations in our contracts, result in liability or impose additional costs on us. Each of these laws is subject to varying interpretations by courts and government agencies, creating complex compliance issues. If we fail to comply with applicable laws and regulations we may face government investigations and/or enforcement actions, fines, civil or criminal penalties, private litigation or adverse publicity that could adversely affect our business, financial condition and results of operation. For example, we may be subject to criminal penalties if we knowingly obtain or disclose individually identifiable health information from a covered entity in a manner that is not authorized or permitted by the Health Insurance Portability and Accountability Act, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, and regulations implemented thereunder or applicable state laws.

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

We face an inherent risk of product liability as a result of the clinical trials of our product candidates and will face an even greater risk if we commercialize our product candidates. For example, we may be sued if our product candidates allegedly cause injury or are found to be otherwise unsuitable during product testing, manufacturing, marketing or sale. In addition, we may be subject to liability based on the actions of our existing or future collaborators in connection with their development of product candidates. 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 candidate, negligence, strict liability and a breach of warranties. Claims may be brought against us by clinical trial participants, patients or others using, administering or selling products that may be approved in the future. 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 or cease the commercialization of our products. Even a successful defense would require significant financial and management resources. Regardless of the merits or eventual outcome, liability claims may result in:

- decreased demand for our products;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial participants;
- costs to defend the related litigation;
- a diversion of our management's time and our resources;
- substantial monetary awards to trial participants or patients;
- product recalls, withdrawals or labeling, marketing or promotional restrictions;
- significant negative financial impact;
- the inability to commercialize our product candidates; and
- a decline in our stock price.

We currently hold approximately $5 million in product liability insurance coverage in the aggregate, with no per occurrence limit. We may need to increase our insurance coverage as we expand our clinical trials or if we commence commercialization of our product candidates. Insurance coverage is increasingly expensive. Our inability to obtain and retain sufficient product liability insurance at an acceptable cost to protect against potential product liability claims could prevent or inhibit the commercialization of our product candidates. Although we will maintain such insurance, any claim that may be brought against us could result in a court judgment or settlement in an amount that is not covered, in whole or in part, by our insurance or that is in excess of the limits of our insurance coverage. Our insurance policies will 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.

Our insurance policies are expensive and only protect us from some business risks, which will leave us exposed to significant uninsured liabilities.

We do not carry insurance for all categories of risk that our business may encounter. Some of the policies we currently maintain include property, general liability, employment benefits liability, business automobile, workers' compensation, products liability, malicious invasion of our electronic systems, clinical trials, and directors' and officers' employment practices and fiduciary liability insurance. We do not know, however, if we will be able to maintain insurance with adequate levels of coverage. No assurance can be given that an insurance carrier will not seek to cancel or deny coverage after a claim has occurred. Any significant uninsured liability may require us to pay substantial amounts, which would adversely affect our financial position and results of operations.

We and any of our current or future collaborators will be required to report to regulatory authorities if any of our approved products cause or contribute to adverse medical events, and any failure to do so would result in sanctions that would materially harm our business.

If we or any of our current or potential future collaborators are successful in commercializing our products, the FDA and foreign regulatory authorities would require that we and such collaborators report certain information about adverse medical events if those products may have caused or contributed to those adverse events. The timing of our obligation to report would be triggered by the date we become aware of the adverse event as well as the nature of the event. We and any of our potential future collaborators or CROs may fail to report adverse events within the prescribed timeframe. If we or any of current or potential future collaborators or CROs fail to comply with such reporting obligations, the FDA or a foreign regulatory authority could take action, including criminal prosecution, the imposition of civil monetary penalties, seizure of our products or delay in approval or clearance of future products.

Our business and operations may suffer in the event of information technology system failures, cyberattacks or deficiencies in our cybersecurity.

In the ordinary course of business, we collect, store, transmit and otherwise process large amounts of data including, without limitation, intellectual property, proprietary business information, clinical trial data and personal information, or collectively, Confidential Information. Despite the implementation of security measures, our information technology systems (including infrastructure) and those of our current and any future CROs and other contractors, consultants, third-party service providers and collaborators are vulnerable to attack, damage, and interruption from computer viruses, cybersecurity threats (such as denial-of-service attacks, ransomware, supply chain attacks, cyberattacks or cyber intrusions over the Internet, misconfigurations, "bugs" or other vulnerabilities, hacking, phishing and other social engineering attacks), unauthorized access or use, natural disasters, terrorism, war and telecommunication and electrical failures. Our systems are also subject to compromise from internal threats, such as theft, misuse, unauthorized access or other improper or accidental actions by employees, vendors and other third parties with otherwise legitimate access to our systems. Third parties may also attempt to fraudulently induce our employees and contractors into disclosing sensitive information such as usernames, passwords or other information, or otherwise compromise the security of our electronic systems, networks, and/or physical facilities in order to gain access to our data. Additionally, due to the continued hybrid working environment, we may also face increased cybersecurity risks due to our reliance on internet technology and the number of our employees who are working remotely, which may create additional opportunities for cybercriminals to exploit vulnerabilities.

Given the unpredictability of the timing, nature and scope of information technology disruptions, there can be no assurance that any security procedures and controls that we or our third-party partners and service providers have implemented will be sufficient to prevent cyberattacks from occurring. The latency of a compromise is often measured in months, but could be years, and we may not be able to detect a compromise in a timely manner. New techniques may not be identified until they are launched against a target, and we may be unable to anticipate these techniques or detect an incident, assess its severity or impact, react or appropriately respond in a timely manner or implement adequate preventative measures, resulting in potential data loss or other damage to our information technology systems. Even if identified, we may be unable to adequately investigate or remediate incidents or breaches due to attackers increasingly using tools and techniques that are designed to circumvent controls, to avoid detection, and to remove or obfuscate forensic evidence.

While we do not believe that we have experienced any significant system failure, accident or security breach to date, if a security breach were to occur and cause interruptions in our operations or result in the unauthorized disclosure of or access to personally identifiable information or individually identifiable health information (potentially violating certain privacy laws), it could result in a material disruption of our development programs and our business operations, whether due to a loss of our trade secrets or other similar disruptions. Some of the federal, state and foreign government requirements include obligations of companies to notify individuals of security breaches involving particular personally identifiable information, which could result from breaches experienced by us or by our vendors, contractors, or organizations with which we have formed strategic relationships. Any security breach or other incident, whether actual or perceived, could impact our reputation, cause us to incur significant costs, including legal expenses, harm customer confidence, hurt our expansion into new markets, cause us to incur remediation costs, or cause us to lose existing customers. For example, the loss of clinical trial data from clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or

reproduce the data. We also rely on third parties to manufacture our product candidates, and similar events relating to their computer systems could also have a material adverse effect on our business. To the extent that any actual or perceived disruption or security breach affects our systems (or those of our third-party collaborators, service providers, contractors or consultants) or were to result in a loss of or accidental, unlawful or unauthorized access to, use of, release of, or other processing of Confidential Information, or damage to, our data or applications, or inappropriate disclosure of Confidential Information, we could incur liability, the further development and commercialization of our product candidates could be delayed, and we could be subject to significant fines, penalties or liabilities for any noncompliance with certain privacy and security laws. We maintain cyber liability insurance; however, this insurance may not be sufficient to cover the financial, legal, business or reputational losses that may result from an interruption or breach of our systems.

Our business could be affected by litigation, government investigations and enforcement actions.

We currently operate in a number of jurisdictions in a highly regulated industry and we could be subject to litigation, government investigation and enforcement actions on a variety of matters in the United States. or foreign jurisdictions, including, without limitation, intellectual property, regulatory, product liability, environmental, whistleblower, false claims, privacy, anti-kickback, anti-bribery, securities, commercial, employment and other claims and legal proceedings which may arise from conducting our business. Any determination that our operations or activities are not in compliance with existing laws or regulations could result in the imposition of fines, civil and criminal penalties, equitable remedies, including disgorgement, injunctive relief and/or other sanctions against us, and remediation of any such findings could have an adverse effect on our business operations.

Legal proceedings, government investigations and enforcement actions can be expensive and time-consuming. An adverse outcome resulting from any such proceeding, investigations or enforcement actions could result in significant damages awards, fines, penalties, exclusion from the federal healthcare programs, healthcare debarment, injunctive relief, product recalls, reputational damage and modifications of our business practices, which could have a material adverse effect on our business and results of operations.

Our employees and independent contractors, including principal investigators, CROs, consultants and vendors, may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements.

We are exposed to the risk that our employees and independent contractors, including principal investigators, CROs, consultants and vendors may engage in misconduct or other illegal activity. Misconduct by these parties could include intentional, reckless and/or negligent conduct or disclosure of unauthorized activities to us that violate: (i) the laws and regulations of the FDA and other similar regulatory requirements, including those laws that require the reporting of true, complete and accurate information to such authorities, (ii) manufacturing standards, including cGMP requirements, (iii) federal and state data privacy, security, fraud and abuse and other healthcare laws and regulations in the United States and abroad or (iv) laws that require the true, complete and accurate reporting of financial information or data. Activities subject to these laws also involve the improper use or misrepresentation of information obtained in the course of clinical trials, the creation of fraudulent data in our preclinical studies or clinical trials or illegal misappropriation of drug product, which could result in regulatory sanctions and cause serious harm to our reputation. It is not always possible to identify and deter misconduct by employees and other third parties, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. In addition, we are subject to the risk that a person or government could allege such fraud or other misconduct, even if none occurred. 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 and financial results, including, without limitation, the imposition of significant civil, criminal and administrative penalties, damages, monetary fines, disgorgements, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, imprisonment, contractual damages, reputational harm, diminished profits and future earnings, additional reporting requirements and oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws and curtailment of our operations, any of which could adversely affect our ability to operate our business and our results of operations.

We may engage in strategic transactions that could impact our liquidity, increase our expenses and present significant distractions to our management.

From time to time, we may consider strategic transactions, such as acquisitions of companies, asset purchases and out-licensing or in-licensing of intellectual property, products or technologies. Potential transactions that we may consider in the future include a variety of business arrangements, including spin-offs, strategic partnerships, joint ventures, restructurings, divestitures, business combinations and investments. Any future transactions could increase our near and long-term expenditures, result in potentially dilutive issuances of our equity securities, including our Common Stock, or the incurrence of debt, contingent liabilities, amortization expenses or acquired in-process research and development expenses, any of which could affect our financial condition, liquidity and results of operations. Future acquisitions may also require us to obtain additional financing, which may not be available on favorable terms or at all. These transactions may never be successful and may require significant time and attention of our management. In addition, the integration of any business that we may acquire in the future may disrupt our existing business and may be a complex, risky and costly endeavor for which we may never realize the full benefits of the acquisition. Accordingly, although there can be no assurance that we will undertake or successfully complete any additional transactions of the nature described above, any additional transactions that we do complete could have a material adverse effect on our business, results of operations, financial condition and prospects.

Our ability to use net operating loss carryforwards and other tax attributes may be limited.

We have incurred substantial losses during our history, do not expect to become profitable in the near future and may never achieve profitability. To the extent we continue to generate taxable losses, unused losses will carry forward and, subject to limitations, offset future taxable income, if any, until such unused losses expire (although federal net operating loss ("NOL") carryforwards generated in taxable years beginning after December 31, 2017 will not be subject to expiration). As of December 31, 2023, we had federal and California NOL carryforwards of approximately $200.9 million and $93.8 million, respectively, and federal and California research and development credit carryforwards of approximately $11.4 million, inclusive of the federal orphan drug tax credit carryforward, and $4.8 million, respectively.

Under Section 382 of the Code, our federal NOL carryforwards may become subject to an annual limitation in the event of certain cumulative changes in the ownership of our company. An "ownership change" pursuant to Section 382 of the Code generally occurs if one or more stockholders or groups of stockholders who own at least 5% of a company's stock increase their ownership by more than 50 percentage points over their lowest ownership percentage within a rolling three-year period. Similar rules may apply under state tax laws. We have not yet formally determined the amount of the cumulative change in our ownership, or any resulting limitations on our ability to utilize our NOL carryforwards and other tax attributes. However, we believe our ability to utilize our NOL carryforwards and other tax attributes to offset future taxable income or tax liabilities is likely to be limited as a result of ownership changes. In addition, our NOL carryforwards are subject to review and possible adjustment by the IRS and state tax authorities. Moreover, federal NOL carryforwards generated in taxable years beginning after December 31, 2017 may generally only be used to offset 80% of taxable income in taxable years beginning after December 31, 2020. If we earn taxable income, these limitations could result in increased future income tax liability to us and our future cash flows could be adversely affected. We have recorded a full valuation allowance related to our NOL carryforwards and other deferred tax assets due to the uncertainty of the ultimate realization of the future benefits of those assets.

Risks Related to Our Intellectual Property

Our success depends on our ability to protect our intellectual property and our proprietary technologies.

Our commercial success depends in part on our ability to obtain and maintain patent protection and trade secret protection for our product candidates, proprietary technologies and their uses as well as our ability to operate without infringing upon the proprietary rights of others. We generally seek to protect our proprietary position by filing patent applications in the United States and abroad related to our product candidates, proprietary technologies and their uses that are important to our business. Our patent applications cannot be enforced against third parties practicing the technology claimed in such applications unless and until patents issue from such applications, and then only to the extent the issued claims cover the technology. There can be no assurance that our patent

applications or those of our licensor will result in additional patents being issued or that issued patents will afford sufficient protection against competitors with similar technology, nor can there be any assurance that the patents issued will not be infringed, designed around or invalidated by third parties. Even issued patents may later be found invalid or unenforceable or may be modified or revoked in proceedings instituted by third parties before various patent offices or in courts. The degree of future protection for our proprietary rights is uncertain. Only limited protection may be available and may not adequately protect our rights or permit us to gain or keep any competitive advantage. If the scope of any patent protection we obtain is not sufficiently broad, or if we or our licensors lose any of the patent protection we license, our ability to prevent our competitors would be adversely affected. This failure to properly protect the intellectual property rights relating to our product candidates could have a material adverse effect on our financial condition and results of operations. Although we own issued patents in the United States directed to tomivosertib and zotatifin, we cannot be certain that the claims in our other U.S. pending patent applications, corresponding international patent applications and patent applications in certain foreign territories directed to tomivosertib and zotatifin, or any of our patent applications directed to our other product candidates, will be considered patentable by the United States Patent and Trademark Office (the "USPTO") courts in the United States or by the patent offices and courts in foreign countries, nor can we be certain that the claims in our issued patents will not be found invalid or unenforceable if challenged.

The patent application process is subject to numerous risks and uncertainties, and there can be no assurance that we or any of our current or future collaborators will be successful in protecting our product candidates by obtaining and defending patents. These risks and uncertainties include the following:

- the USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other provisions during the patent process, the noncompliance with which can result in abandonment or lapse of a patent or patent application, and partial or complete loss of patent rights in the relevant jurisdiction;
- patent applications may not result in any patents being issued;
- patents that may be issued or in-licensed may be challenged, invalidated, modified, revoked, circumvented, found to be unenforceable or otherwise may not provide any competitive advantage;
- our competitors, many of whom have substantially greater resources than we do and many of whom have made significant investments in competing technologies, may seek or may have already obtained patents that will limit, interfere with or eliminate our ability to make, use and sell our potential product candidates;
- there may be significant pressure on the U.S. government and international governmental bodies to limit the scope of patent protection both inside and outside the United States for disease treatments that prove successful, as a matter of public policy regarding worldwide health concerns; and
- countries other than the United States may have patent laws less favorable to patentees than those upheld by U.S. courts, allowing foreign competitors a better opportunity to create, develop and market competing product candidates.

The patent prosecution process is also expensive and time-consuming, and we may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner or in all jurisdictions where protection may be commercially advantageous. It is also possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. Moreover, in some circumstances, including under our license agreement with UCSF, we do not have the right to control the preparation, filing and prosecution of patent applications, or to maintain the patents, directed to technology that we license from third parties. We may also require the cooperation of our licensor in order to enforce the licensed patent rights, and such cooperation may not be provided. Therefore, these patents and applications may not be prosecuted and enforced in a manner consistent with the best interests of our business. We cannot be certain that patent prosecution and maintenance activities by our licensor have been or will be conducted in compliance with applicable laws and regulations, which may affect the validity and enforceability of such patents or any patents that may issue from such applications. If they fail to do so, this could cause us to lose rights in any applicable intellectual property that we in-license, and as a result our ability to develop and commercialize products or product candidates may be adversely affected and we may be unable to prevent competitors from making, using and selling competing products.

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

In addition, although we enter into non-disclosure and confidentiality agreements with parties who have access to patentable aspects of our research and development output, such as our employees, corporate collaborators, outside scientific collaborators, CROs, third-party manufacturers, consultants, advisors and other third parties, any of these parties may breach such agreements and disclose such output before a patent application is filed, thereby jeopardizing our ability to seek patent protection.

Moreover, the patent position of biopharmaceutical companies generally is highly uncertain, involves complex legal and factual questions and has in recent years been the subject of much litigation. The issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability, and our patents, if issued, or the patent rights that we license from others, may be challenged in the courts or patent offices in the United States and abroad. Such challenges may result in loss of exclusivity or in patent claims being narrowed, invalidated or held unenforceable, which could limit our ability to stop others from using or commercializing similar or identical products, or limit the duration of the patent protection of our products and product candidates. 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. As a result, our intellectual property may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours.

Our commercial success depends significantly on our ability to operate without infringing the patents and other proprietary rights of third parties. Claims by third parties that we infringe their proprietary rights may result in liability for damages or prevent or delay our developmental and commercialization efforts.

Our commercial success depends in part on avoiding infringement of the patents and proprietary rights of third parties. Other entities may have or obtain patents or proprietary rights that could limit our ability to make, use, sell, offer for sale or import our product candidates and products that may be approved in the future, or impair our competitive position. There is a substantial amount of litigation, both within and outside the United States, involving patent and other intellectual property rights in the biotechnology and pharmaceutical industries, including patent infringement lawsuits, interferences, oppositions, reexaminations, inter partes review proceedings and post-grant review (“PGR”) proceedings before the USPTO and/or corresponding foreign patent offices. Numerous third-party U.S. and foreign issued patents and pending patent applications exist in the fields in which we are developing product candidates. There may be third-party patents or patent applications with claims to materials, formulations, methods of manufacture or methods for treatment related to the use or manufacture of our product candidates.

As the biotechnology industry expands and more patents are issued, the risk increases that our product candidates may be subject to claims of infringement of the patent rights of third parties. Because patent applications are maintained as confidential for a certain period of time, until the relevant application is published we may be unaware of third-party patents that may be infringed by commercialization of any of our product candidates, and we cannot be certain that we were the first to file a patent application related to a product candidate or technology. Moreover, because patent applications can take many years to issue, there may be currently-pending patent applications that may later result in issued patents that our product candidates may infringe. In addition, identification of third-party patent rights that may be relevant to our technology is difficult because patent searching is imperfect due to differences in terminology among patents, incomplete databases and the difficulty in assessing the meaning of patent claims. There is also no assurance that there is not prior art of which we are aware, but which we do not believe is relevant to our business, which may, nonetheless, ultimately be found to limit our ability to make, use, sell, offer for sale or import our products that may be approved in the future, or impair our competitive position. Any claims of patent infringement asserted by third parties would be time consuming and could:

- result in costly litigation;
- divert the time and attention of our technical personnel and management;

- cause development delays;
- prevent us from commercializing any of our product candidates until the asserted patent expires or is held finally invalid or not infringed in a court of law;
- require us to develop non-infringing technology, which may not be possible on a cost-effective basis;
- subject us to significant liability to third parties; or
- require us to enter into royalty or licensing agreements, which may not be available on commercially reasonable terms, or at all.

Although no third party has asserted a claim of patent infringement against us as of the date of this Annual Report, others may hold proprietary rights that could prevent our product candidates from being marketed. Any patent-related legal action against us claiming damages and seeking to enjoin commercial activities relating to our product candidates or processes could subject us to potential liability for damages, including treble damages if we were determined to willfully infringe, and require us to obtain a license to manufacture or market our product candidates. 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. We cannot predict whether we would prevail in any such actions or that any license required under any of these patents would be made available on commercially acceptable terms, if at all. Moreover, even if we or our future strategic partners were able to obtain a license, the rights may be nonexclusive, which could result in our competitors gaining access to the same intellectual property. In addition, we cannot be certain that we could redesign our product candidates or processes to avoid infringement, if necessary. Accordingly, an adverse determination in a judicial or administrative proceeding, or the failure to obtain necessary licenses, could prevent us from developing and commercializing our product candidates, which could harm our business, financial condition and operating results. In addition, intellectual property litigation, regardless of its outcome, may cause negative publicity and could prohibit us from marketing or otherwise commercializing our product candidates and technology.

We may be involved in lawsuits to protect or enforce our patents or the patents of our licensor, which could be expensive, time consuming, and unsuccessful. Further, our issued patents could be found invalid or unenforceable if challenged in court.

Competitors may infringe our intellectual property rights or those of our licensor. To prevent infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time-consuming. In addition, in a patent infringement proceeding, a court may decide that a patent we own or in-license is not valid, is unenforceable and/or is not infringed. If we or any of our current or future collaborators were to initiate legal proceedings against a third party to enforce a patent directed at one of our product candidates, the defendant could counterclaim that our patent is invalid and/or unenforceable in whole or in part. In patent litigation in the United States, defendant counterclaims alleging invalidity and/or unenforceability are commonplace. Grounds for a validity challenge include an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness or non-enablement. Grounds for an unenforceability assertion could include an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO or made a misleading statement during prosecution. Third parties may also raise similar claims before the USPTO, even outside the context of litigation.

The outcome following legal assertions of invalidity and unenforceability is unpredictable, and prior art could render our patents or those of our licensors invalid or could prevent a patent from issuing from one or more of our pending patent applications. There is no assurance that all potentially relevant prior art relating to our patents and patent applications has been found. There is also no assurance that there is not prior art of which we are aware, but which we do not believe affects the validity or enforceability of a claim in our patents and patent applications, which may, nonetheless, ultimately be found to affect the validity or enforceability of a claim. Furthermore, even if our patents are unchallenged, they may not adequately protect our intellectual property, provide exclusivity for our product candidates, prevent others from designing around our claims or provide us with a competitive advantage. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the patent protection on such product candidate. In addition, if the breadth or strength of protection provided by our patents and patent applications is threatened, it could dissuade companies from collaborating with us to license, develop or commercialize current or future product candidates. Such a loss of patent protection would have a material adverse impact on our business.

The outcome following legal assertions of invalidity and unenforceability is unpredictable, and prior art could render our patents or those of our licensors invalid. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the patent protection on such product candidate. Such a loss of patent protection would have a material adverse impact on our business.

Interference or derivation proceedings provoked by third parties or brought by us or declared by the USPTO may be necessary to determine the priority of inventions with respect to our patents or patent applications or those of our licensors. An unfavorable outcome 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 the prevailing party does not offer us a license on commercially reasonable terms. Our defense of litigation, interference or derivation proceedings may fail and, even if successful, may result in substantial costs and distract our management and other employees. In addition, the uncertainties associated with litigation could have a material adverse effect on our ability to raise the funds necessary to continue our clinical trials, continue our research programs, license necessary technology from third parties or enter into development or manufacturing partnerships that would help us bring our product candidates to market.

Even if resolved in our favor, litigation or other legal proceedings relating to our intellectual property rights may cause us to incur significant expenses, and could distract our technical and management personnel from their normal responsibilities. 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. 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. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could compromise our ability to compete in the marketplace.

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. There could also 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 material adverse effect on the price of our Common Stock.

In addition, the issuance of a patent does not give us the right to practice the patented invention. Third parties may have blocking patents that could prevent us from marketing our own patented product and practicing our own patented technology. Our ability to enforce our patent rights also depends on our ability to detect infringement. It may be difficult to detect infringers who do not advertise the components or methods that are used in connection with their products and services. Moreover, it may be difficult or impossible to obtain evidence of infringement in a competitor's or potential competitor's product or service. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded if we were to prevail may not be commercially meaningful.

Patent reform legislation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents.

On September 16, 2011, the Leahy-Smith America Invents Act (the "Leahy-Smith Act"), was signed into law. The Leahy-Smith Act includes a number of significant changes to U.S. patent law. These include provisions that affect the way patent applications filed after March 2013 will be prosecuted and may also affect patent litigation. In particular, under the Leahy-Smith Act, the United States transitioned in March 2013 to a "first inventor to file" system in which the first inventor to file a patent application will be entitled to the patent. Third parties are allowed to submit prior art before the issuance of a patent by the USPTO, and may become involved in post-grant proceedings including post grant review, derivation, reexamination, inter partes review or interference proceedings challenging our patent rights or the patent rights of others. An adverse determination in any such submission, proceeding or litigation could reduce the scope or enforceability of, or invalidate, our patent rights, which could adversely affect our competitive position.

Because of a lower evidentiary standard in USPTO proceedings compared to the evidentiary standard in United States federal courts necessary to invalidate a patent claim, a third party could potentially provide evidence in a USPTO proceeding sufficient for the USPTO to hold a claim invalid even though the same evidence would be insufficient to invalidate the claim if first presented in a district court action. Accordingly, a third party may attempt to use the USPTO procedures to invalidate our patent claims that would not have been invalidated if first challenged by the third party as a defendant in a district court action. Thus, the Leahy-Smith Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our future patent applications or those of our current and future licensors and the enforcement or defense of our future issued patents or those of our current and future licensors, all of which could have a material adverse effect on our business, financial condition, results of operations and prospects.

In addition, in June 2023, the European Patent Package, or EU Patent Package, regulations were implemented with the goal of providing a single pan-European Unitary Patent and a new European Unified Patent Court, or UPC, for litigation involving European patents. Under the UPC, all European patents, including those issued prior to ratification of the European Patent Package, by default automatically fall under the jurisdiction of the UPC. The UPC will provide our competitors with a new forum to centrally revoke our European patents, and allow for the possibility of a competitor to obtain pan-European injunctions. It will be several years before we will understand the scope of patent rights that will be recognized and the strength of patent remedies that will be provided by the UPC. As the UPC is a new court system, there is no precedent for the court, increasing the uncertainty of any litigation before the UPC. Under the EU Patent Package as currently proposed, we have the right to opt our patents out of the UPC over the first seven years of the court's existence, but doing so may preclude us from realizing the benefits of the new unified court. Moreover, the decision whether to opt-out of Unitary Patent status will require coordinating with co-applicants, if any, adding complexity to any such decision.

If we fail to comply with any of our obligations under our existing license agreement or any future license agreements, or disputes arise with respect to those agreements, it could have a negative impact on our business and our intellectual property rights.

We are party to a license agreement with UCSF that imposes, and we may enter into additional licensing arrangements with third parties that may impose, diligence, development and commercialization timelines, milestone payment, royalty, insurance and other obligations on us. Our rights to use the licensed intellectual property are subject to the continuation of and our compliance with the terms of these agreements. Disputes may arise regarding our rights to intellectual property licensed to us from a third party, including but not limited to:

- the scope of rights granted under the license agreement and other interpretation-related issues;
- the extent to which our technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement;
- the sublicensing of patent and other rights;
- our diligence obligations under the license agreement and what activities satisfy those diligence obligations;
- the ownership of inventions and know-how resulting from the creation or use of intellectual property by us, alone or with our licensors and collaborators;
- the scope and duration of our payment obligations;
- our rights upon termination of such agreement; and
- the scope and duration of exclusivity obligations of each party to the agreement.

If disputes over intellectual property and other rights that we have licensed or acquired from third parties prevent or impair our ability to maintain our current licensing arrangements on acceptable terms, we may be unable to successfully develop and commercialize the affected product candidates. If we fail to comply with our obligations under current or future licensing agreements, these agreements may be terminated or the scope of our rights under them may be reduced and we might be unable to develop, manufacture or market any product that is licensed under these agreements.

We may be subject to claims that we have wrongfully hired an employee from a competitor or that we or our employees have wrongfully used or disclosed alleged confidential information or trade secrets of their former employers.

As is common in the pharmaceutical industry, in addition to our employees, we engage the services of consultants to assist us in the development of our product candidates. Many of these consultants, and many of our employees, were previously employed at, or may have previously provided or may be currently providing consulting services to, other pharmaceutical companies including our competitors or potential competitors. We may become subject to claims that we, our employees or a consultant inadvertently or otherwise used or disclosed trade secrets or other information proprietary to their former employers or their former or current clients. Litigation 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, which could adversely affect our business. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to our management team.

In addition, while it is our policy to require our employees and contractors who may be involved in the conception or development of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who, in fact, conceives or develops intellectual property that we regard as our own. The assignment of intellectual property rights may not be self-executing, or the assignment agreements may be breached, and we may be forced to bring claims against third parties, or defend claims that they may bring against us, to determine the ownership of what we regard as our intellectual property. Such claims could have a material adverse effect on our business, financial condition, results of operations and prospects.

We may be subject to claims challenging the inventorship or ownership of our patents and other intellectual property.

We may also be subject to claims that former employees, collaborators or other third parties have an ownership interest in our patents or other intellectual property. Litigation may be necessary to defend against these and other claims challenging inventorship or ownership. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights. Such an outcome could have a material adverse effect on our business. Even if we are successful in defending against such claims, litigation could result in substantial costs and 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.

Patent terms may be inadequate to protect our competitive position on our product candidates for an adequate amount of time.

Patents have a limited lifespan. In the United States, if all maintenance fees are timely paid, the natural expiration of a patent is generally 20 years from its earliest U.S. non-provisional filing date. Various extensions may be available, but the life of a patent, and the protection it affords, is limited. Even if patents covering our product candidates are obtained, once the patent life has expired, we may be open to competition from competitive products, including biosimilars. 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. As a result, our owned and licensed patent portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours.

We may not identify relevant third-party patents or may incorrectly interpret the relevance, scope or expiration of a third-party patent, which might adversely affect our ability to develop and market product candidates.

We cannot guarantee that any of our patent searches or analyses, including the identification of relevant patents, the scope of patent claims or the expiration of relevant patents, are complete or thorough, nor can we be certain that we have identified each and every third-party patent and pending patent application in the United States and abroad that is relevant to or necessary for the commercialization of our current and future products and product candidates in any jurisdiction. The scope of a patent claim is determined by an interpretation of the law, the written disclosure in a patent and the patent's prosecution history. Our interpretation of the relevance or the scope of a

patent or a pending patent application may be incorrect, which may negatively impact our ability to market our products. We may incorrectly determine that our products or product candidates are not covered by a third-party patent or may incorrectly predict whether a third party's pending patent application will issue with claims of relevant scope. Our determination of the expiration date of any patent in the United States or abroad that we consider relevant may be incorrect, and our failure to identify and correctly interpret relevant patents may negatively impact our ability to develop and market our products. Any of the foregoing could have a material adverse effect on our business, financial condition, results of operations and prospects.

If we do not obtain patent term extension for our product candidates, our business may be materially harmed.

Depending upon the timing, duration and specifics of FDA marketing approval of our product candidates, one or more of our U.S. patents may be eligible for limited patent term restoration under the Drug Price Competition and Patent Term Restoration Act of 1984 ("Hatch-Waxman Amendments"). The Hatch- Waxman Amendments permit a patent restoration term of up to five years as compensation for patent term lost during product development and 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. Similar patent term restoration provisions to compensate for commercialization delay caused by regulatory review are also available in certain foreign jurisdictions, such as in Europe under Supplemental Protection Certificate (SPC). However, we may not be granted an extension because of, for example, 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 restoration or the term of any such extension is less than we request, our competitors may obtain approval of competing products following our patent expiration, and our revenue could be reduced, possibly materially. Further, if this occurs, our competitors may take advantage of our investment in development and trials by referencing our clinical and preclinical data and launch their product earlier than might otherwise be the case.

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

Our registered or unregistered trademarks or trade names may be challenged, infringed, circumvented or declared generic or determined to be infringing on other marks. During trademark registration proceedings, we may receive rejections of our applications by the USPTO or in other foreign jurisdictions. Although we are given an opportunity to respond to such rejections, we may be unable to overcome them. 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 to seek to cancel registered trademarks. Opposition or cancellation proceedings may be filed against our trademarks, which may not survive such proceedings. Moreover, any name we have proposed to use with our product candidate in the United States must be approved by the FDA, regardless of whether we have registered it, or applied to register it, as a trademark. Similar requirements exist in Europe. The FDA typically conducts a review of proposed product names, including an evaluation of potential for confusion with other product names. If the FDA or an equivalent administrative body in a foreign jurisdiction objects to any of our proposed proprietary product names, we may be required to expend significant additional resources in an effort to identify a suitable substitute name that would qualify under applicable trademark laws, not infringe the existing rights of third parties and be acceptable to the FDA. Furthermore, in many countries, owning and maintaining a trademark registration may not provide an adequate defense against a subsequent infringement claim asserted by the owner of a senior trademark.

We may not be able to protect our rights to these trademarks and trade names, which we need to build name recognition among potential partners or customers in our markets of interest. At times, competitors may adopt trade names or trademarks similar to ours, thereby impeding our ability to build brand identity and possibly leading to market confusion. In addition, there could be potential trade name or trademark infringement claims brought by owners of other registered trademarks or trademarks that incorporate variations of our registered or unregistered trademarks or trade names. Over the long term, if we are unable to establish name recognition based on our trademarks and trade names, then we may not be able to compete effectively and our business may be adversely affected. Our efforts to enforce or protect our proprietary rights related to trademarks, trade secrets, domain names, copyrights or other intellectual property may be ineffective and could result in substantial costs and diversion of resources and could adversely affect our financial condition or results of operations.

Changes in U.S. patent law, or laws in other countries, could diminish the value of patents in general, thereby impairing our ability to protect our product candidates.

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 a high degree of technological and legal complexity. Therefore, obtaining and enforcing biopharmaceutical patents is costly, time consuming and inherently uncertain. Changes in either the patent laws or in the interpretations of patent laws in the United States and other countries may diminish the value of our intellectual property. We cannot predict the breadth of claims that may be allowed or enforced in our patents or in third-party patents. In addition, Congress or other foreign legislative bodies may pass patent reform legislation that is unfavorable to us. For example, the U.S. Supreme Court has ruled on several patent cases in recent years, either narrowing the scope of patent protection available in certain circumstances or weakening 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 U.S. federal courts, the USPTO, or similar authorities in foreign jurisdictions, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce our existing patents and patents we might obtain in the future.

We may not be able to protect our intellectual property rights throughout the world.

Although we own issued patents directed to tomivosertib and zotatifin in the United States and pending patent applications directed to tomivosertib, zotatifin, and other product candidates in the United States and other countries, filing, prosecuting and defending patents on tomivosertib, zotatifin and our other product candidates in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States can be less extensive than those in the United States. 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 United States. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. In addition, some jurisdictions, such as Europe, Japan and China, may have a higher standard for patentability than in the United States, including, for example, the requirement of claims having literal support in the original patent filing and the limitation on using supporting data that is not in the original patent filing. Under those heightened patentability requirements, we may not be able to obtain sufficient patent protection in certain jurisdictions even though the same or similar patent protection can be secured in the United States and 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 enforcement is not as strong as that in the United States. These products may compete with our product candidates, and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

In addition, geo-political actions in the United States and in foreign countries could increase the uncertainties and costs surrounding the prosecution or maintenance of our patent applications or those of any current or future licensors and the maintenance, enforcement or defense of our issued patents or those of any current or future licensors. For example, the United States and foreign government actions related to Russia's conflict in Ukraine may limit or prevent filing, prosecution, and maintenance of patent applications in Russia. Government actions may also prevent maintenance of issued patents in Russia. These actions could result in abandonment or lapse of our patents or patent applications, resulting in partial or complete loss of patent rights in Russia. If such an event were to occur, it could have a material adverse effect on our business. In addition, a decree was adopted by the Russian government in March 2022, allowing Russian companies and individuals to exploit inventions owned by patentees from the United States without consent or compensation. Consequently, we would not be able to prevent third parties from practicing our inventions in Russia or from selling or importing products made using our inventions in and into Russia. Accordingly, our competitive position may be impaired, and our business, financial condition, results of operations and prospects may be adversely affected.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of many foreign countries do not favor the enforcement of patents and other intellectual property protection, which could make it difficult for us to stop the infringement of our patents or marketing of competing products in violation of our proprietary rights. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our 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 also 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 patent. If we are forced to grant a license to third parties with respect to any patents relevant to our business, our competitive position may be impaired, and our business, financial condition, results of operations and prospects may be adversely affected.

Intellectual property litigation may lead to unfavorable publicity that harms our reputation and causes the market price of our common shares to decline.

During the course of any intellectual property litigation, there could be public announcements of the initiation of the litigation as well as results of hearings, rulings on motions, and other interim proceedings in the litigation. If securities analysts or investors regard these announcements as negative, the perceived value of our existing products, programs or intellectual property could be diminished. Accordingly, the market price of our common shares may decline. Such announcements could also harm our reputation or the market for our future products, which could have a material adverse effect on our business.

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

Periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents and/or applications will be due to the USPTO and various foreign patent offices at various points over the lifetime of our patents and/or applications. We have systems in place to remind us to pay these fees, and we rely on our outside patent annuity service to pay these fees when due. Additionally, the USPTO and various foreign patent offices require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. We employ reputable law firms and other professionals to help us comply, and in many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with rules applicable to the particular jurisdiction. However, 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. If such an event were to occur, it could have a material adverse effect on our business.

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

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations, and may not adequately protect our business or permit us to maintain our competitive advantage. For example:

- others may be able to develop products that are similar to our product candidates but that are not covered by the claims of the patents that we own or have exclusively licensed;
- we or our licensors or current or future collaborators might not have been the first to make the inventions covered by the issued patent or pending patent application that we own or have exclusively licensed;
- we or our licensors or current or future collaborators might not have been the first to file patent applications covering certain of our inventions;

- others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our intellectual property rights;
- it is possible that our pending patent applications will not lead to issued patents;
- issued patents that we own or have exclusively licensed may be held invalid or unenforceable, as a result of legal challenges by our competitors;
- our competitors might conduct research and development activities in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets;
- we may not develop additional proprietary technologies that are patentable; and
- the patents of others may have an adverse effect on our business.

Should any of these events occur, they could significantly harm our business, 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, we rely on the protection of our trade secrets, including unpatented know-how, technology and other proprietary information to maintain our competitive position. Although we have taken steps to protect our trade secrets and unpatented know-how, including entering into confidentiality agreements with third parties, and confidential information and inventions agreements with employees, consultants and advisors. Despite these efforts, we cannot provide any assurances that all such agreements have been duly executed, and any of these parties may breach the agreements 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. In addition, some courts inside and outside the United States are less willing or unwilling to protect trade secrets. Moreover, third parties may still obtain this information or may come upon this or similar information independently, and we would have no right to prevent them from using that technology or information to compete with us. We may need to share our proprietary information, including trade secrets, with our current and future business partners, collaborators, contractors and others located in countries at heightened risk of theft of trade secrets, including through direct intrusion by private parties or foreign actors, and those affiliated with or controlled by state actors. If any of these events occurs or if we otherwise lose protection for our trade secrets, the value of this information may be greatly reduced and our competitive position would be harmed. If we do not apply for patent protection prior to such publication or if we cannot otherwise maintain the confidentiality of our proprietary technology and other confidential information, then our ability to obtain patent protection or to protect our trade secret information may be jeopardized.

Our licensees may breach the terms and conditions under their intellectual property license agreements with us and we may not be successful in enforcing their compliance with these agreements.

We license patents, know-how and proprietary technology rights for certain product candidates to third parties in return for upfront, milestone, royalty, and other considerations. Our licensees may not able to achieve approval of the licensed products in the countries for which they hold product rights and they may not diligently commercialize such licensed products if and when the licensed product is approved. Under such scenarios, we will not receive royalties or will receive diminished royalties. Our licensees may take actions or fail to take actions that result in safety issues with the licensed product in their licensed territory, and such safety issues could negatively impact the licensed product in countries outside of the licensed territory, whether due to reputational harm or standing to the licensed product or to our name, or by direct regulatory action by authorities outside of the licensed territory. Our licensees may violate certain laws and regulations in the licensed territory, including with respect to safety, patient and data privacy, antitrust, and bribery and corruption, and as a result of such violations may incur substantial fines, criminal investigation and liability, or cause a regulatory authority to remove the licensed product from the marketplace. If any of these events were to occur, we may not receive the financial consideration that we expected from our assignees or licensees, and we could potentially be named and implicated in any of their violations and our

assignees or licensees may not indemnify us for relevant damages and liabilities. In the event of a breach of an agreement by our assignees or licensees, we may not be able to successful in enforcing the terms and conditions of such agreements in court or via agreed upon dispute resolution mechanisms, and even if we were to prevail in any such dispute, the remedies may not be adequate to compensate us for the losses.

Patent protection and patent prosecution for any future product candidates may be dependent on third parties.

We may rely on third parties to file and prosecute patent applications and maintain patents and otherwise protect the licensed intellectual property under certain current and future license agreements. Under such arrangements, we may not have primary control over these activities for certain of licensed patents or patent applications and other intellectual property rights. We cannot be certain that such activities by third parties have been or will be conducted in compliance with applicable laws and regulations or will result in valid and enforceable patents or other intellectual property rights. In addition, our current and future licensors may not be fully cooperative or disagree with us as to the prosecution, maintenance or enforcement of any patent rights, which could compromise such patent rights. We may in the future enter into license agreements where the licensors may have the right to control enforcement of our licensed patents or defense of any claims asserting the invalidity of these patents and even if we are permitted to pursue such enforcement or defense, we will require the cooperation of our licensors. We cannot be certain that our licensors will allocate sufficient resources or prioritize their or our enforcement of such patents or defense of such claims to protect our interests in the licensed patents. Even if we are not a party to these legal actions, an adverse outcome could harm our business because it might prevent us from continuing to license intellectual property that we may need to operate our business. If any of our licensors or any of our future licensors or current or future collaborators fail to appropriately prosecute and maintain patent protection for patents covering any future product candidates, our ability to develop and commercialize those product candidates may be adversely affected and we may not be able to prevent competitors from making, using and selling competing products.

In addition, even where we have the right to control prosecution of patent applications or enforcement of patents we have acquired or licensed from third parties, we may still be adversely affected or prejudiced by actions or inactions of our predecessors or licensors and their counsel that took place prior to us assuming control over such activities. Third parties may retain certain rights to the technology that they license to us, including the right to use the underlying technology for noncommercial academic and research use, to publish general scientific findings from research related to the technology, and to make customary scientific and scholarly disclosures of information relating to the technology. It is difficult to monitor whether our predecessors or licensors limit their use of the technology to these uses, and we could incur substantial expenses to enforce our rights to our licensed technology in the event of misuse.

If we are limited in our ability to utilize acquired or licensed technologies, or if we lose our rights to critical in-licensed technology, we may be unable to successfully develop, out-license, market and sell our products, which could prevent or delay new product introductions. Our business strategy depends on the successful development of licensed and acquired technologies into commercial products. Therefore, any limitations on our ability to utilize these technologies may impair our ability to develop, out-license or market and sell our product candidate.

We may not be successful in obtaining or maintaining necessary rights to any future product candidates through acquisitions and in-licenses.

Because our development programs may in the future require the use of proprietary rights held by other third parties, the growth of our business may depend in part on our ability to acquire, in-license, or use these third-party proprietary rights. 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 for any future product candidates. The licensing and acquisition of third-party intellectual property rights is a competitive area, and a number of more established companies are also pursuing strategies to license or acquire third-party intellectual property rights that we may consider attractive. These 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 license or acquire third-party intellectual property rights on terms that would allow us to make an appropriate return on our investment. If we are unable to successfully obtain rights to required third-party intellectual property rights or maintain the existing intellectual property rights we have, we may have to abandon development of that program and our business and financial condition could suffer.

Risks Related to Our Common Stock and Warrants

The market price of our common stock and warrants has been, and is likely to continue to be highly volatile, and you may lose some or all of your investment.

The market price of our common stock and warrants has been, and is likely to continue to be highly volatile and may be subject to wide fluctuations in response to a variety of factors, including the following:

- the inability to maintain the listing of our shares of common stock and warrants on Nasdaq;
- changes in applicable laws or regulations;
- timely initiation and successful enrollment of participants in our clinical trials, and completion of clinical trials and preclinical studies with favorable and timely results;
- unexpected adverse side effects or inadequate efficacy of our product candidates that may limit their development, regulatory approval and/or commercialization, or may result in recalls or product liability claims;
- innovations, clinical trial results, product approvals and other developments regarding our competitors;
- announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures or capital commitments;
- manufacturing, supply or distribution delays or shortages;
- any changes to our relationship with any manufacturers, suppliers, collaborators or other strategic partners;
- achievement of expected product sales and profitability;
- variations in our financial results or those of companies that are perceived to be similar to us;
- trading volume of our common stock;
- an inability to obtain additional funding;
- sales of our stock by insiders and stockholders;
- additions or departures of key personnel; and
- risks related to the organic and inorganic growth of our business and the timing of expected business milestones; and
- the impact of the COVID-19 pandemic or other pandemic diseases on our business.

In addition, the stock markets have experienced extreme price and volume fluctuations that affected and continue to affect the market prices of equity securities of many companies. These fluctuations have often been unrelated or disproportionate to the operating performance of those companies. Broad market and industry factors, as well as general economic, political, regulatory and market conditions, may negatively affect the market price of our common stock and warrants, regardless of our actual operating performance.

Volatility in our share price could subject us to securities class action litigation.

In the past, securities class action litigation has often been brought against a company following a decline in the market price of its securities. This risk is especially relevant for us, because biotechnology and biopharmaceutical companies have experienced significant stock price volatility in recent years. If we face such litigation, it could result in substantial costs and a diversion of management's attention and resources, which could harm our business.

If we fail to meet the continued listing requirements of the Nasdaq Capital Market, our common stock and warrants could be delisted.

If we fail to satisfy the continued listing requirements of the Nasdaq Capital Market, such as the minimum closing bid price, stockholders' equity or round lot holders requirements or the corporate governance requirements, Nasdaq may take steps to delist our common stock and/or warrants.

Although we are currently in compliance with the Nasdaq Capital Market continued listing requirements, we have in the past been subject to notifications from Nasdaq that we were not in compliance with certain listing requirements and we cannot assure you that we will be able to continue to comply with such requirements in the future. In the event that our common stock is delisted from the Nasdaq Capital Market and is not eligible for quotation or listing on another market or exchange, trading of our common stock could be conducted only in the over-the-counter market or on an electronic bulletin board established for unlisted securities such as the Pink Sheets or the OTC Bulletin Board. In such event, it could become more difficult to dispose of, or obtain accurate price quotations for, our common stock, and there would likely also be a reduction in our coverage by securities analysts and the news media, which could cause the price of our common stock to decline further. Also, it may be difficult for us to raise additional capital if we are not listed on a major exchange.

If securities or industry analysts do not publish research or reports about us, or publish negative reports, our stock price and trading volume could decline.

The trading market for our common stock and warrants depends, in part, on the research and reports that securities or industry analysts publish about us. We do not have any control over these analysts. If our financial performance fails to meet analyst estimates or one or more of the analysts who cover us downgrade our common stock or warrants or change their opinion, the trading price of our common stock and warrants would likely decline. If one or more of these analysts cease coverage of us or fail to regularly publish reports on us, it could lose visibility in the financial markets, which could cause the trading price or trading volume of our common stock and warrants to decline.

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

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. As a result, capital appreciation, if any, of our shares of common stock would be your sole source of gain on an investment in such shares for the foreseeable future.

Provisions in our certificate of incorporation and under Delaware law could discourage a takeover that stockholders may consider favorable and may lead to entrenchment of management.

Our certificate of incorporation and bylaws contain provisions that could significantly reduce the value of our shares to a potential acquiror or delay or prevent changes in control or changes in our management without the consent of our Board. The provisions in our charter documents include the following:

- a classified board of directors with three-year staggered terms, which may delay the ability of stockholders to change the membership of a majority of our Board;
- no cumulative voting in the election of directors, which limits the ability of minority stockholders to elect director candidates;
- the exclusive right of our Board, unless the Board grants such right to the stockholders, to elect a director to fill a vacancy created by the expansion of the Board or the resignation, death or removal of a director, which prevents stockholders from being able to fill vacancies on our Board;
- the required approval of at least 66-2/3% of the shares entitled to vote to remove a director for cause, and the prohibition on removal of directors without cause;

• the ability of our Board to authorize the issuance of shares of preferred stock and to determine the price and other terms of those shares, including preferences and voting rights, without stockholder approval, which could be used to significantly dilute the ownership of a hostile acquiror;

• the ability of our Board to alter our bylaws without obtaining stockholder approval;

• the required approval of at least 66-2/3% of the shares entitled to vote to adopt, amend or repeal our bylaws or repeal the provisions of our certificate of incorporation regarding the election and removal of directors;

• a prohibition on stockholder action by written consent, which forces stockholder action to be taken at an annual or special meeting of our stockholders;

• an exclusive forum provision providing that the Court of Chancery of the State of Delaware will be the exclusive forum for certain actions and proceedings;

• the requirement that a special meeting of stockholders may be called only by the Board, which may delay the ability of our stockholders to force consideration of a proposal or to take action, including the removal of directors; and

• advance notice procedures that stockholders must comply with in order to nominate candidates to our Board or to propose matters to be acted upon at a stockholders' meeting, which may discourage or deter a potential acquiror from conducting a solicitation of proxies to elect the acquiror's own slate of directors or otherwise attempting to obtain control of us.

We also are subject to the anti-takeover provisions contained in Section 203 of the Delaware General Corporation Law. Under Section 203, a corporation may not, in general, engage in a business combination with any holder of 15% or more of its capital stock unless the holder has held the stock for three years or, among other exceptions, the Board has approved the transaction.

Our certificate of incorporation provides that the Court of Chancery of the State of Delaware will be the exclusive forum for substantially all disputes between us and our stockholders and that the federal district courts shall be the exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees or the underwriters or any offering giving rise to such claim.

Our certificate of incorporation provides that the Court of Chancery of the State of Delaware is the exclusive forum for any derivative action or proceeding brought on our behalf, any action asserting a breach of fiduciary duty, any action asserting a claim against us arising pursuant to the Delaware General Corporation Law, our certificate of incorporation or our bylaws, or any action asserting a claim against us that is governed by the internal affairs doctrine. Furthermore, our certificate of incorporation also provides that unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States shall be the exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act, including all causes of action asserted against any defendant named in such complaint. Notwithstanding the foregoing, this forum selection provision does not apply to suits brought to enforce any liability or duty created by the Exchange Act or any other claim for which the federal district courts of the United States have exclusive jurisdiction. For the avoidance of doubt, this provision is intended to benefit and may be enforced by us, our officers and directors, the underwriters to any offering giving rise to such complaint, and any other professional entity whose profession gives authority to a statement made by that person or entity and who has prepared or certified any part of the documents underlying the offering. These choice of forum provisions may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees, which may discourage such lawsuits against us and our directors, officers and other employees and result in increased costs for investors to bring a claim. By agreeing to this provision, however, stockholders will not be deemed to have waived our compliance with the federal securities laws and the rules and regulations thereunder. Furthermore, the enforceability of similar choice of forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that a court could find these types of provisions to be inapplicable or unenforceable. If a court were to find the choice of forum provisions in our certificate of incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could adversely affect our business and financial condition.

We are an emerging growth company and 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 shares less attractive to investors.

We are an emerging growth company, as defined in the Jumpstart Our Business Startups Act (the "JOBS Act"). For as long as we continue to be an emerging growth company, we may take advantage of exemptions from various reporting requirements that are applicable to other public companies that are not "emerging growth companies," including exemption from compliance with the auditor attestation requirements under Section 404 of the Sarbanes-Oxley Act of 2002, reduced disclosure obligations regarding executive compensation and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. We 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 the initial public offering (December 31, 2026), (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 shares of our Common Stock that are held by non-affiliates exceeds $700 million as of the prior June 30th, and (2) the date on which we have issued more than $1.0 billion in non-convertible debt during the prior three-year period.

In addition, under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have elected to use this extended transition period for complying with new or revised accounting standards and, therefore, we will not be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies.

We are also a smaller reporting company as defined in the Exchange Act. 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 take advantage of many of the same exemptions from disclosure requirements including exemption from compliance with the auditor attestation requirements of Section 404 and reduced disclosure obligations regarding executive compensation in this Annual Report and our periodic reports and proxy statements. We are able to take advantage of these scaled disclosures for so long as our voting and non-voting common stock held by non-affiliates is less than $250.0 million measured on the last business day of our second fiscal quarter, or our annual revenue is less than $100.0 million during the most recently completed fiscal year and our voting and non-voting common stock held by non-affiliates is less than $700.0 million measured on the last business day of our second fiscal quarter.

We cannot predict if investors will find its 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 the common stock and our market price may be more volatile.

If you exercise your public warrants on a "cashless basis," you will receive fewer shares of common stock from such exercise than if you were to exercise such warrants for cash.

There are circumstances in which the exercise of the public warrants may be required or permitted to be made on a cashless basis. If our common stock is at any time of any exercise of a warrant not listed on a national securities exchange such that it satisfies the definition of a "covered security" under Section 18(b)(1) of the Securities Act, we may, at our option, require holders of public warrants who exercise their warrants to do so on a cashless basis in accordance with Section 3(a)(9) of the Securities Act and, in the event we so elect, we will not be required to file or maintain in effect a registration statement, and in the event we do not so elect, we will use our best efforts to register or qualify the shares under applicable blue sky laws to the extent an exemption is not available. Third, if we call the public warrants for redemption, our management will have the option to require all holders that wish to exercise warrants to do so on a cashless basis. In the event of an exercise on a cashless basis, a holder would pay the warrant exercise price by surrendering the warrants for that number of shares of common stock equal to the quotient obtained by dividing (x) the product of the number of shares of common stock underlying the warrants, multiplied by the difference between the exercise price of the warrants and the "fair market value" (as defined in the next sentence) by (y) the fair market value. The "fair market value" is the average reported last sale price of the common stock for the 10 trading days ending on the third trading day prior to the date on which the notice of exercise is received by the warrant agent or on which the notice of redemption is sent to the holders of warrants, as applicable. As a result, you would receive fewer shares of common stock from such exercise than if you were to exercise such warrants for cash.

We may amend the terms of the public warrants in a manner that may be adverse to holders with the approval by the holders of at least 65% of the then outstanding public warrants.

Our warrants were issued in registered form under a warrant agreement between Continental Stock Transfer & Trust Company, as warrant agent, and us. The warrant agreement provides that the terms of the warrants may be amended without the consent of any holder to cure any ambiguity or correct any defective provision, but requires the approval by the holders of at least 65% of the then outstanding public warrants to make any change that adversely affects the interests of the registered holders of public warrants. Accordingly, we may amend the terms of the public warrants in a manner adverse to a holder if holders of at least 65% of the then outstanding public warrants approve of such amendment. Although our ability to amend the terms of the public warrants with the consent of at least 65% of the then outstanding public warrants is unlimited, examples of such amendments could be amendments to, among other things, increase the exercise price of the warrants, convert the warrants into cash or stock, shorten the exercise period or decrease the number of shares of our common stock purchasable upon exercise of a warrant.

We may redeem your unexpired public warrants prior to their exercise at a time that is disadvantageous to you, thereby making public warrants worthless.

We have the ability to redeem outstanding public warrants at any time after they become exercisable and prior to their expiration, at $0.25 per warrant, provided that the last reported sales price (or the closing bid price of our common stock in the event the shares of our common stock are not traded on any specific trading day) of the common stock equals or exceeds $450.00 per share (as adjusted for stock splits, stock dividends, reorganizations and the like) for any 20 trading days within a 30 trading-day period ending on the third trading day prior to the date we send proper notice of such redemption, provided that on the date we give notice of redemption and during the entire period thereafter until the time we redeem the public warrants, we have an effective registration statement under the Securities Act covering the shares of common stock issuable upon exercise of the public warrants and a current prospectus relating to them is available. If and when the public warrants become redeemable by us, we may exercise our redemption right even if we are unable to register or qualify the underlying securities for sale under all applicable state securities laws. Redemption of the outstanding public warrants could force you: (i) to exercise public warrants and pay the exercise price therefor at a time when it may be disadvantageous for you to do so, (ii) to sell public warrants at the then-current market price when you might otherwise wish to hold public warrants or (iii) to accept the nominal redemption price which, at the time the outstanding public warrants are called for redemption, is likely to be substantially less than the market value of your public warrants.

General Risks Factors

We incur significant costs as a result of operating as a public company, and our management is required to devote substantial time to new compliance initiatives.

As a public company, we incur significant legal, accounting and other expenses that we did not incur as a private company. We are subject to the reporting requirements of the Exchange Act, which will require, among other things, that we file with the SEC annual, quarterly and current reports with respect to our business and financial condition. In addition, Sarbanes-Oxley, as well as rules subsequently adopted by the SEC and Nasdaq to implement provisions of Sarbanes-Oxley, impose significant requirements on public companies, including requiring establishment and maintenance of effective disclosure and financial controls and changes in corporate governance practices. Further, pursuant to the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, the SEC has adopted additional rules and regulations in these areas, such as mandatory “say on pay” voting requirements that will apply to us when we cease to be an emerging growth company. Stockholder activism, the current political environment and the current high level of government intervention and regulatory reform may lead to substantial new regulations and disclosure obligations, which may lead to additional compliance costs and impact the manner in which we operate our business in ways we cannot currently anticipate.

We expect the rules and regulations applicable to public companies to substantially increase our legal and financial compliance costs and to make some activities more time consuming and costly. If these requirements divert the attention of our management and personnel from other business concerns, they could have a material adverse effect on our business, financial condition and results of operations. The increased costs will decrease our net

income or increase our net loss, and may require us to reduce costs in other areas of our business or increase the prices of our products or services. For example, we expect these rules and regulations to make it more difficult and more expensive for us to obtain director and officer liability insurance, and we may be required to incur substantial costs to maintain the same or similar coverage. We cannot predict or estimate the amount or timing of additional costs we may incur to respond to these requirements. The impact of these requirements could also make it more difficult for us to attract and retain qualified persons to serve on our Board, our Board committees or as executive officers.

If we fail to maintain proper and effective internal control over financial reporting, our ability to produce accurate and timely financial statements could be impaired, investors may lose confidence in our financial reporting and the trading price of our Common Stock may decline.

Pursuant to Section 404 of Sarbanes-Oxley, our management is required to report upon the effectiveness of our internal control over financial reporting. When we lose our status as an "emerging growth company" and reach an accelerated filer threshold, our independent registered public accounting firm will be required to attest to the effectiveness of our internal control over financial reporting. The rules governing the standards that must be met for our management to assess our internal control over financial reporting are complex and require significant documentation, testing and possible remediation. To comply with the requirements of being a reporting company under the Exchange Act, we may need to upgrade our information technology systems; implement additional financial and management controls, reporting systems and procedures; and hire additional accounting and finance staff. If we or, if required, our auditors are unable to conclude that our internal control over financial reporting is effective, investors may lose confidence in our financial reporting and the trading price of our Common Stock may decline.

We are subject to U.S. and certain foreign export and import controls, sanctions, embargoes, anti-corruption laws and anti-money laundering laws and regulations. We could face criminal liability and other serious consequences for violations, which could harm our business.

We are subject to export control and import laws and regulations, including the U.S. Export Administration Regulations, U.S. Customs regulations, and various economic and trade sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Controls, and anti-corruption and anti-money laundering laws and regulations, including the U.S. Foreign Corrupt Practices Act of 1977, as amended, the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the USA PATRIOT Act and other state and national anti-bribery and anti-money laundering laws in the countries in which we conduct activities. Anti-corruption laws are interpreted broadly and prohibit companies and their employees, agents, CROs, contractors and other collaborators and partners from authorizing, promising, offering, providing, soliciting or receiving, directly or indirectly, improper payments or anything else of value to or from recipients in the public or private sector. We may engage third parties for clinical trials outside of the United States, to sell our products abroad once we enter a commercialization phase, and/or to obtain necessary permits, licenses, patent registrations and other regulatory approvals. We have direct or indirect interactions with officials and employees of government agencies or government-affiliated hospitals, universities and other organizations. We can be held liable for the corrupt or other illegal activities of our employees, agents, CROs, contractors and other collaborators and partners, even if we do not explicitly authorize or have actual knowledge of such activities. We are also subject to other U.S. laws and regulations governing export controls, as well as economic sanctions and embargoes on certain countries and persons.

Any violations of the laws and regulations described above may result in substantial civil and criminal fines and penalties, imprisonment, the loss of export or import privileges, debarment, tax reassessments, breach of contract and fraud litigation, reputational harm and other consequences.

Furthermore, U.S. export control laws and economic sanctions prohibit the provision of certain products and services to countries, governments, and persons targeted by U.S. sanctions. U.S. sanctions that have been or may be imposed as a result of military conflicts in other countries may impact our ability to continue activities at future clinical trial sites within regions covered by such sanctions. If we fail to comply with export and import regulations and such economic sanctions, penalties could be imposed, including fines and/or denial of certain export privileges. These export and import controls and economic sanctions could also adversely affect our supply chain.

We and any of our third-party manufacturers or suppliers may use potent chemical agents and hazardous materials, and any claims relating to improper handling, storage or disposal of these materials could be time consuming or costly.

We and any of our third-party manufacturers or suppliers and current or potential future collaborators will use biological materials, potent chemical agents and may use hazardous materials, including chemicals and biological agents and compounds that could be dangerous to human health and safety of the environment. Our operations and the operations of our third-party manufacturers and suppliers also produce hazardous waste products. Federal, state and local laws and regulations govern the use, generation, manufacture, storage, handling and disposal of these materials and wastes. Compliance with applicable environmental laws and regulations may be expensive, and current or future environmental laws and regulations may impair our product development efforts. In addition, we cannot eliminate the risk of accidental injury or contamination from these materials or wastes. We do not carry specific biological or hazardous waste insurance coverage, and our property, casualty and general liability insurance policies specifically exclude coverage for damages and fines arising from biological or hazardous waste exposure or contamination. In the event of contamination or injury, we could be held liable for damages or be penalized with fines in an amount exceeding our resources, and our clinical trials or regulatory approvals could be suspended. Although we maintain workers' compensation insurance for certain costs and expenses we may incur due to injuries to our employees resulting from the use of hazardous materials or other work-related injuries, this insurance may not provide adequate coverage against potential liabilities. We do not maintain insurance for toxic tort claims that may be asserted against us in connection with our storage or disposal of biologic, hazardous or radioactive materials.

In addition, we may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations, which have tended to become more stringent over time. These current or future laws and regulations may impair our research, development or production efforts. Failure to comply with these laws and regulations also may result in substantial fines, penalties or other sanctions or liabilities, which could materially adversely affect our business, financial condition, results of operations and prospects.

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

Our operations could be subject to earthquakes, power shortages, telecommunications failures, water shortages, floods, hurricanes, typhoons, fires, extreme weather conditions, war, terrorism, medical epidemics and other natural or manmade disasters or business interruptions, for which we are predominantly self-insured. 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 were affected by a man-made or natural disaster or other business interruption. In addition, our corporate headquarters is located in Solana Beach, California near major earthquake faults and fire zones, and the ultimate impact on us of being located near major earthquake faults and fire zones and being consolidated in a certain geographical area is unknown. The occurrence of any of these business disruptions could seriously harm our operations and financial condition and increase our costs and expenses.

Unstable market and economic conditions may have serious adverse consequences on our business, financial condition and stock price.

From time to time, the global credit and financial markets have experienced extreme volatility and disruptions, including severely diminished liquidity and credit availability, rising interest and inflation rates, declines in consumer confidence, declines in economic growth, increases in unemployment rates and uncertainty about economic stability. There can be no assurance that future deterioration in credit and financial markets and confidence in economic conditions will not occur. Our general business strategy may be adversely affected by any such economic downturn, volatile business environment or continued unpredictable and unstable market conditions. The financial markets and the global economy may also be adversely affected by the current or anticipated impact of military conflict, including the ongoing conflict between Russia and Ukraine, terrorism or other geopolitical events. Sanctions imposed by the United States and other countries in response to such conflicts, including the one in Ukraine, may also adversely impact the financial markets and the global economy, and any economic countermeasures by the affected countries or others could exacerbate market and economic instability. If the current equity and credit markets deteriorate, it may make any necessary debt or equity financing more difficult, more costly and more dilutive. Failure to secure any necessary financing in a timely manner and on favorable terms could have a

material adverse effect on our growth strategy, financial performance and stock price and could require us to delay or abandon clinical development plans. In addition, there is a risk that one or more of our current service providers, manufacturers and other partners may not survive an economic downturn, which could directly affect our ability to attain our operating goals on schedule and on budget.

Changes in U.S. tax law may materially adversely affect our financial condition, results of operations and cash flows.

New income, sales, use or other tax laws, statutes, rules, regulations or ordinances could be enacted at any time, or interpreted, changed, modified or applied adversely to us, any of which could adversely affect our business operations and financial performance. In particular, the U.S. government may enact significant changes to the taxation of business entities including, among others, an increase in the corporate income tax rate and the imposition of minimum taxes or surtaxes on certain types of income. The likelihood of these changes being enacted or implemented is unclear. We are currently unable to predict whether such changes will occur. If such changes are enacted or implemented, we are currently unable to predict the ultimate impact on our business. We urge our investors to consult with their legal and tax advisors with respect to any changes in tax law and the potential tax consequences of investing in our common stock.

Item 1B. Unresolved Staff Comments.

None.

Item 1C. Cybersecurity.

Cybersecurity Risk Management and Strategy

We have developed and implemented a cybersecurity risk management program intended to protect the confidentiality, integrity, and availability of our critical systems and information. Our cybersecurity risk management program includes a cybersecurity incident response plan.

We design and assess our program based on ISO 27002 standards. This does not imply that we meet any particular technical standards, specifications, or requirements, only that we use the ISO 27002 as a guide to help us identify, assess, and manage cybersecurity risks relevant to our business.

We engage external resources that contribute to, and provide independent evaluation of, our existing cybersecurity practices and organizational risk assessment systems. We use established processes designed to identify, assess, and manage third-party service provider risks when third parties handle, possess, process, and store the Company's material information.

Our cybersecurity risk management program includes (i) a policy designed to help identify material cybersecurity risks to our critical systems, information, products, services, and our broader enterprise information technology environment; (ii) the use of external service providers to manage, assess, test and otherwise assist with aspects of our security controls; and (iii) a cybersecurity incident response plan that includes procedures for responding to cybersecurity incidents.

We have not identified risks from known cybersecurity threats, including as a result of any prior cybersecurity incidents, that have materially affected or are reasonably likely to materially affect us, including our operations, business strategy, results of operations, or financial condition. However, there can be no assurance that our cybersecurity prevention and mitigation efforts will always be successful, and it is possible that cybersecurity threats could have a material adverse effect on our business, operations, or financial condition in the future. See "*Risk Factors—Risks Related to Our Business Operations and Industry—Our business and operations may suffer in the event of information technology system failures, cyberattacks or deficiencies in our cybersecurity.*" under the heading "Risk Factors" of this Form 10-K.

Cybersecurity Governance

Our Board considers cybersecurity risk as part of its risk oversight function and has delegated to the Audit Committee (the "Committee") oversight of cybersecurity and other information technology risks. The Committee oversees implementation of our cybersecurity risk management program by management and out external information technology service provider.

The Committee receives regular updates from management on our cybersecurity risks. In addition, management updates the Committee, as necessary, regarding any material cybersecurity incidents, as well as any incidents with lesser impact potential.

The Committee also receives briefings from management on our cyber risk management program. Committee members receive presentations on cybersecurity topics from our finance department, including our Chief Financial Officer and external experts as part of the Board's continuing education on topics that impact public companies.

Our management team, including our Chief Financial Officer, and our external information technology services providers are responsible for assessing and managing our material risks from cybersecurity threats. We have outsourced implementation and day-to-day function of our overall cybersecurity risk management program to our third-party information technology service providers. Our management team supervises both our internal personnel and our retained external cybersecurity consultants.

Our management team supervises efforts to prevent, detect, mitigate, and remediate cybersecurity risks and incidents through various means, which may include briefings from the finance department or external information technology personnel; threat intelligence and other information obtained from governmental, public or private sources, including external consultants engaged by us; and alerts and reports produced by security tools deployed in the information technology environment.

Item 2. Properties.

Our corporate headquarters consists of an 1,800 square foot facility located in Solana Beach, California. In January 2024, we executed a three-year extension to the lease for our headquarters with a new expiration date of October 31, 2027. We believe that our existing facilities are adequate for our near-term needs. We believe that suitable additional or alternative space would be available if required in the future on commercially reasonable terms.

Item 3. Legal Proceedings.

We are not currently a party to any material legal proceedings. However, from time to time, we may become involved in legal proceedings or be subject to claims arising in the ordinary course of our business. Regardless of outcome, such proceedings or claims can have an adverse impact on us because of defense and settlement costs, diversion of resources and other factors, and there can be no assurances that favorable outcomes will be obtained.

Item 4. Mine Safety Disclosures.

Not applicable.

PART II

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

Market Information

Our common stock and warrants have been publicly traded on the Nasdaq Capital Market under the symbols "EFTR" and "EFTRW," respectively, since the completion of our Business Combination with Locust Walk Acquisition Corp. on August 25, 2021.

Holders of Common Stock

As of February 29, 2024, there were approximately 53 holders of record of our common stock. This number was derived from our shareholder records and does not include beneficial owners of our common stock whose shares are held in the name of various dealers, clearing agencies, banks, brokers and other fiduciaries.

Dividend Policy

We have never declared or paid any cash dividends on our capital stock. We intend to retain future earnings, if any, to finance the operation of our business and do not anticipate paying any cash dividends in the foreseeable future. Any future determination related to dividend policy will be made at the discretion of our Board after considering our financial condition, results of operations, capital requirements, business prospects and other factors the Board deems relevant, and subject to the restrictions contained in any future financing instruments. In addition, our loan and security agreement with Oxford Finance LLC governing our indebtedness contains restrictions on our ability to declare and pay cash dividends on our capital stock.

Securities Authorized for Issuance Under Equity Compensation Plans

See Item 12 of Part III of this Annual Report for information about our equity compensation plans which is incorporated by reference herein.

Performance Graph

Not applicable.

Recent Sales of Unregistered Securities and Use of Proceeds

None.

Issuer Repurchases of Equity Securities

None.

Item 6. [Reserved]

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

The following discussion and analysis should be read in conjunction with our audited consolidated financial statements as of and for the years ended December 31, 2023 and 2022 included elsewhere in this Annual Report. This discussion and analysis contains forward-looking statements based upon our current beliefs, plans and expectations that involve risks, uncertainties and assumptions. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth under "Risk Factors" or in other parts of this Annual Report.

Overview

We are a clinical-stage biopharmaceutical company focused on pioneering the development of a new class of oncology drugs we refer to as STRIs. Translation is the process in cells whereby the production of proteins is directed by information contained in genetic sequences. We utilized our proprietary selective translation regulation technology platform to internally discover a portfolio of small molecule STRI product candidates. Our product candidates target the eIF4F complex and its activating kinase, mitogen-activated protein interacting kinase ("MNK"). The eIF4F complex is a central node where two of the most frequently mutated signaling pathways in cancer, the PI3K-AKT and RAS-MEK pathways, converge to activate the translation of select mRNA into proteins that are frequent culprits in key disease-driving processes. Inhibition of any one of these targets simultaneously downregulates multiple disease-driving proteins before they are produced. Each of our product candidates is designed to act on a single protein that drives the expression of a network of multiple functionally related proteins, including oncoproteins, which are proteins whose aberrant function can cause cancer, immunosuppressive proteins in T cells and proteins known to drive drug resistance that together control tumor growth, survival and immune evasion.

Our lead product candidate, tomivosertib, is an oral small-molecule inhibitor of MNK that we are developing in combination with inhibitors of anti-PD-(L)1 therapy, for the treatment of patients with solid tumors. In the second quarter of 2021, we initiated dosing in KICKSTART, our randomized Phase 2b clinical trial evaluating tomivosertib in combination with pembrolizumab in patients with metastatic non-small cell lung cancer ("NSCLC") with PD-L1 expression level greater than or equal to 50% ("PD-L1≥50%"). Pembrolizumab is owned and marketed by Merck for frontline NSCLC and several other indications. We expect to report topline data from the KICKSTART trial in early April 2024. If we obtain positive results from this Phase 2b clinical trial, we plan to follow this trial with subsequent Phase 3 registration trials.

Our second product candidate, zotatifin, is an inhibitor of eIF4A, a component of the eIF4F complex, and is currently being evaluated in a Phase 1/2 clinical trial in patients with certain solid tumors. We have completed the initial dose escalation portion of this trial as well as the initial Phase 2 expansion portion in certain indications, including the evaluation of zotatifin in combination with fulvestrant and abemaciclib ("ZFA triplet") in patients with ER+ breast cancer. In light of the favorable safety results observed in the Phase 1/2 clinical trial and target engagement data generated to date, we resumed dose escalation of zotatifin dosed every other week, initially in the ZF doublet, in patients with ER+ breast cancer to determine if a higher dose of zotatifin can be utilized in future clinical studies. Subsequently we also initiated dose escalation in the ZFA triplet. In the first quarter of 2024, dose escalation of the ZF doublet concluded with the determination of 0.2 mg/kg zotatifin Q2W as the RP2D for the doublet. We expect to report additional data from dose escalation in the first half of 2024.

To date, we've reported interim data from five cohorts including patients with ER+ breast cancer, which demonstrated that zotatifin was generally well tolerated and showed signals of activity, including partial responses in heavily pretreated ER+ breast cancer patients. We reported topline results for the fully enrolled ZFA triplet cohort in ER+ breast cancer at the American Society of Clinical Oncology ("ASCO") 2023 Annual Meeting in June, where partial responses were observed in 5 of 19 (26%) evaluable patients treated with the ZFA triplet. In addition, a partial response was observed in 1 of 3 (33%) patients in the first resumed dose escalation cohort of the ZF doublet. Both ZFA and ZF combinations were generally well tolerated with a large majority of adverse events Grade 1 or 2. We reported mature data for the ZFA triplet cohort at the 2023 San Antonio Breast Cancer Symposium (SABCS®) in December, where median PFS was 7.4 months.

If zotatifin continues to demonstrate an adequate safety profile and sufficient signals of activity, we plan to continue clinical development of zotatifin, potentially as a combination in a randomized trial against a relevant comparator control group. We are currently evaluating plans to test the ZFA triplet in a randomized trial after we finalize the dose and schedule in the first half of 2024. We anticipate interacting with FDA on development strategy utilizing the fast-track designation received in 2023.

We have also completed a Phase 1b clinical trial evaluating zotatifin as an antiviral agent against SARS-CoV-2. The study was a double-blind, randomized, placebo-controlled trial evaluating the safety and antiviral activity of a single dose of zotatifin. In this trial, zotatifin was found to be safe and well-tolerated, and demonstrated favorable trends in several assessments of viral clearance compared to placebo. We have entered into a global collaboration and license agreement with Pfizer for our earliest stage program, inhibitors of eIF4E, and Pfizer is currently conducting investigational new drug application (“IND”) enabling studies for this program.

Since our inception in 2012 we have devoted substantially all of our resources to raising capital, identifying potential product candidates, establishing our intellectual property portfolio, conducting preclinical studies and clinical trials, establishing arrangements with third parties for the manufacture of our product candidates and related raw materials, and providing general and administrative support for these operations. We do not have any products approved for sale and have not generated any revenue from product sales. As of December 31, 2023, we have raised a total of $325.8 million to fund our operations, comprised of aggregate gross proceeds of $150.0 million from the sale and issuance of convertible preferred stock, gross proceeds of $67.0 million from the issuance of common stock in connection with the Business Combination in August 2021, $42.0 million in collaboration revenue under our research collaboration and license agreement with Pfizer ("Pfizer Agreement"), $35.0 million from loans under credit facilities, $16.2 million in gross proceeds from the sale of common stock in the May 2023 Registered Direct Offering (as defined below) and June 2023 Registered Direct Offering (as defined below), $7.5 million in gross proceeds from the sale of common stock under our Controlled Equity Offering Sales Agreement (“Sales Agreement”) with Cantor Fitzgerald & Co ("Cantor"), $5.0 million in grant revenue under the Research Subaward Agreement with The Regents of the University of California, on behalf of its San Francisco campus ("UCSF"), and $3.1 million in gross proceeds from the sale of common stock under the equity purchase agreement ("Purchase Agreement") with Lincoln Park Capital Fund, LLC ("Lincoln Park"). Other than with respect to the net income generated as a result of revenue under the Pfizer Agreement generated in 2020 and the net income generated in 2021 as a result of the change in valuation of the earn-out liability in 2021, we have incurred significant operating losses since our inception. For the years ended December 31, 2023 and 2022, our net loss for the respective periods was $35.8 million and $22.7 million. As of December 31, 2023 and 2022, we had an accumulated deficit of $179.4 million and $143.6 million, respectively. Substantially all of our operating losses resulted from expenses incurred in connection with the research and development of our product candidates and general and administrative costs associated with our operations.

We expect to continue to incur significant expenses and losses for at least the next several years. We anticipate our expenses will increase substantially as we continue our development of, seek regulatory approval for and potentially commercialize any approved product candidates, hire additional personnel, protect our intellectual property and incur additional costs associated with being a public company. Our net losses may fluctuate significantly from quarter-to-quarter and year-to-year, depending on the timing of our clinical trials and preclinical studies and our expenditures on other research and development activities. As of December 31, 2023, we had $18.4 million in cash, cash equivalents and short-term investments. To fund further operations, we will need to raise additional capital. Our current capital resources will not be sufficient for us to complete the clinical development of any of our product candidates or, if applicable, to prepare for commercializing any product candidate which may receive approval from the FDA or comparable foreign regulatory authority. Accordingly, we expect to finance our cash needs through a combination of equity offerings, debt financings, or other capital sources, including potential additional collaborations, licenses, and other similar arrangements. Adequate funding may not be available to us on acceptable terms, if at all. Our failure to raise capital or enter into such other arrangements when needed would have a negative impact on our financial condition and could force us to delay, limit, reduce, or terminate our research and development programs or other operations, or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

Reverse Stock Split

On January 9, 2024, we filed a Certificate of Amendment to our Amended and Restated Certificate of Incorporation, as amended to date, with the Secretary of State of the State of Delaware to effect a reverse stock split of our common stock at a ratio of 1-for-25 (the “Reverse Stock Split”), as authorized at our 2023 annual meeting of stockholders held on June 22, 2023. We effected the Reverse Stock Split on January 12, 2024. The number of shares of common stock that we are authorized to issue was proportionally reduced from 1,000,000,000 shares to 40,000,000 shares and the par value of its common stock remains unchanged at $0.0001 per share.

Share and per share amounts in this Annual Report are presented after giving effect to the Reverse Stock Split. Proportionate adjustments were made to the per share exercise price and number of shares of common stock issuable

under all outstanding stock options and warrants. In addition, proportionate adjustments have been made to the number of shares of common stock reserved for our equity incentive compensation plans.

Financial Operations Overview

Revenue

We currently have no products approved for sale, and revenue recognized in 2022 has been from grant revenue. In the future, we may generate additional revenue from collaboration, grant or license agreements we have entered into, or may enter into, with respect to our product candidates, as well as product sales from any approved product. Our ability to generate product revenues will depend on the successful development and eventual commercialization of our product candidates. If we fail to complete the development of our product candidates in a timely manner or to obtain regulatory approval for our product candidates, our ability to generate future revenue and our results of operations and financial position would be materially adversely affected.

Pfizer Agreement

In December 2019, we entered into the Pfizer Agreement, to research and develop small molecules that target eIF4E. Pursuant to the Pfizer Agreement, we granted Pfizer a worldwide, exclusive license, with a right to sublicense, under certain of our patents, know-how, and materials to use, develop, manufacture, commercialize, and otherwise exploit compounds or products targeting eIF4E, for any and all indications. Under the agreement, we were responsible for initial research in collaboration with Pfizer, and Pfizer is responsible for all further development of this development program, including submission of an IND and conducting all clinical development and commercialization activities.

Pursuant to the Pfizer Agreement, we received an upfront, one-time, non-refundable, non-creditable payment of $15 million dollars from Pfizer. Pfizer was obligated to reimburse us for costs incurred for research performed, up to a specified cap in the low double-digit millions. Upon the achievement of specified development, regulatory and sales milestones, Pfizer will be obligated to pay us up to $480 million dollars in the aggregate, as well as to pay us high single-digit percentage royalties on annual net sales of each licensed product. See “Business — Our Collaboration and License Agreements” included within this Annual Report on Form 10-K, for additional information about this agreement, including with respect to potential payments to us thereunder.

DARPA Subaward Agreement

In 2021, we entered into a Research Subaward Agreement with UCSF (the "Subaward Agreement"), whereby up to $5.0 million in allowable costs were reimbursable for clinical and manufacturing activities related to zotatifin for the treatment of COVID-19. Under the terms of Subaward Agreement, we were obligated to provide financial and technical reports to UCSF on a periodic basis. We exhausted the full $5.0 million of allowable costs under the Subaward Agreement in 2022. In February 2023, we reported positive top-line results from a Phase 1b clinical trial of zotatifin for the treatment of COVID-19, which was partially funded by the Subaward Agreement. While we believe the data generated from this trial warrant progression of the COVID-19 program into later-stage development, we are focused on developing our assets in oncology and do not currently plan to pursue further development in COVID-19 unless it secures a non-dilutive source of funding.

Operating Expenses

Research and Development Expenses

Research and development expenses primarily consist of costs associated with the preclinical and clinical development of our product candidates. Our research and development expenses include:

- external costs, including:
    - expenses incurred under arrangements with third parties, such as CROs and consultants and advisors that perform biology, chemistry, toxicology, clinical and regulatory functions;
    - costs related to acquiring and manufacturing preclinical and clinical trial materials, including continued testing such as process validation and stability of drug product;

- costs related to toxicology testing and other research and preclinical studies; and
- costs related to compliance with regulatory requirements and license fees.

- internal costs, including:
  - salaries and related overhead expenses, which include stock-based compensation and benefits, for personnel in research and development functions; and
  - facilities, depreciation, insurance and other expenses related to research and development.

We expense research and development costs as incurred. We account for nonrefundable advance payments for goods and services that will be used in future research and development activities as expenses when the service has been performed or when the goods have been received. We track external expenses on a development program and other program specific basis. However, we do not track internal costs on a program specific basis because these costs primarily relate to personnel and facilities, which are deployed across multiple programs under development.

The following table summarizes our research and development expenses for the periods indicated (in thousands).

	Year Ended December 31,	
	2023	2022
External development program expenses:		
tomivosertib (eFT508)	$ 9,460	$ 8,918
zotatifin (eFT226)	6,422	6,695
eIF4E	—	8
Unallocated internal research and development expenses:		
Personnel related	5,211	5,390
Other	1,826	2,302
Total research and development expenses	$ 22,919	$ 23,313

We expect our research and development expenses to increase substantially for the foreseeable future as we continue the development of our product candidates, particularly as we move into later stages of clinical development which typically cost more. The process of conducting clinical trials and preclinical studies necessary to obtain regulatory approval is costly and time-consuming. We may never succeed in achieving marketing approval for any of our product candidates. At this time, we cannot reasonably estimate the nature, timing or costs of the efforts that will be necessary to complete the remainder of the development of any of our product candidates or the period, if any, in which material net cash inflows from these product candidates may commence. We anticipate we will make determinations as to which product candidates and programs to pursue and how much funding to direct to each product candidate and program on an ongoing basis in response to clinical and preclinical results, regulatory developments, ongoing assessments as to each product candidate's and program's commercial potential, and our ability to enter into collaborations, to the extent we determine the resources or expertise of a collaborator would be beneficial for a given product candidate or program.

Our development costs may vary significantly based on factors such as:

- per patient trial costs;
- the number and scope of trials required for approval and preclinical and IND-enabling studies;
- the number of sites included in the trials;
- the length of time required to enroll suitable patients;
- the number of doses that patients receive;
- the number of patients that participate in the trials;
- the drop-out or discontinuation rates of patients;
- the duration of patient follow-up;
- the extent of reimbursement for the costs of approved therapies used in our combination trials;

- potential additional safety monitoring or other studies requested by regulatory agencies;
- the number and complexity of procedures, analyses and tests performed during the trial;
- the phase of development of the product candidate;
- the impact of any interruptions to our operations or to those of the third parties with whom we work due to any healthcare emergencies;
- the efficacy and safety profile of the product candidate; and
- the extent to which we establish additional collaboration, license or other arrangements.

General and Administrative Expenses

General and administrative expenses consist primarily of salaries and other related costs, including stock-based compensation and benefits, and consulting fees for finance, accounting, and other administrative functions. Other costs include legal fees relating to patent and corporate matters, insurance, and facility costs not otherwise included in research and development expenses.

We expect our general and administrative expenses will increase substantially for the foreseeable future as we advance our product candidates through clinical development. We also will incur additional expenses as a result of operating as a public company, including expenses related to compliance with the rules and regulations of the SEC and the Nasdaq listing rules, additional insurance expenses, investor relations activities and other administrative and professional services. In addition, if we obtain regulatory approval for any of our product candidates, we expect to incur expenses associated with building a sales and marketing team if we choose to commercialize such product candidates on our own.

Other Income (Expense)

Interest Income

Interest income consists of interest earned on our cash equivalents and short-term investments.

Interest Expense

Interest expense recorded in the years ended December 31, 2023 and 2022 consisted of amounts attributable to our outstanding term loan with Oxford Financial LLC (“Oxford”).

Other Income (Expense)

We assumed private placement warrants in connection with the Business Combination transaction that are required to be accounted for as liabilities and remeasured to fair value at each reporting date, with changes in the fair value reported as a component of other income (expense).

In January 2022, we entered into the Purchase Agreement with Lincoln Park and recorded other expense in connection with commitment shares of common stock issued to Lincoln Park in the transaction.

Change in Fair Value of Earn-Out Liability

We determined that the contingent obligation to issue Earn-Out Shares to existing Old eFFECTOR stockholders was not indexed to our stock under Accounting Standards Codification ("ASC") 815-40 and was therefore required to be accounted for as a liability and remeasured at fair value each reporting period, with changes in fair value reported as a component of other income (expense). Our achievement period for the earn-out expired on August 25, 2023 as the Triggering Event did not occur during the two-year period following the close date of the Business Combination. As such, Old eFFECTOR stockholders and option holders are no longer eligible to receive Earn-Out shares as of August 25, 2023.

Results of Operations

Comparison of the Years Ended December 31, 2023 and 2022

The following table sets forth our results of operations for the years ended December 31, 2023 and 2022 (in thousands):

	Year Ended December 31,		
	2023	2022	Change
Grant revenue	—	3,553	(3,553)
Operating expenses:			
Research and development	22,919	23,313	(394)
General and administrative	10,925	12,643	(1,718)
Total operating expenses	33,844	35,956	(2,112)
Loss from operations	(33,844)	(32,403)	(1,441)
Other income (expense), net	(1,967)	9,738	(11,705)
Net loss	$ (35,811)	$ (22,665)	$ (13,146)

Grant Revenue

Grant revenue was zero and $3.6 million for the years ended December 31, 2023 and 2022, respectively. The decrease in grant revenue is due to the timing associated with grant completion, which concluded as of December 31, 2022.

Research and Development Expenses

Research and development expenses were $22.9 million and $23.3 million for the years ended December 31, 2023 and 2022, respectively. The decrease in research and development expenses of $0.4 million was primarily due to a $2.0 million decrease for the zotatifin COVID-19 program, a $0.5 million decrease in consultant costs, and a $0.2 million decrease in personnel-related costs as compared to the year ended December 31, 2022. These costs were partially offset by a $1.7 million increase in costs associated with the eFT226-002 (zotatifin oncology) trial and a $0.6 million increase for the tomivosertib program due primarily to increased costs associated with the eFT508-011 (KICKSTART) trial.

General and Administrative Expenses

General and administrative expenses were $10.9 million and $12.6 million for the years ended December 31, 2023 and 2022, respectively. The decrease in general and administrative expenses during this period of $1.7 million was primarily related to a decrease of $1.0 million in other general and administrative costs primarily related to insurance costs and a $0.6 million decrease in consultant and audit related costs. Further, there was a decrease of $0.2 million in personnel-related costs as compared to the year ended December 31, 2022. These costs were partially offset by a $0.1 million increase in patent related fees as compared to the year ended December 31, 2022.

Other Income (Expense)

Other expense was $2.0 million for the year ended December 31, 2023 and other income was $9.7 million for the year ended December 31, 2022. The decrease of $11.7 million was mostly due to the gain on change in fair value of the earn-out liability and warrant liability during the year ended December 31, 2022, partially offset by $1.2 million in other expense recorded in 2022 related to the Purchase Agreement with Lincoln Park.

Liquidity and Capital Resources

Sources of Liquidity

From our inception through December 31, 2023, we have raised a total of $325.8 million to fund our operations, comprised of aggregate gross proceeds of $150.0 million from the sale and issuance of convertible preferred stock, gross proceeds of $67.0 million from the issuance of common stock in connection with the Business

Combination in August 2021, $42.0 million in collaboration revenue under our research collaboration and license agreement with Pfizer, $35.0 million from loans under credit facilities, $16.2 million in gross proceeds from the sale of common stock in the May 2023 Registered Direct Offering and June 2023 Registered Direct Offering, $7.5 million in gross proceeds from the sale of common stock under the ATM Offering Program, $5.0 million in grant revenue under the Subaward Agreement with UCSF, and $3.1 million in gross proceeds from the sale of common stock to Lincoln Park under the Purchase Agreement ($46.9 million remaining available for sale under the Purchase Agreement as of December 31, 2023).

Our cash and cash equivalents and short-term investments totaled $18.4 million as of December 31, 2023. Until required for use in our business, we typically invest our cash in investments that are highly liquid, readily convertible to cash with original maturities of 1 year or less at the date of purchase. We attempt to minimize the risks related to our cash and cash equivalents and investments by maintaining balances in accounts only with accredited financial institutions and, consequently, we do not believe we are subject to unusual credit risk beyond the normal credit risk associated with ordinary commercial banking relationships.

Oxford Loan Facility

In March 2021, we entered into a Loan and Security Agreement ("Oxford LSA") with Oxford, pursuant to which we could borrow up to $30.0 million, issuable in two separate tranches of $20.0 million ("Term A Loan") and $10.0 million ("Term B Loan"), collectively referred to as the Oxford Loans. In March 2021, we borrowed $20.0 million of the Term A Loan. The Term A Loan had an interest-only period that commenced upon the borrowing with interest due and payable upon the first day of each month.

On February 22, 2022, we entered into an amendment to the Oxford LSA whereby the interest only period for the Term A Loans will end on March 1, 2024, instead of May 1, 2023. In connection with the amendment, the maturity of the Term A Loans was extended from March 18, 2026 to February 1, 2027. The principal payments due under the Oxford Loans, and the related accrued final payment, have been classified as current liabilities as of December 31, 2022 and December 31, 2023, due to our assessment that the material adverse change clause under the Oxford Loans is not within our control. We have not been notified of an event of default by the lender as of the date of this report.

The Term B Loan would have become available upon achievement of certain clinical development milestones, and was available until the earlier of (i) June 30, 2023, (ii) forty-five days after the occurrence of such clinical development milestone, and (iii) the occurrence of an event of default. As we did not achieve the clinical development milestones by June 30, 2023, we no longer have access to the additional $10.0 million under the Term B Loan.

We are required to make a final payment equal to 5.5% of each funded tranche at maturity, which has been recorded as a debt discount and is being amortized over the term of the debt arrangements.

Purchase Agreement with Lincoln Park

On January 24, 2022, we entered into the Purchase Agreement with Lincoln Park which provides for the sale to Lincoln Park up to $50.0 million of shares of our common stock over the thirty-six (36) month term of the Purchase Agreement, subject to certain conditions. In connection with the Purchase Agreement, Lincoln Park made an initial purchase of $3.0 million of shares of common stock, which equated to 22,304 shares of common stock, and we issued 5,717 shares of common stock to Lincoln Park as a commitment fee in connection with entering into the Purchase Agreement. As of December 31, 2023, a total of 1,200 shares of common stock have been sold in addition to the upfront amount, with such shares sold during the three months ended June 30, 2022. The minimum price that we can sell shares to Lincoln Park is $1.00 per share. No assurance can be given that we will sell any additional shares of common stock under the Purchase Agreement, or, if we do, as to the price or amount of shares of common stock that we sell or the dates when such sales will take place.

At-the-Market Offering Program with Cantor

In September 2022, we entered into the Sales Agreement with Cantor, under which we may, from time to time, sell shares of our common stock having an aggregate offering price of up to $50.0 million (the "ATM Offering Program"). Sales of the shares of common stock will be made at prevailing market prices at the time of sale, or as otherwise agreed with Cantor. We will pay a commission to Cantor of up to 3.0% of the gross proceeds of any shares of common stock sold under the Sales Agreement. During the year ended December 31, 2023, we sold an aggregate of 537,200 shares of common stock at a weighted-average price of $13.48 per share for gross proceeds of approximately $7.2 million under the ATM Offering Program. We incurred offering costs in connection with the ATM Offering Program, including commissions, of approximately $0.4 million during the year ended December 31, 2023.

Registered Direct Offerings

In May 2023, we entered into a securities purchase agreement with a single institutional investor in which 188,000 shares of common stock were issued in a registered direct offering (the "May 2023 Registered Direct Offering"). In connection with the May 2023 Registered Direct Offering, we issued 270,015 shares of common stock in the form of pre-funded warrants, which were immediately exercised. In a concurrent private placement, we issued warrants to purchase up to 458,015 shares of common stock with an exercise price of $13.25 per share ("May 2023 Common Stock Warrants"). The May 2023 Common Stock Warrants were exercisable immediately upon issuance and will expire on November 30, 2028, which is five and one-half years from the issuance date. Additionally, we issued H.C. Wainwright & Co., LLC (the "Placement Agent") warrants to purchase up to 32,060 shares of common stock with an exercise price of $20.47 per share ("May 2023 Placement Agent Warrants"). The May 2023 Placement Agent Warrants will expire on May 26, 2028, which is five years following the commencement of sales in the May 2023 Registered Direct Offering. We received gross proceeds from the May 2023 Registered Direct Offering of $7.5 million with net proceeds of approximately $6.7 million after deducting $0.8 million in commissions and other transaction costs.

In June 2023, we entered into an additional securities purchase agreement with the same institutional investor in which 238,000 shares of common stock were issued in a registered direct offering (the "June 2023 Registered Direct Offering"). In connection with the June 2023 Registered Direct Offering, we issued 72,578 shares of common stock in the form of pre-funded warrants, which were immediately exercised. In a concurrent private placement, we issued warrants to purchase up to 310,577 shares of common stock with an exercise price of $25.00 per share ("June 2023 Common Stock Warrants"). The June 2023 Common Stock Warrants were exercisable immediately upon issuance and will expire on December 8, 2028, which is five and one-half years from the issuance date. Additionally, we issued the Placement Agent warrants to purchase up to 21,739 shares of common stock with an exercise price of $35.1575 per share ("June 2023 Placement Agent Warrants"). The June 2023 Placement Agent Warrants will expire on June 6, 2028, which is five years following the commencement of sales in the June 2023 Registered Direct Offering. We received gross proceeds from the June 2023 Registered Direct Offering of $8.7 million with net proceeds of approximately $7.8 million after deducting $0.9 million in commissions and other transaction costs.

In January 2024, we entered into an additional securities purchase agreement with a new single institutional investor in which 338,000 shares of common stock were issued in a registered direct offering (the "January 2024 Registered Direct Offering"). In connection with the January 2024 Registered Direct Offering, we issued 1,150,834 shares of common stock in the form of pre-funded warrants, 497,834 of which were subsequently exercised. We concurrently issued warrants to purchase up to 1,488,834 shares of common stock with an exercise price of $9.95 per share ("January 2024 Common Stock Warrants"). The January 2024 Common Stock Warrants were exercisable immediately upon issuance and will expire on July 29, 2027, which is three and one-half years from the issuance date. Additionally, we issued the Placement Agent warrants to purchase up to 104,218 shares of common stock with an exercise price of $12.5938 per share (“January 2024 Placement Agent Warrants"). The January 2024 Placement Agent Warrants will expire on July 29, 2027, which is three and one-half years following the commencement of sales in the January 2024 Registered Direct Offering. We received gross proceeds from the January 2024 Registered Direct Offering of $15.0 million with net proceeds of approximately $13.6 million after deducting $1.4 million in commissions and other transaction costs.

As of July 31, 2023, our public float exceeded $75 million, based on 2,427,820 shares of outstanding common stock held by non-affiliates and at a price of $34.75 per share, the closing price of our common stock on June 6, 2023 which was the highest reported sale price of our common stock on the Nasdaq Capital Market within 60 days of July 31, 2023. As a result of our public float being above $75 million, we were no longer subject to General Instruction I.B.6. of Form S-3, which had limited the amounts we can raise through primary public offerings of securities in any twelve-month period using shelf registration statements to an aggregate of one-third of our public float, which is referred to as the baby shelf rules. However, as March 15, 2024, our public float was approximately $65.6 million, based on 3,914,309 shares of outstanding common stock held by non-affiliates and at a price of $16.95 per share, which was the last reported sale price of our common stock on the Nasdaq Capital Market on March 4, 2024. As a result of our public float being below $75 million, we will be limited by the baby shelf rules until such time as our public float exceeds $75 million, which means we only have the capacity to sell shares up to one-third of our public float under shelf registration statements in any twelve-month period. The sales of securities in the May 2023 Registered Direct Offering and the June 2023 Registered Direct Offering were completed pursuant to the baby shelf rules and will limit our limit our capacity to sell shares under our current shelf registration statement until we reach the 12-month anniversary of such offerings. The sales of securities in the January 2024 Registered Direct Offering were not limited by the baby shelf rules and will not limit our capacity under our current shelf registration statement. We will remain constrained by the baby shelf rules under our Form S-3 shelf registration statement until such time as our public float exceeds $75 million, at which time, the number of securities we may sell under a Form S-3 registration statement will no longer be limited by the baby shelf rules.

Funding Requirements

As of December 31, 2023, we had $18.4 million in cash and cash equivalents and short-term investments, which, together with the $13.6 million in net proceeds received from the January 2024 Registered Direct Offering, and based on our current operating plan, we estimate is sufficient to fund operations into the first quarter of 2025. However, we have prepared cash flow forecasts which indicate that based on our expected operating cash flows, without taking into account future projected cash inflows, there is substantial doubt about our ability to continue as a going concern within twelve months after the date that the financial statements for the year ended December 31, 2023, are issued. We have based this estimate on assumptions that may prove to be wrong, and we could use our capital resources sooner than we expect. Furthermore, our operating plans may change and we may need additional funds sooner than planned. Additionally, the process of testing product candidates in clinical trials is costly, and the timing of progress in these trials is uncertain. Our future capital requirements are difficult to forecast and will depend on many factors, including but not limited to:

- the type, number, scope, progress, expansions, results of and timing of clinical trials and preclinical studies of our product candidates which we are pursuing or may choose to pursue in the future;
- the costs, timing and outcome of regulatory review of our product candidates;
- the costs of obtaining, maintaining and enforcing our patents and other intellectual property rights;
- the costs and timing of manufacturing for our product candidates, including commercial manufacturing if any product candidate is approved;
- our efforts to enhance operational systems and hire additional personnel to satisfy our obligations as a public company, including enhanced internal controls over financial reporting;
- the costs associated with hiring additional personnel and consultants as our clinical and preclinical activities increase;
- the costs and timing of establishing or securing sales and marketing capabilities if any product candidate is approved;
- our ability to achieve sufficient market acceptance, coverage and adequate reimbursement from third-party payors and adequate market share and revenue for any approved products;
- any delays and cost increases that result from the COVID-19 pandemic or future epidemic diseases;

- the terms and timing of establishing and maintaining additional collaborations, licenses and other similar arrangements; and
- the costs associated with any products or technologies that we may in-license or acquire.

We have no other committed sources of capital, other than potential future sales under the Purchase Agreement with Lincoln Park and the ATM Offering Program with Cantor. Until we can generate a sufficient amount of product revenue to finance our cash requirements, if ever, we expect to finance our future cash needs primarily through equity offerings, debt financings or other capital sources, including potential additional collaborations, licenses and other similar arrangements. However, we may be unable to raise additional funds or enter into such other arrangements when needed on favorable terms or at all. To the extent that we raise additional capital through the sale of equity or convertible debt securities, the ownership interest of our stockholders will be or could be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our common stockholders. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we raise additional funds through other collaborations or licensing arrangements with third parties, 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. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our research and development programs or other operations, or grant rights to develop and market product candidates to third parties that we would otherwise prefer to develop and market ourselves.

Cash Flows

The following table sets forth a summary of the net cash flow activity for each of the periods indicated (in thousands):

	Year Ended December 31,	
	2023	2022
Net cash provided by (used in):		
Operating activities	$ (29,550)	$ (25,899)
Investing activities	14,484	(17,860)
Financing activities	21,233	2,765
Net increase (decrease) in cash	$ 6,167	$ (40,994)

Operating Activities

During the year ended December 31, 2023, net cash used in operating activities was $29.6 million, which resulted from a net loss of $35.8 million adjusted for changes in operating assets and liabilities and non-cash charges. Non-cash charges and other adjustments included $4.6 million in stock-based compensation, $0.5 million in net accretion of discount and amortization of premium on investments, $0.3 million in non-cash interest expense and $0.1 million in depreciation expense. Changes in operating assets and liabilities included a $0.8 million decrease in prepaid expenses and other assets related to amortization of prepaid public company insurance policies and a $0.9 million increase in accounts payable due to timing of invoices paid.

During the year ended December 31, 2022, net cash used in operating activities was $25.9 million, which resulted from a net loss of $22.7 million adjusted for changes in operating assets and liabilities and non-cash charges. Non-cash charges and other adjustments included $12.1 million from a gain recorded from the change in fair value of the earn-out liability, $5.3 million in stock-based compensation, $1.2 million other expense recorded in connection with the Purchase Agreement with Lincoln Park, $0.6 million from a gain recorded from change in fair value of liability-classified warrants and $0.3 million in non-cash interest expense. Changes in operating assets and liabilities included a $1.8 million decrease in prepaid expenses and other assets related to the amortization of prepaid public company insurance policies and a reduction in prepaid research and development balances, and a $1.0 million increase in accounts payable.

Investing Activities

During the year ended December 31, 2023, net cash provided by investing activities was $14.5 million as a result of the maturities of short-term investments, partially offset by purchases during the period.

During the year ended December 31, 2022, net cash used in investing activities was $17.9 million as a result of the purchases of short-term investments, partially offset by maturities during the period.

Financing Activities

During the year ended December 31, 2023, net cash provided by financing activities was $21.2 million, which was primarily the result of $14.5 million in net proceeds from the issuance of common stock in the May 2023 Registered Direct Offering and June 2023 Registered Direct Offering as well as $6.6 million in net proceeds from the issuance of common stock under the ATM Offering Program during the period.

During the year ended December 31, 2022, net cash provided by financing activities was $2.8 million, which was the result of net proceeds from the issuance of common stock to Lincoln Park under the Purchase Agreement and net proceeds from the issuance of common stock under the ATM Offering Program during the period.

Critical Accounting Policies and Estimates

The SEC defines critical accounting policies as those that are, in management's view, important to the portrayal of our financial condition and results of operations and demanding of management's judgment. Management's discussion and analysis of our financial condition and results of operations are based on our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States ("GAAP"). The preparation of these consolidated financial statements required estimates and judgments that affect the reported amounts of assets, liabilities, and expenses and the disclosure of contingent assets and liabilities in the consolidated financial statements. On an ongoing basis, we evaluate our estimates and judgments, including those related to accrued expenses and share-based compensation. We base our estimates on historical experience, known trends and events, and various other factors that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

While our significant accounting policies are more fully described in Note 2 to our consolidated financial statements appearing elsewhere in this Annual Report, we believe that the following accounting policies are the most critical for fully understanding and evaluating our financial condition and results of operations.

Clinical Trial Accruals and Preclinical Studies

We record expenses resulting from our obligations under contracts with vendors and consultants, CROs and clinical sites in connection with conducting clinical trials and preclinical studies. The financial terms of these contracts are subject to negotiations which vary from contract to contract and may result in payment flows that do not match the periods over which materials or services are provided under such contracts. We reflect clinical trial and preclinical study expenses in our consolidated financial statements by matching those expenses with the period in which services and efforts are expended. We account for these expenses according to the progress of the clinical trial or preclinical study as measured by the timing of various aspects of the clinical trial, preclinical study, or related activities. We determine accrual estimates through review of the underlying contracts along with preparation of financial models taking into account correspondence with clinical and other key personnel and third-party service providers as to the progress of the clinical trials, preclinical studies, or other services being conducted. During the course of a clinical trial or preclinical study, we adjust our rate of expense recognition if actual results differ from our estimates. To date, there have been no material differences from our estimates to the amount incurred. However, due to the nature of estimates, we cannot assure you that we will not make changes to our estimates in the future as we become aware of additional information about the status or conduct of our clinical trials, preclinical studies or other research activities.

Emerging growth company and smaller reporting company status

Following the Business Combination, we qualify as an emerging growth company under the JOBS Act. As such, we can take advantage of an extended transition period for complying with new or revised accounting standards. This allows an emerging growth company to delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have elected to avail ourselves of this exemption from new or revised accounting standards and, therefore, our consolidated financial statements may not be comparable to companies that comply with new or revised accounting pronouncements as of public company effective dates. We also intend to rely on other exemptions provided by the JOBS Act, including without limitation, not being required to comply with the auditor attestation requirements of Section 404(b) of Sarbanes-Oxley.

We will remain an emerging growth company until the earliest of (i) December 31, 2026; (ii) the last day of the fiscal year in which we have total annual gross revenue of at least $1.235 billion; (iii) the last day of the fiscal year in which we are deemed to be a “large accelerated filer” as defined in Rule 12b-2 under the Exchange Act, which would occur if the market value of our common stock held by non-affiliates exceeded $700.0 million as of the last business day of the second fiscal quarter of such year; or (iv) the date on which we have issued more than $1.0 billion in nonconvertible debt securities during the prior three-year period.

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

Recent Accounting Pronouncements

See Note 2 to our consolidated financial statements contained elsewhere in this Annual Report for information concerning recent accounting pronouncements.

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

Interest rate risk

The market risk inherent in our financial instruments and in our financial position represents the potential loss arising from adverse changes in interest rates. As of December 31, 2023, we had $14.9 million in cash and cash equivalents, consisting of non-interest operating accounts, interest-bearing money market funds and U.S. Treasury securities. As of December 31, 2023, we had $3.5 million in short-term investments, consisting of U.S. Treasury securities. Our primary exposure to market risk is interest rate sensitivity, which is affected by changes in the general level of U.S. interest rates. Due to the short-term, low-risk profile of our money market funds and short-term investments, an immediate 100 basis point change in interest rates would not have a material effect on the fair market value of our cash equivalents.

Our Oxford Term A Loan carries a variable interest rate equal to the greater of (i) 7.7% and (ii) the sum of the prime rate plus 4.45%. The impact of a 100 basis point change in market interest rate would not have a material impact on our financial condition and/or results of operations.

Foreign currency exchange risk

Our reporting and functional currency is the U.S. dollar. We currently do not have significant exposure to foreign currencies as we hold no foreign exchange contracts, option contracts, or other foreign hedging arrangements. Our operations may be subject to fluctuations in foreign currency exchange rates in the future.

Effects of inflation

Inflation generally affects us by increasing our costs of labor and research and development. We believe inflation has not had a material effect on our results of operations during the periods presented.

Item 8. Consolidated Financial Statements and Supplementary Data.

The consolidated financial statements required pursuant to this item are included in Item 15 of this Annual Report and are presented beginning on page F-1.

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

None.

Item 9A. Controls and Procedures.

Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed by us in our reports that we file or submit pursuant to the Exchange Act, is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow for timely decisions regarding required disclosure. In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives, and management is required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Under the supervision and with participation of our management, including our Chief Executive Officer and our Chief Financial Officer, we carried out an evaluation of the effectiveness of our disclosure controls and procedures (as such term is defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) as of the end of the period covered by this report. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures were effective at a reasonable level of assurance 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 financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. 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 for external purposes in accordance with GAAP. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions or that the degree of compliance with the policies or procedures may deteriorate.

Our management assessed the effectiveness of our internal control over financial reporting as of December 31, 2023 based on the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in its 2013 Internal Control — Integrated Framework. Based on this assessment, our management has concluded that our internal control over financial reporting was effective as of December 31, 2023.

Attestation Report of the Registered Public Accounting Firm

This Annual Report does not include an attestation report of our registered public accounting firm due to an exemption provided by the JOBS Act for "emerging growth companies."

Changes in Internal Control over Financial Reporting

There have been no changes in our internal control over financial reporting during the 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.

None.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

Management and Board of Directors

The following sets forth certain information, as of February 15, 2024, concerning the persons who serve as our executive officers and members of our Board.

Name	Age	Position
Executive Officers		
Stephen T. Worland, Ph.D.	66	President, Chief Executive Officer and Director
Michael Byrnes	47	Chief Financial Officer
Douglas Warner, M.D.	52	Chief Medical Officer
Non-Employee Directors		
Brian M. Gallagher, Jr., Ph.D. (1)(3)	54	Chair
Elizabeth P. Bhatt (3)	56	Director
Chris Ehrlich (1)(2)	54	Director
Kristen Harrington-Smith (2)	51	Director
Barbara Klencke, M.D. (2)	66	Director
Caroline Loewy (1)	58	Director

(1) Member of the Audit Committee.

(2) Member of the Compensation Committee

(3) Member of the Nominating and Corporate Governance Committee

Executive Officers

Stephen T. Worland, Ph.D. has served as our President and Chief Executive Officer and as a member of the Old eFFECTOR board of directors since its inception in May 2012, and has served on the Board since August 2021. Previously, Dr. Worland served as Chief Executive Officer and as a member of the board of directors of Anadys Pharmaceuticals, Inc. from August 2007 until its acquisition by Roche Holding AG in 2011. Prior to his appointment as Chief Executive Officer of Anadys Pharmaceuticals, Dr. Worland served as its Chief Scientific Officer and President, Pharmaceuticals. Prior to Anadys Pharmaceuticals, Inc., Dr. Worland was Vice President and Head of Antiviral Research at Pfizer Inc. and Vice President at Warner Lambert Co., where he was responsible for worldwide anti-infectives strategy. Dr. Worland has served as a director of Tracon Pharmaceuticals, Inc. since February 2015 and as a director of Blackstone Medicines since April 2017. Dr. Worland was an NIH postdoctoral fellow in molecular biology at Harvard University and completed a Ph.D.in Chemistry at the University of California, Berkeley. He received his B.S. with Highest Honors in Biological Chemistry from the University of Michigan. Dr. Worland's extensive knowledge of our business, as well as his extensive experience in the biotechnology and pharmaceutical industries contributed to our Board's conclusion that he should serve as a director of our Company.

Michael Byrnes has served as our Chief Financial Officer since December 2020. Previously, Mr. Byrnes was Senior Vice President of Finance at Principia Biopharma, Inc. from January 2020 until its acquisition by Sanofi in September 2020. Prior to that, Mr. Byrnes served as Chief Financial Officer of Alkahest, Inc. from May 2018 to January 2020 and Chief Financial Officer of Ocera Therapeutics, Inc., from December 2014 until its acquisition by Mallinckrodt Pharmaceuticals in December 2017. Mr. Byrnes served as Corporate Controller of Maxygen, Inc. from March 2010 to December 2014 and prior to that, held finance positions of increasing responsibility from 2000 to 2010 with NeurogesX, Inc., Lipid Sciences, Inc. and ADAC Laboratories, Inc., a Philips Medical Systems company. Mr. Byrnes has served as director of CERo Therapeutics, Inc. (Nasdaq: CERO) since February 2024. Mr. Byrnes received his B.S.C. in Finance from Santa Clara University and an M.B.A. from California State University, Hayward.

Douglas Warner M.D. has served as our Chief Medical Officer since August 2022. Previously, Dr. Warner held roles of increasing responsibility over 18 years at Amgen where he oversaw extensive clinical development programs in multiple indications across oncology and general medicine. In his most recent position, Executive Medical Director, Group Product Area Lead, Dr. Warner provided development guidance and oversight over a broad portfolio of solid tumor immune-oncology and pathway inhibitor development programs that ranged from Phase 1 to marketed products. Prior to this position, Dr. Warner was the Global Development Lead for several products including Vectibix®, XGEVA®, and Prolia®. In this role, Dr. Warner led evidence generation and oversaw the design, execution, and analysis of studies across the phases of development, including large global Phase 3 trials, and was the clinical development leader for major regulatory filings worldwide. Dr. Warner is co-author on numerous peer-reviewed articles including those in The Lancet, The Lancet Oncology, and The Journal of Clinical Oncology. He received his B.A. from the University of Pennsylvania, his M.D. from the Duke University School of Medicine, and his M.B.A. from the UCLA Anderson School of Management.

Non-Employee Directors

Brian M. Gallagher, Jr., Ph.D. served on Old eFFECTOR's board of directors since 2020, and as chair of its board since 2020 and has served as chair of the Board since August 2021. Currently, Dr. Gallagher is Managing Partner and Co-founder of Trekk Venture Partners, an early stage biotech focused venture firm. Dr. Gallagher previously served as a Partner at Abingworth LLP from 2018 to 2022. Previously, from 2010 to 2018, Dr. Gallagher was a Partner at SR One. He is currently on the board of directors of Slate Bio and was formerly a board director at Q32 Bio from 2020 to 2022, Abingworth Management Inc. from 2018 to 2022, and Nimbus Therapeutics from 2011 to 2018, River Vision (acquired by Horizon Pharma) from 2012 to 2017, Translate Bio (TBIO) from 2011 to 2019, Aileron Therapeutics (ALRN) from 2010 to 2018, Navitor Pharmaceuticals from 2014 to 2018, and CalciMedica from 2013 to 2018, and was a board observer at Constellation Pharmaceuticals (CNST) from 2010 to 2018 and Dicerna Pharmaceuticals (DRNA)from 2010 to 2014, and has served on the boards of other private and public companies. Prior to SR One, Dr. Gallagher was at Sirtris Pharmaceuticals where he was responsible for corporate development, operations and post-merger integration after the company's acquisition by GSK. Earlier in his career, Dr. Gallagher held key roles in operations and R&D at Alantos Pharmaceuticals (acquired by Amgen) and at Eisai. Dr. Gallagher holds a Ph.D. in organic chemistry from the University of Michigan and a BS in chemistry from the University of Massachusetts, where he was a Shapiro scholar. He is an inventor on over 25 patents and applications and is the senior author of a number of publications in prominent journals. He currently serves on the Investment Advisory Board for University of Michigan Biomedical Venture Fund, and the Advisory Boards for Michigan Drug Discovery and formerly NYU Medical School's Therapeutic Alliances. Dr. Gallagher's experience as a venture capitalist and service as a director of other biopharmaceutical companies contributed to our Board's conclusion that he should serve as a Chair of our Company.

Elizabeth P. Bhatt served as an independent director of LWAC since January 2021 and continues to serve on the Board following the Business Combination. Since June 2022, Ms. Bhatt has served as Chief Operating Officer of Septerna, Inc. From September 2019 to May 2022, Ms. Bhatt served as the Chief Business and Strategy Officer of Applied Molecular Transport Inc. (Nasdaq: AMTI), a publicly traded clinical-stage biopharmaceutical company. Before that, Ms. Bhatt was at Achaogen, Inc., a biopharmaceutical company, where she served as Chief Operating Officer from July 2018 to June 2019 and Chief Business Officer from September 2017 to June 2019. In April 2019, Achaogen filed a petition for bankruptcy in federal court seeking protection under Chapter 11 of the Bankruptcy Code. Prior to Achaogen, Ms. Bhatt held various roles at Gilead Sciences, Inc. (NASDAQ: GILD), a publicly traded research based biopharmaceutical company, from July 2006 to September 2017, including Vice President, Corporate Development from January 2016 to September 2017 and Senior Director, Corporate Development from May 2011 to December 2015. Ms. Bhatt holds a B.A.in Chemistry from Pomona College, an M.S. in Biomedical Sciences from the University of California, San Diego and a M.B.A. from the Kellogg School of Management at Northwestern University. Ms. Bhatt's strong scientific background, experience in various technical roles within the biotechnology industry, as well as her experience evaluating, investing and overseeing biotechnology companies contributed to our Board's conclusion that she should serve as a director of our Company.

Chris Ehrlich served as LWAC's Chief Executive Officer and Director from October 2020 to August 2021 and continues to serve on the Board following the Business Combination. Mr. Ehrlich has served as Chief Executive Officer of Phoenix Biotech Acquisition Corp. since October 2021. Mr. Ehrlich served in various roles at Locust Walk Partners starting in 2013, first as Senior Managing Director and Head of Locust Walk Partners' Global Biopharma team until 2021, and beginning in 2021 as Chief Executive Officer of Locust Walk Acquisition Corp.

Prior to joining Locust Walk Partners in 2013, Mr. Ehrlich served as a Managing Director at InterWest Partners, a venture capital firm focused on healthcare and information technology, from 2000 to 2013. At InterWest, he served on the boards of KAI Pharmaceuticals, a privately held pharmaceutical company (acquired by Amgen in 2012), Biomimetic Therapeutics, Inc., a biotechnology company (acquired by Wright Medical Technologies in 2013), Invuity, Inc., a medical technology company acquired by Stryker in 2018) and Xenon Pharmaceuticals, a biopharmaceutical company (NASDAQ:XENE). Prior to joining InterWest, Mr. Ehrlich was the Director of Licensing and Business Development at Purdue Pharma, a private pharmaceutical firm, where he was responsible for developing a biologic oncology franchise, including in-licensing key intellectual properties, establishing and managing collaborations with biotechnology companies and leading the commercial operations of Purdue BioPharma, a biotechnology company. Prior to joining Purdue BioPharma, Mr. Ehrlich worked in business development at Genentech, a biotechnology company, in venture capital at the U.S. Russia Investment Fund, and in biotechnology strategy development at L.E.K. Consulting. Since 2014, Mr. Ehrlich has served on the board of directors of Prostate Management Diagnostics, Inc., a diagnostics company, on the Advisory Board of the Peter Michael Foundation, a charity focused on prostate cancer where he has been a Senior Advisor since 2012, and on the Healthcare at Kellogg Advisory Board at Northwestern University since 2019. He received his undergraduate degree from Dartmouth College and a MBA from the Kellogg School of Management at Northwestern University. He is also a registered representative with FINRA, holding his Series 79, 63 and 24 licenses. Mr. Ehrlich's extensive experience in the biotechnology industry generally, as well as extensive experience in venture capital and business development, contributed to our Board's conclusion that he should serve as a director of our Company.

Kristen Harrington-Smith has served on the Board since February 2022. Ms. Harrington-Smith has served as Senior Vice President and Chief Commercial Officer of ADC Therapeutics, a publicly traded biopharmaceutical company, since November 2022. Prior to joining ADC Therapeutics, Ms. Harrington-Smith served as Chief Commercial Officer at ImmunoGen where she helped the organization prepare for their first commercial launch. Prior to joining ImmunoGen, Ms. Harrington-Smith held roles of increasing responsibility at Novartis Pharmaceuticals starting in July 2000, most recently as U.S. Commercial Head of Hematology from 2020 to 2021 and as Vice President and Head of U.S. CAR-T from 2016 to 2020. She holds a BA from Williams College and an MBA from the Kenan-Flagler Business School at the University of North Carolina, Chapel Hill. Ms. Harrington-Smith's extensive commercial experience in the pharmaceutical industry contributed to our Board's conclusion that she should serve as a director of our Company.

Barbara Klencke, M.D. has served on the Board since November 2021. Dr. Klencke also currently serves on the Boards of Tscan Therapeutics Therapeutics (Nasdaq: TCRX), Xencor (Nasdaq: XNCR), and Immune-Onc and previously served on the board of Lexent Bio from 2017 until that company's acquisition by Foundation Medicine in 2020. She previously served as the Chief Medical and Chief Development Officer of Sierra Oncology Inc., a publicly traded clinical-stage biopharmaceutical company from 2015 until its acquisition by GSK in 2022. From 2011 to 2015, Dr. Klencke served as SVP, Global Development, at Onyx Pharmaceuticals, which was acquired by Amgen Inc. in 2013. She also led a variety of both early- and late-stage oncology programs while at Genentech, Inc. from 2003 to 2011. She completed Internal Medicine and Hematology/Oncology training at the University of California, San Francisco and remained there as an Assistant Professor of Medicine in Oncology focusing on clinical research from 1995 to 2002. Dr. Klencke holds a B.S. from Indiana University and an M.D. from the University of California, Davis. Dr. Klencke's significant scientific expertise in biotechnology contributed to our Board's conclusion that she should serve as a director of our Company.

Caroline Loewy has served on the Board since September 2023. Ms. Loewy serves on public company boards, provides strategic advisory services to life science companies, and has more than 25 years of experience in the biopharmaceutical industry. She co-founded and served as Chief Financial Officer and Chief Business Officer of Achieve Life Sciences, Inc., a specialty pharmaceuticals company, from 2015 to 2017. Prior to Achieve Life Sciences, she served as Chief Financial Officer of several life sciences companies, including Tobira Therapeutics, Inc. from 2012 to 2014, Corcept Therapeutics Inc. from 2008 to 2011 and Poniard Pharmaceuticals, Inc. from 2006 to 2008. Prior to that, Ms. Loewy was a senior biotechnology equity research analyst at Morgan Stanley, Inc. from 2000 to 2004 and Prudential Securities, Inc. from 1996 to 1999. She began her career as a financial analyst at BankAmerica Corporation. Ms. Loewy is a founding board member of the Global Genes Project and the KCNQ2 Cure Alliance Foundation. Ms. Loewy has served on the board of directors of CymaBay Therapeutics, Inc. (Nasdaq: CBAY) since December 2016, and previously served on the boards of directors of PhaseBio Pharmaceuticals, Inc. from July 2018 to September 2023, Phoenix Biotech Acquisition Corp. from October 2021 to February 2024, Zogenix, Inc. from September 2020 to March 2022, Aptose Biosciences from April 2018 to June 2022, and of Locust Walk Acquisition Corp. from January 2021 to August 2021. Ms. Loewy holds a B.A. from the University of California, Berkeley, and a M.B.A./M.S. degree from Carnegie Mellon University.

Family Relationships

There are no family relationships between our Board and any of our executive officers.

Board of Directors and Election of Directors

Director Independence

Nasdaq listing rules require that a majority of the board of directors of a company listed on Nasdaq be composed of "independent directors," which is defined generally as a person other than an officer or employee of the company or its subsidiaries or any other individual having a relationship, which, in the opinion of the company's board of directors, would interfere with the director's exercise of independent judgment in carrying out the responsibilities of a director. Our Board of Directors has determined that each of Mr. Ehrlich, Ms. Bhatt, Dr. Gallagher, Ms. Harrington-Smith, Dr. Klencke and Ms. Loewy are an independent director under the Nasdaq listing rules and Rule 10A-3 of the Exchange Act. In making these determinations, our Board of Directors considered the current and prior relationships that each non-employee director has with us and all other facts and circumstances our Board of Directors deemed relevant in determining independence, including the beneficial ownership of our Common Stock by each non-employee director, and the transactions involving them described in the section titled "Certain Relationships and Related Transactions."

Classified Board of Directors

In accordance with the terms of our certificate of incorporation, our Board is divided into three classes with staggered, three-year terms. At each annual meeting of stockholders, the directors whose terms then expire will be eligible for reelection until the third annual meeting following reelection. Our directors are divided among the three classes as follows:

- the Class I directors are Ms. Harrington-Smith and Dr. Worland, and their terms will expire at our 2025 annual meeting of stockholders;
- the Class II directors are Mr. Ehrlich, Dr. Gallagher and Ms. Loewy, and their terms will expire at our 2026 annual meeting of stockholders; and
- the Class III directors are Ms. Bhatt and Dr. Klencke, and their terms will expire at our 2024 annual meeting of stockholders.

Our certificate of incorporation provides that the authorized number of directors may be changed only by resolution of the Board. Any additional directorships resulting from an increase in the number of directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one-third of the directors. The division of our Board into three classes with staggered three-year terms may delay or prevent a change of our Board or a change in control of our company. Our directors may be removed only for cause by the affirmative vote of the holders of at least two-thirds of our outstanding voting stock then entitled to vote in an election of directors.

Board Leadership Structure

Our Board is currently chaired by Dr. Gallagher. Our Board recognizes that it is important to determine an optimal board leadership structure to ensure the independent oversight of management as the company continues to grow. We separate the roles of chief executive officer and chair of the Board in recognition of the differences between the two roles. The chief executive officer is responsible for setting the strategic direction for our company and the day-to-day leadership and performance of our company, while the chair of the Board provides guidance to the chief executive officer and presides over meetings of the full board of directors. We believe that this separation of responsibilities provides a balanced approach to managing the Board and overseeing our company.

Our Board has concluded that our current leadership structure is appropriate at this time. However, our Board will continue to periodically review our leadership structure and may make such changes in the future as it deems appropriate.

Role of Board in Risk Oversight Process

Our Board has responsibility for the oversight of our risk management processes and, either as a whole or through its committees, regularly discusses with management our major risk exposures, their potential impact on our business and the steps we take to manage them. The risk oversight process includes receiving regular reports from board committees and members of senior management to enable our Board to understand our risk identification, risk management and risk mitigation strategies with respect to areas of potential material risk, including operations, finance, legal, regulatory, strategic and reputational risk.

The audit committee reviews information regarding liquidity and operations, and oversees our management of financial risks. Periodically, the audit committee reviews our policies with respect to risk assessment, risk management, loss prevention and regulatory compliance. Oversight by the audit committee includes direct communication with our external auditors, and discussions with management regarding significant risk exposures and the actions management has taken to limit, monitor or control such exposures. The compensation and talent committee is responsible for assessing whether any of our compensation policies or programs has the potential to encourage excessive risk-taking. The nominating and corporate governance committee manages risks associated with the independence of the Board, corporate disclosure practices and potential conflicts of interest. While each committee is responsible for evaluating certain risks and overseeing the management of such risks, the entire board of directors is regularly informed through committee reports about such risks. Matters of significant strategic risk are considered by our Board as a whole.

Committees of the Board of Directors

The standing committees of our Board of Directors include an Audit Committee, a Compensation Committee, and a Nominating and Corporate Governance Committee, each of which operates under a charter that has been approved by our Board.

Audit Committee

The audit committee's main function is to oversee our accounting and financial reporting processes and the audits of our consolidated financial statements. This committee's responsibilities include, among other things:

- appointing our independent registered public accounting firm;
- evaluating the qualifications, independence and performance of our independent registered public accounting firm;
- approving the audit and non-audit services to be performed by our independent registered public accounting firm;
- reviewing the design, implementation, adequacy and effectiveness of our internal accounting controls and our critical accounting policies;
- discussing with management and the independent registered public accounting firm the results of our annual audit and the review of our quarterly unaudited consolidated financial statements;
- reviewing, overseeing and monitoring the integrity of our consolidated financial statements and our compliance with legal and regulatory requirements as they relate to financial statements or accounting matters;
- reviewing on a periodic basis, or as appropriate, any investment policy and recommending to our Board any changes to such investment policy;
- reviewing with management any earnings announcements and other public announcements regarding our results of operations;
- preparing the report that the SEC requires in our annual proxy statement;
- reviewing and approving any related party transactions and reviewing and monitoring compliance with our code of conduct and ethics; and
- reviewing and evaluating, at least annually, the performance of the audit committee and its members including compliance of the audit committee with its charter.

The members of our audit committee are Mr. Ehrlich, Dr. Gallagher and Ms. Loewy. Ms. Loewy serves as the chairperson of the committee. All members of our audit committee meet the requirements for financial literacy under the applicable rules and regulations of the SEC and Nasdaq. Our Board has determined that Ms. Loewy is an "audit committee financial expert" as defined by applicable SEC rules and has the requisite financial sophistication as defined under the applicable Nasdaq listing standards. Our Board has determined each of Mr. Ehrlich, Dr. Gallagher and Ms. Loewy is independent under the applicable rules of the SEC and Nasdaq.

Compensation Committee

Our compensation committee approves policies relating to compensation and benefits of our officers and employees. The compensation committee approves corporate goals and objectives relevant to the compensation of our Chief Executive Officer and other executive officers, evaluates the performance of these officers in light of those goals and objectives and approves the compensation of these officers based on such evaluations. The compensation committee also approves the issuance of stock options and other awards under our equity plans. The compensation committee will review and evaluate, at least annually, the performance of the compensation committee and its members, including compliance by the compensation committee with its charter.

The members of our compensation committee are Mr. Ehrlich, Ms. Harrington-Smith and Dr. Klencke. Mr. Ehrlich serves as the chairperson of the committee. Our Board has determined that each of Mr. Ehrlich, Ms. Harrington-Smith and Dr. Klencke is independent under the applicable Nasdaq listing standards and is a "non-employee director" as defined in Rule 16b-3 promulgated under the Exchange Act.

Nominating and Corporate Governance Committee

The nominating and corporate governance committee is responsible for assisting our Board in discharging the Board's responsibilities regarding the identification of qualified candidates to become board members, the selection of nominees for election as directors at our annual meetings of stockholders (or special meetings of stockholders at which directors are to be elected), and the selection of candidates to fill any vacancies on our Board and any committees thereof. In addition, the nominating and corporate governance committee is responsible for overseeing our corporate governance policies, reporting and making recommendations to our Board concerning governance matters and oversight of the evaluation of our Board. The members of our nominating and corporate governance committee are Ms. Bhatt and Dr. Gallagher. Ms. Bhatt serves as the chairperson of the committee. Our Board has determined that Ms. Bhatt and Dr. Gallagher is independent under the applicable Nasdaq listing standards.

Compensation Committee Interlocks and Insider Participation

None of the members of our compensation committee has ever been one of our officers or employees. None of our executive officers currently serves, or has served, as a member of our Board or compensation committee of any entity that has one or more executive officers serving as a member of our Board or compensation committee.

Board Diversity

Our nominating and corporate governance committee is responsible for reviewing with our Board, on an annual basis, the appropriate characteristics, skills and experience required for the Board as a whole and its individual members. In evaluating the suitability of individual candidates (both new candidates and current members) for election or appointment, the nominating and corporate governance committee and the Board will take into account many factors, including the following:

- personal and professional integrity, ethics, and values;
- experience in corporate management, such as serving as an officer or former officer of a publicly-held company;
- experience as a board member or executive officer of another publicly-held company;
- strong finance experience;
- diversity of expertise and experience in substantive matters pertaining to our business relative to other board members;

• diversity of background and perspective, including, but not limited to, with respect to age, gender, race, place of residence, and specialized experience;

• experience relevant to our business industry and with relevant social policy concerns; and

• relevant academic expertise or other proficiency in an area of our business operations.

Our Board evaluates each individual in the context of the Board as a whole, with the objective of assembling a group that can best maximize the success of the business and represent stockholder interests through the exercise of sound judgment using its diversity of experience in these various areas.

Code of 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 or controller, or persons performing similar functions. Our code of business conduct and ethics is available under the Corporate Governance section of our website at www.effector.com. In addition, we intend to post on our website all disclosures that are required by law or the listing standards of Nasdaq concerning any amendments to, or waivers from, any provision of the code. The reference to our website address does not constitute incorporation by reference of the information contained at or available through our website. We have included our website address as an inactive textual reference only.

Item 11. Executive Compensation.

This section discusses the material components of the executive compensation program for our executive officers who are named in the "Summary Compensation Table" below. In 2023, our "named executive officers" and their positions were as follows:

• Stephen T. Worland, Ph.D., who serves as President and Chief Executive Officer;

• Michael Byrnes, who serves as Chief Financial Officer; and

• Douglas Warner, M.D., who serves as Chief Medical Officer;

This discussion may contain forward-looking statements that are based on our current plans, considerations, expectations and determinations regarding future compensation programs. Actual compensation programs that we adopt in the future may differ materially from the currently planned programs summarized in this discussion.

On January 12, 2024, the Company effected a 1-for-25 reverse stock split of its common stock (the "Reverse Stock Split"). The per share amounts and exercise prices provided in this Item 11 give retroactive effect to the Reverse Stock Split, unless otherwise indicated.

Summary Compensation Table

The following table presents summary information regarding the total compensation that was awarded to, earned by or paid to the named executive officers for services rendered during the years ended December 31, 2023 and December 31, 2022.

Name and principal position	Year	Salary ($)	Bonus ($)(1)	Option Awards ($)(2)	Non-equity Incentive Plan Compensation ($)(3)	All Other Compensation ($)(4)	Total ($)
Stephen T. Worland, Ph.D.	2023	594,700	—	343,544	237,880	41,381	1,217,505
President and Chief Executive Officer	2022	566,500	—	2,987,797	254,295	34,460	3,843,052
Michael Byrnes	2023	450,000	—	171,776	171,000	33,817	826,593
Chief Financial Officer	2022	435,735	—	1,351,611	156,865	31,090	1,975,301
Douglas Warner, M.D.	2023	474,308	—	85,880	151,779	34,073	746,040
Chief Medical Officer	2022	179,135	50,000	407,562	64,356	10,909	711,962

(1) Represents a $50,000 one-time signing bonus for Dr. Warner in connection with his commencement of employment.

(2) In accordance with SEC rules, this column reflects the aggregate grant-date fair value of the option awards granted during 2023 computed in accordance with ASC Topic 718 for stock-based compensation transactions. Assumptions used in the calculation of these amounts are included in Note 8 to our consolidated financial statements. These amounts do not reflect the actual economic value that will be realized by the named executive officer upon the vesting of the stock options, the exercise of the stock options, or the sale of the Common Stock underlying such stock options.

(3) Amounts reflect bonuses awarded to our named executive officers by our Board in recognition of annual performance and paid in cash as further described below in “Bonus Compensation.”

(4) For 2023, amounts reflect (i) $33,098, $33,098 and $32,905 in health and welfare insurance premium payments for Dr. Worland, Mr. Byrnes, and Dr. Warner, respectively, and (ii) $8,283, $719 and $1,168 in group term life premiums for Dr. Worland, Mr. Byrnes and Dr. Warner, respectively.

Narrative Disclosure to Compensation Tables

Base Salary

The compensation of the named executive officers is generally determined and approved at the beginning of each year or, if later, in connection with the commencement of employment of the executive, by our Board or the compensation committee. The following represent the base salaries which were effective for 2023 for the named executive officers.

Name	2023 Annual Base Salary ($)
Stephen T. Worland, Ph.D.	594,700
Michael Byrnes	450,000
Douglas Warner, M.D.	474,308

Bonus Compensation

We consider annual cash incentive bonuses to be an important component of our total compensation program and to provide incentives necessary to retain executive officers. Each of the named executive officers is eligible to receive an annual performance-based cash bonus based on a specified target annual bonus award amount, expressed as a percentage of the named executive officer's base salary. The following represent the target percentages of base salary for 2023 for the named executive officers:

Name	2023 Target Percentage
Stephen T. Worland, Ph.D.	50%
Michael Byrnes	40%
Douglas Warner, M.D.	40%

Bonuses for any one year are usually determined and paid in the first quarter of the following year. For 2023, our Board reviewed our corporate goals and, following such review, determined to pay annual bonuses to the named executive officers at 80% of target based on its assessment of our progress during 2023 relative to such goals, which were based on clinical, financial, regulatory and corporate development objectives. Mr. Byrnes' 2023 annual bonus was further adjusted upward to 95% of target based on individual performance for the 2023 calendar year. The 2023 annual bonuses paid to our named executive officers are reflected in the Summary Compensation Table above.

Equity-Based Incentive Awards

Our equity-based incentive awards are designed to align our interests and the interests of our stockholders with those of our employees and consultants, including the named executive officers. The Board is responsible for approving equity grants.

Prior to the consummation of the Business Combination, Old eFFECTOR maintained the 2013 Equity Incentive Plan (the "2013 Plan"). Old eFFECTOR offered awards of stock options to purchase shares of its common stock to eligible service providers, including our named executive officers, pursuant to the 2013 Plan. In connection with the completion of the Business Combination and the adoption of the eFFECTOR Therapeutics, Inc. 2021 Incentive Award Plan (the "2021 Plan"), no further awards will be granted under the 2013 Plan.

All options are granted with an exercise price per share that is no less than the fair market value of our common stock on the date of grant of each award. Our stock option awards generally vest over a four-year period and may be subject to acceleration of vesting and exercisability under certain termination and change of control events, as described below under "Employment Arrangements with the Named Executive Officers."

In January 2023, Dr. Worland, Mr. Byrnes and Dr. Warner were each awarded an annual grant of stock options under our 2021 Plan of 40,000, 20,000 and 10,000 stock options, respectively. The stock options have an exercise price per share of $11.75, which was the closing price per share of our Common Stock on the date of grant. The stock options vest over four years following the date of grant, with 1/48th of the total number of shares subject to the options vesting on each monthly anniversary of January 17, 2023, subject to their continuous service with us through the applicable vesting dates.

In February 2024, Dr. Worland, Mr. Byrnes and Dr. Warner were each awarded an annual grant of stock options under our 2021 Plan of 80,000, 40,000 and 25,000 stock options, respectively. The stock options have an exercise price per share of $11.32, which was the closing price per share of our Common Stock on the date of grant. The stock options vest over four years following the date of grant, with 1/48th of the total number of shares subject to the options vesting on each monthly anniversary of February 19, 2024, subject to their continuous service with us through the applicable vesting dates.

Employment Arrangements with the Named Executive Officers

We are party to employment agreements with each of our named executive officers. The arrangements generally provide for at-will employment without any specific term and set forth the named executive officer's initial base salary, bonus potential, eligibility for employee benefits and severance benefits upon a qualifying termination of employment, subject to such employee executing a separation agreement with us.

Employment Agreement with Dr. Worland

We have entered into an employment agreement with Dr. Worland, our President and Chief Executive Officer. Pursuant to his agreement, Dr. Worland is entitled to an annual base salary and a target annual incentive bonus, in each case as established from time to time by the compensation committee of our Board.

Pursuant to his employment agreement, if Dr. Worland's employment is terminated by us without "cause" prior to a "change in control" or more than twelve months following a "change in control" (each as defined in his employment agreement), he will be entitled to: (1) continued payment of his base salary for a period of twelve months, and (2) payment of premiums for continued health benefits to him under COBRA for up to twelve months following his termination.

Pursuant to his employment agreement, if Dr. Worland's employment is terminated by us without "cause" or by Dr. Worland with "good reason" upon or within twelve months following a "change in control," he will be entitled to: (1) continued payment of his base salary for a period of eighteen months, (2) payment of premiums for continued health benefits to him under COBRA for up to eighteen months following his termination, (3) payment of an amount equal to 150% of his current year target bonus, and (4) full acceleration of the vesting of all his outstanding equity awards.

Dr. Worland's benefits are conditioned, among other things, on him complying with his post-termination obligations under his agreement, including a one-year non-solicitation obligation, and timely signing a general release of claims in our favor.

Employment Agreement with Mr. Byrnes

We have entered into an employment agreement with Mr. Byrnes, our Chief Financial Officer. Pursuant to his agreement, Mr. Byrnes is entitled to an annual base salary and a target annual incentive bonus, in each case as established from time to time by the compensation committee of our Board.

Pursuant to his employment agreement, if Mr. Byrnes' employment is terminated by us without "cause" prior to a "change in control" or more than twelve months following a "change in control" (each as defined in his employment agreement), he will be entitled to: (1) continued payment of his base salary for a period of nine months, and (2) payment of premiums for continued health benefits to him under COBRA for up to nine months following his termination.

Pursuant to his employment agreement, if Mr. Byrnes' employment is terminated by us without "cause" or by Mr. Byrnes with "good reason" upon or within twelve months following a "change in control," he will be entitled to: (1) continued payment of his base salary for a period of twelve months, (2) payment of premiums for continued health benefits to him under COBRA for up to twelve months following his termination, (3) payment of an amount equal to his current year target bonus, and (4) full acceleration of the vesting of all his outstanding equity awards.

Mr. Byrnes' benefits are conditioned, among other things, on his complying with his post-termination obligations under his agreement, including a one-year non-solicitation obligation, and timely signing a general release of claims in our favor.

Employment Agreement with Dr. Warner

We have entered into an employment agreement with Dr. Warner, our Chief Medical Officer. Pursuant to his agreement, Dr. Warner is entitled to an annual base salary and a target annual incentive bonus, in each case as established from time to time by the compensation committee of our Board. Pursuant to his employment agreement, Dr. Warner received a one-time signing bonus in the amount of $50,000.

Pursuant to his employment agreement, if Dr. Warner's employment is terminated by us without "cause" prior to a "change in control" or more than twelve months following a "change in control" (each as defined in his employment agreement), he will be entitled to: (1) continued payment of his base salary for a period of twelve months, and (2) payment of premiums for continued health benefits to him under COBRA for up to twelve months following his termination.

Pursuant to his employment agreement, if Dr. Warner's employment is terminated by us without "cause" or by Dr. Warner with "good reason" upon or within twelve months following a "change in control," he will be entitled to: (1) continued payment of his base salary for a period of twelve months, (2) payment of premiums for continued health benefits to him under COBRA for up to twelve months following his termination, (3) payment of an amount equal to his current year target bonus, and (4) full acceleration of the vesting of all his outstanding equity awards.

Dr. Warner's benefits are conditioned, among other things, on his complying with his post-termination obligations under his agreement, including a one-year non-solicitation obligation, and timely signing a general release of claims in our favor.

Outstanding Equity Awards at Fiscal Year-End

The following table sets forth certain information regarding equity awards granted to the named executive officers that remained outstanding as of December 31, 2023, in each case, as adjusted to reflect the conversion of such awards in connection with the Reverse Stock Split.

		Option Awards (1)(2)			
Name and principal position	Grant Date	Number of Securities Underlying Unexercised Options Exercisable (#)	Number of Securities Underlying Unexercised Options Unexercisable (#)	Option Exercise Price ($)	Option Expiration Date
Stephen T. Worland, Ph.D.	12/4/2014	8,691	—	18.25	12/4/2024
	1/8/2016	24,760	—	28.50	1/8/2026
	2/17/2016	5,794	—	28.50	2/17/2026
	8/21/2017	11,588	—	41.50	8/21/2027
	1/20/2022	9,979	10,847	166.25	1/20/2032
	6/20/2022	15,620	5,207	37.25	6/20/2032
	1/17/2023	9,166	30,833	11.75	6/20/2032
Michael Byrnes	12/10/2020	10,139	3,380	59.75	12/10/2030
	1/20/2022	4,514	4,907	166.25	1/20/2032
	6/20/2022	7,066	2,355	37.25	6/20/2032
	1/17/2023	4,583	15,417	11.75	6/20/2032
Douglas Warner, M.D.	8/8/2022	8,242	16,484	22.44	8/8/2032
	1/17/2023	2,291	7,708	11.75	6/20/2032

(1) All of the outstanding equity awards are stock options granted under and subject to the terms of the 2013 Plan, described below under "—Incentive Award Plans." The vesting of each equity award is subject to the executive's continuous service with us through the applicable vesting dates. Each of our named executive officers' employment agreements entitles them to accelerated vesting of all outstanding equity awards upon a qualifying termination in connection with or following a change in control of our company. For additional discussion, please see "—Employment Arrangements with our Named Executive Officers" above.

(2) Each option award vests over four years with 25% vesting on the first anniversary of the vesting commencement date and the remainder vesting in equal monthly installments thereafter, with the exception of the January 20, 2022 and January 17, 2023 grants which vest in equal monthly installments for four years, and the June 20, 2022 grants which vests over two years with 50% vesting on the first anniversary of the vesting commencement date and the remainder vesting in equal monthly installments thereafter.

Other Elements of Compensation

Perquisites, Health and Welfare Benefits

The named executive officers are eligible to participate in our employee benefit plans, including our medical, dental, vision, group life, disability and accidental death and dismemberment insurance plans, in each case on the same basis as all of our other employees.

We generally do not provide perquisites or personal benefits to the named executive officers, except in limited circumstances. We do, however, pay the premiums for term life insurance and disability insurance for all of our employees, including the named executive officers. Our Board may elect to adopt qualified or non-qualified benefit plans in the future if it determines that doing so is in our best interests.

401(k) Plan

We provide a 401(k) plan that provides eligible U.S. employees with an opportunity to save for retirement on a tax advantaged basis. Eligible employees are able to defer eligible compensation up to certain Code limits, which are updated annually. The 401(k) plan is intended to be qualified under Section 401(a) of the Code, with the related trust intended to be tax exempt under Section 501(a) of the Code. As a tax-qualified retirement plan, contributions to the 401(k) plan are deductible by us when made, and contributions and earnings on those amounts are not generally taxable to the employees until withdrawn or distributed from the 401(k) plan. We believe that providing a vehicle for tax-deferred retirement savings though our 401(k) plan adds to the overall desirability of our executive compensation package and further incentivizes our employees, including our named executive officers, in accordance with our compensation policies.

Nonqualified Deferred Compensation

We do not maintain nonqualified defined contribution plans or other nonqualified deferred compensation plans. We may elect to provide our officers and other employees with non-qualified defined contribution or other nonqualified deferred compensation benefits in the future if it determines that doing so is in our best interests.

No Tax Gross Ups

We do not make gross-up payments to cover our named executive officers' personal income taxes that may pertain to any of the compensation or benefits paid or provided by us.

Clawback Policy

We have adopted a compensation recovery policy that requires the recovery of certain erroneously paid incentive compensation received by our Section 16 officers on or after October 2, 2023, as required by new SEC rules and NYSE Listing Standards implemented pursuant to the Dodd-Frank Act.

Director Compensation

The following table summarizes compensation received by our non-employee directors during the year ended December 31, 2023. Dr. Worland, our President and Chief Executive Officer, is also a member of our Board, but does not receive any additional compensation for his service as a director in addition to the compensation he received as an employee. Dr. Worland's compensation is described further above.

Name	Fees Earned or Paid in Cash ($)(1)	Option Awards ($)(2)	Stock Awards ($)	All Other Compensation ($)	Total ($)
Brian Gallagher	81,500	28,320	—	—	109,820
John Smither (3)	40,653	23,730	—	—	64,383
Caroline Loewy (4)	16,914	18,786	—	—	35,700
Barbara Klencke	45,000	20,871	—	—	65,871
Chris Ehrlich	57,500	23,420	—	—	80,920
Elizabeth Bhatt	52,000	21,484	—	—	73,484
Kristen Harrington-Smith	45,000	20,871	—	—	65,871

(1) Reflects cash retainer fees earned by our non-employee directors in 2023.

(2) In accordance with SEC rules, this column represents the aggregate grant-date fair value of option awards granted during 2023 computed in accordance with ASC Topic 718 for stock-based compensation transactions. Assumptions used in the calculation of these amounts are included in Note 8 to our consolidated financial statements. These amounts do not reflect the actual economic value that will be realized by the director upon the vesting of the stock options, the exercise of the stock options, or the sale of the common stock underlying such stock options. The table below shows the aggregate number of outstanding options held as of December 31, 2023 by each individual who served as a non-employee director during 2023.

Name	Number of Securities Underlying Options Outstanding at December 31, 2023
Brian Gallagher	5,237
John Smither	3,692
Caroline Loewy	1,600
Barbara Klencke	4,325
Chris Ehrlich	4,637
Elizabeth Bhatt	4,400
Kristen Harrington-Smith	4,058

(3) Mr. Smither resigned as a member of our Board on September 7, 2023.

(4) Ms. Loewy was appointed as a member of our Board on September 9, 2023.

Director Compensation Program

Our Board has approved a non-employee director compensation program (the “Director Compensation Program”). The Director Compensation Program provides for annual retainer fees and long-term equity awards for our non-employee directors. In January 2024, our Board approved an increase to the annual retainer fees for our Chair of the Board/Lead Independent Director and Compensation Committee members, as noted below.

The Director Compensation Program consists of the following components:

Cash Compensation

- Annual Base Board Fee: $40,000
- Annual Chair Fees:
    - Chair of the Board/Lead Independent Director: $35,000 (increased from $30,000)
    - Audit Committee: $15,000
    - Compensation Committee: $10,000
    - Nominating and Corporate Governance Committee: $8,000
- Annual Committee Member Fees (non-Chair):
    - Audit Committee: $7,500
    - Compensation Committee: $6,000 (increased from $5,000)
    - Nominating and Corporate Governance Committee: $4,000

Annual cash fees will be paid in quarterly installments in arrears and will be pro-rated for any partial calendar quarter of service.

Equity Compensation

• Initial Awards: Each non-employee director who is initially elected or appointed to our Board following the effective date of the Director Compensation Program and those directors who were serving on our Board immediately following the consummation of the Business Combination shall be granted stock options to purchase 1,600 shares (each, an "Initial Award"). Each Initial Award will vest in equal monthly installments over three years beginning on the non-employee director's appointment to the Board, subject to the non-employee director's continued service through each such vesting date.

• Annual Awards: Each non-employee director who is serving on our Board as of the date of the annual meeting of our stockholders each calendar year beginning with calendar year 2022 shall be granted, on such annual meeting date, stock options to purchase 800 shares (each, an "Annual Award"). Each Annual Award will vest in full on the earlier to occur of (A) the first anniversary of the applicable grant date and (B) the date of the next annual meeting following the grant date, subject to the non-employee director's continued service through the applicable vesting date.

On February 19, 2024, each non-employee member of the Board received an additional award of stock options to purchase 2,000 shares. These awards vest in equal monthly installments over the twelve months following the date of grant, subject to the non-employee director's continued service through the applicable vesting date.

Non-employee directors elected for the first time within the six month period preceding an annual meeting or at an annual meeting will receive only an Initial Award and will not receive an Annual Award with respect to such annual meeting, unless otherwise determined by the Board in its discretion. In addition, each Initial Award and Annual Award, and the awards granted to our non-employee directors in January 2023, shall vest in full immediately prior to the occurrence of a Change in Control, as defined in the 2021 Plan, to the extent outstanding at such time.

Compensation under our Director Compensation Program will be subject to the annual limits on non-employee director compensation set forth in the 2021 Plan, as described above.

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

Beneficial Ownership of Securities

The following table sets forth the beneficial ownership of Common Stock as of February 29, 2024 by:

• each person who is known to be the beneficial owner of more than 5% of shares of Common Stock;

• each of our current named executive officers and directors; and

• all current executive officers and directors as a group.

The beneficial ownership of Common Stock is based on 3,687,309 shares of Common Stock outstanding as of February 29, 2024.

Beneficial ownership is determined according to the rules of the SEC, which generally provide that a person has beneficial ownership of a security if he, she or it possesses sole or shared voting or investment power over that security, including options and warrants that are currently exercisable within 60 days of February 29, 2024.

Unless otherwise indicated, we believe that all persons named in the table below have sole voting and investment power with respect to the voting securities beneficially owned by them.

Name and Address of Beneficial Owner (1)	Number of Shares	% of Ownership
5% Holders		
Abingworth Bioventures VI, L.P. (2)	193,195	5.2%
Directors and Executive Officers		
Stephen T. Worland, Ph.D. (3)	130,652	3.5%
Michael Byrnes (4)	34,848	*
Douglas Warner, M.D. (5)	14,469	*
Elizabeth Bhatt (6)	4,116	*
Chris Ehrlich (7)	11,128	*
Brian Gallagher (8)	5,792	*
Kristen Harrington-Smith (9)	3,146	*
Barbara Klencke (10)	3,591	*
Caroline Loewy (11)	1,005	*
All directors and executive officers as a group (9 individuals) (12)	208,747	5.4%

* Less than one percent

(1) Unless otherwise noted, the business address of each of those listed in the table above is 142 North Cedros Avenue, Suite B, Solana Beach, California 92075.

(2) Based on the information contained in the Schedule 13D/A filed with the SEC on August 18, 2023 by The Carlyle Group Inc. Includes (i) 192,884 shares of common stock held of record by Abingworth Bioventures VI LP and (ii) 311 shares of Common Stock underlying stock options exercisable within 60 days of August 18, 2023. The Carlyle Group Inc., which is a publicly traded entity listed on Nasdaq, is the sole shareholder of Carlyle Holdings I GP Inc., which is the sole member of Carlyle Holdings I GP Sub L.L.C., which is the general partner of Carlyle Holdings I L.P., which, with respect to the securities reported herein, is the managing member of CG Subsidiary Holdings L.L.C., which is the managing member of TC Group, L.L.C., which is the managing member of Carlyle Investment Management, L.L.C., which is the sole member of Carlyle Genesis UK LLC, which is the principal member of Abingworth LLP. Abingworth Bioventures VI LP has delegated to Abingworth LLP all investment and dispositive power over the securities held of record by Abingworth Bioventures VI LP. Accordingly, each of the foregoing entities may be deemed to share beneficial ownership of the securities held of record by Abingworth Bioventures VI LP, but each disclaims beneficial ownership of such securities. The address of each of Abingworth LLP and Abingworth Bioventures VI LP is 38 Jermyn Street, London, SW1Y 6DN, England, United Kingdom. The address of each of the other Reporting Persons is c/o The Carlyle Group, 1001 Pennsylvania Ave. NW, Suite 220 South, Washington, DC 20004-2505.

(3) Represents 33,181 shares held by a family trust of Dr. Worland of which he is a trustee and 97,471 shares underlying options to purchase shares of Common Stock.

(4) Includes 33,118 shares underlying options to purchase shares of Common Stock.

(5) Represents 14,469 shares underlying options to purchase shares of Common Stock.

(6) Represents 361 shares of Common Stock held directly by LWAC Sponsor and allocated to Ms. Bhatt by LWAC D&O LLC, a member of LWAC Sponsor, and 3,755 shares underlying options to purchase shares of Common Stock held by Ms. Bhatt.

(7) Represents 5,686 shares of Common Stock held directly by LWAC Sponsor and allocated to Mr. Ehrlich by Locust Walk Partners LLC (LWP), a member of LWAC Sponsor, 41 shares of Common Stock held directly by LWAC Sponsor and allocated to Mr. Ehrlich's spouse by LWP, 1,409 shares of Common Stock held directly by Mr. Ehrlich, and 3,992 shares underlying options to purchase shares of Common Stock held by Mr. Ehrlich.

(8) Includes 4,592 shares underlying options to purchase shares of Common Stock.

(9) Represents 3,146 shares underlying options to purchase shares of Common Stock.

(10) Represents 3,591 shares underlying options to purchase shares of Common Stock.

(11) Represents 361 shares of Common Stock held directly by LWAC Sponsor and allocated to Ms. Loewy by LWAC D&O LLC, a member of LWAC Sponsor, and 644 shares underlying options to purchase shares of Common Stock held by Ms. Loewy.

(12) Represents 44,934 shares of Common stock and 178,083 options to purchase shares of Common Stock.

Securities Authorized for Issuance Under Equity Compensation Plans (as of December 31, 2023)

The following table provides information as of December 31, 2023 regarding compensation plans under which our equity securities are authorized for issuance:

Plan Category	Number Of Securities To Be Issued Upon Exercise Of Outstanding Options, Warrants and Rights		Weighted Average Exercise Price of Outstanding Options		Number Of Securities Remaining Available For Future Issuance Under Equity Compensation Plans	
Equity compensation plans approved by stockholders (1)	540,019	(2)	$ 51.67	(3)	155,593	(4)
Equity compensation plans not approved by stockholders	—		—		—	
Total	540,019		$ 51.67		155,593	

(1) Consists of the 2021 Plan, 2013 Plan and eFFECTOR Therapeutics, Inc. 2021 Employee Stock Purchase Plan (the “ESPP”).

(2) Represents 130,694 shares and 350,181 shares subject to outstanding stock options under the 2013 Plan and 2021 Plan, respectively. With respect to the ESPP, represents 59,144 shares available for issuance under such plan as of December 31, 2023 (all of which were eligible for issuance pursuant to the offering period in effect on such date).

(3) Represents the weighted-average exercise price of outstanding options.

(4) Includes 96,449 shares available for issuance under the 2021 Plan and 59,144 shares reserved for issuance under the ESPP as of December 31, 2023. We are no longer permitted to grant awards under the 2013 Plan. The maximum number of shares subject to purchase under our ESPP offering outstanding on December 31, 2023 is 59,144 shares.

The number of shares of our common stock available for issuance under the 2021 Plan will be annually increased on January 1 of each calendar year ending in 2031 by an amount equal to the lesser of (i) a number equal to 5% of the outstanding shares on the final day of the immediately preceding calendar year or (ii) such smaller number of shares as is determined by our Board. Effective as of January 1, 2024, the number of shares available for issuance under the 2021 Plan was increased by 149,733 shares, which is not reflected in the table above.

In addition, the number of shares of common stock available for issuance under the ESPP will be annually increased on January 1 of each calendar year ending in 2031 by an amount equal to the lesser of (a) a number equal to 1% of the shares of common stock outstanding on the final day of the immediately preceding calendar year or (b) such smaller number of shares as is determined by our Board. Effective as of January 1, 2024, the number of shares available for issuance under the ESPP was increased by 29,946 shares, which is not reflected in the table above.

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

The following is a summary of transactions entered since January 1, 2022 to which we have been a party in which the amount involved exceeded or will exceed $120,000 (or, if less, 1% of the average of our total assets amounts as of December 31, 2023), and in which any of our directors, executive officers or, to our knowledge, beneficial owners of more than 5% of our capital stock or any member of the immediate family of any of the foregoing persons had or will have a direct or indirect material interest, other than equity and other compensation, termination, change in control and other arrangements, which are described under "Executive and Director Compensation." We also describe below certain other transactions with our directors, executive officers and stockholders.

Registration Rights Agreements

Certain directors and officers and entities that hold more than 5% of our Common Stock following the consummation of the Business Combination entered into the Amended and Restated Registration Rights Agreement, pursuant to which they are entitled to registration rights to require us to register the resale of any of our securities held by them. In addition, in connection with the Purchase Agreement with Lincoln Park, Lincoln Park entered into a registration rights agreement, pursuant to which they are entitled to registration rights to require us to register the resale of any of our securities held by them. For additional information regarding the registration rights agreements, see the "Description of Registered Securities" exhibit filed herewith.

Indemnification under the Certificate of Incorporation and Amended Bylaws; Indemnification Agreements

Our bylaws provide that we will indemnify our directors and officers to the fullest extent permitted by the DGCL, subject to certain exceptions contained in the bylaws. In addition, the certificate of incorporation provides that our directors will not be liable for monetary damages for breach of fiduciary duty.

We also entered into indemnification agreements with each of our executive officers and directors. The indemnification agreements provide the indemnitees with contractual rights to indemnification, and expense advancement and reimbursement, to the fullest extent permitted under the DGCL, subject to certain exceptions contained in those agreements. For additional information, see "Description of our Securities—Limitations on Liability and Indemnification of Officers and Directors."

Related Person Transaction Policy

Our Board has adopted a written related person transaction policy, setting forth the policies and procedures for the review and approval or ratification of related-person transactions. This policy will cover, with certain exceptions set forth in Item 404 of Regulation S-K under the Securities Act, any transaction, arrangement or relationship, or any series of similar transactions, arrangements or relationships in which we were or are to be a participant, where the amount involved exceeds the lesser of $120,000 or one percent of the average of our total assets at year-end for the last two completed fiscal years, and a related person had or will have a direct or indirect material interest, including, without limitation, purchases of goods or services by or from the related person or entities in which the related person has a material interest, indebtedness, guarantees of indebtedness and employment by us of a related person. In reviewing and approving any such transactions, our audit committee is tasked to consider all relevant facts and circumstances, including, but not limited to, whether the transaction is on terms comparable to those that could be obtained in an arm's length transaction and the extent of the related person's interest in the transaction.

Director Independence

See Item 10 of Part III of this Annual Report for information about our director independence which is incorporated by reference herein.

Item 14. Principal Accounting Fees and Services.

Independent Registered Public Accounting Firms Fees

Ernst & Young LLP ("E&Y") has served as eFFECTOR's independent registered public accounting firm since 2013.

The following table sets forth the aggregate fees and expenses billed to us by E&Y for fiscal years 2023 and 2022:

	2023	2022
Audit Fees (1)	549,523	763,800
Tax Fees (2)	31,209	33,990
All Other Fees	—	—
Total	580,732	797,790

(1) Audit fees consist of fees for professional services rendered for the audit of our year-end consolidated financial statements and services that are normally provided by our independent registered public accounting firm in connection with regulatory filings, and other fees in connection with the Business Combination.

(2) Tax fees consist of fees for tax consultation services for the Business Combination and professional services relating to tax compliance, tax planning, and tax advice.

Pre-Approval Policies and Procedures

Our audit committee has established a policy that all audit and permissible non-audit services provided by our independent registered public accounting firm will be pre-approved by the audit committee, and all such services were pre-approved in accordance with this policy during the fiscal year ended December 31, 2021. These services may include audit services, audit-related services, tax services and other services. The audit committee considers whether the provision of each non-audit service is compatible with maintaining the independence of our auditors. Pre-approval is detailed as to the particular service or category of services and is generally subject to a specific budget. Our independent registered public accounting firm and management are required to periodically report to the audit committee regarding the extent of services provided by the independent registered public accounting firm in accordance with this pre-approval, and the fees for the services performed to date.

PART IV

Item 15. Exhibits, Financial Statement Schedules.

1. All consolidated financial statements.

The consolidated financial statements of eFFECTOR Therapeutics, Inc., together with the report thereon of Ernst & Young LLP, an independent registered public accounting firm, are included in this Annual Report beginning on page F-1.

2. Financial statement schedules.

All schedules have been omitted because the information required to be set forth therein is not applicable or is shown in the consolidated financial statements or notes thereto.

3. Exhibits

A list of exhibits is set forth on the Exhibit Index immediately preceding the signature page of this Annual Report and is incorporated herein by reference.

Item 16. Form 10-K Summary

None.

eFFECTOR Therapeutics, Inc.
Index to Financial Statements

Report of Independent Registered Public Accounting Firm

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

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of eFFECTOR Therapeutics, Inc. (the Company) as of December 31, 2023 and 2022, the related consolidated statements of operations and comprehensive loss, stockholders' equity (deficit) and cash flows for each of the two years in the period ended December 31, 2023, and the related notes (collectively referred to as the “consolidated financial statements”). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2023 and 2022, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2023, in conformity with U.S. generally accepted accounting principles.

The Company's Ability to Continue as a Going Concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the financial statements, the Company has net losses in 2023 and negative cash flows from operating activities since its inception, and has stated that substantial doubt exists about the Company’s ability to continue as a going concern. Management's evaluation of the events and conditions and management’s plans regarding these matters are also described in Note 1. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

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

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

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

/s/ Ernst & Young LLP
We have served as the Company’s auditor since 2013.
San Diego, California
March 26, 2024

PART I—FINANCIAL INFORMATION

Item 1. Financial Statements.

eFFECTOR THERAPEUTICS, INC.

Consolidated Balance Sheets
(in thousands, except share and par value data)

	December 31, 2023	December 31, 2022
Assets		
Current assets:		
Cash and cash equivalents	$ 14,875	$ 8,708
Short-term investments	3,495	17,602
Prepaid expenses and other current assets	1,468	1,704
Total current assets	19,838	28,014
Property and equipment, net	140	241
Operating lease right-of-use assets	53	111
Other assets	513	711
Total assets	$ 20,544	$ 29,077
Liabilities and stockholders' equity (deficit)		
Current liabilities:		
Accounts payable	$ 2,330	$ 1,486
Accrued expenses	2,921	3,368
Current term loans, net	19,385	19,061
Accrued final payment on term loans, current	1,100	1,100
Lease liabilities, current portion	60	60
Total current liabilities	25,796	25,075
Other accrued liabilities, non-current	503	—
Earn-out liability	—	6

Non-current warrant liability	40	40
Non-current lease liabilities	—	60
Total liabilities	26,339	25,181
Commitments and contingencies		
Stockholders' equity (deficit):		
Preferred stock, $ 0.0001 par value; 100,000,000 shares authorized at December 31, 2023 and December 31, 2022; zero shares issued and outstanding as of December 31, 2023 and December 31, 2022	—	—
Common stock, $ 0.0001 par value; 40,000,000 shares authorized at December 31, 2023 and December 31, 2022; 2,994,679 shares issued and 2,982,679 shares issued and outstanding as of December 31, 2023; 1,679,602 shares issued and 1,667,602 shares issued and outstanding as of December 31, 2022[1]	—	—
Additional paid-in capital[1]	173,582	147,480
Accumulated other comprehensive loss	—	(18)
Accumulated deficit	(179,377)	(143,566)
Total stockholders' equity (deficit)	(5,795)	3,896
Total liabilities and stockholders' equity (deficit)	$ 20,544	$ 29,077

(1) Amounts have been retroactively restated to reflect the 1-for-25 reverse stock split effected on January 12, 2024 (see Note 1. Organization and Basis of Presentation of the accompanying notes to the consolidated financial statements).

The accompanying notes are an integral part of these consolidated financial statements.

eFFECTOR THERAPEUTICS, INC.

Consolidated Statements of Operations and Comprehensive Loss
(in thousands, except share and per share data)

	Year Ended December 31,	
	2023	2022
Grant revenue	$ —	$ 3,553
Operating expenses:		
Research and development	22,919	23,313
General and administrative	10,925	12,643
Total operating expenses	33,844	35,956
Operating loss	(33,844)	(32,403)
Other income (expense)		
Interest income	972	439
Interest expense	(2,919)	(2,251)
Other income (expense), net	(26)	(574)
Change in fair value of earn-out liability	6	12,124
Total other income (expense)	(1,967)	9,738
Net loss	$ (35,811)	$ (22,665)
Comprehensive loss:		
Net loss	(35,811)	(22,665)
Other comprehensive income (loss)	18	(18)
Comprehensive loss:	$ (35,793)	$ (22,683)
Net loss per share, basic and diluted[(1)]	$ (16.37)	$ (13.76)
Weighted-average common shares outstanding, basic and diluted[(1)]	2,186,954	1,647,183

(1) Amounts have been retroactively restated to reflect the 1-for-25 reverse stock split effected on January 12, 2024 (see Note 1. Organization and Basis of Presentation of the accompanying notes to the consolidated financial statements).

The accompanying notes are an integral part of these consolidated financial statements.

eFFECTOR THERAPEUTICS, INC.
Consolidated Statements of Stockholders' Equity (Deficit)
(in thousands, except share data)

	Common Stock[1]		Additional Paid-in Capital[1]	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity (Deficit)
	Shares	Amount				
Balance at December 31, 2021	1,615,598	$ —	$ 138,185	$ —	$ (120,901)	$ 17,284
Stock option exercises	193	—	3	—	—	3
Issuance of common stock, net of issuance costs	51,811	—	3,958	—	—	3,958
Stock-based compensation expense	—	—	5,334	—	—	5,334
Unrealized loss on short-term investments	—	—	—	(18)	—	(18)
Net loss	—	—	—	—	(22,665)	(22,665)
Balance at December 31, 2022	1,667,602	$ —	$ 147,480	$ (18)	$ (143,566)	$ 3,896
Stock option exercises	3,590	—	47	—	—	47
Issuance of common stock, net of issuance costs - Registered direct offerings	426,000	—	14,523	—	—	14,523
Exercise of prefunded warrants - Registered direct offerings	342,593	—	8	—	—	8
Issuance of common stock, net of issuance costs	542,894	—	6,929	—	—	6,929
Stock-based compensation expense	—	—	4,595	—	—	4,595
Unrealized gain on short-term investments	—	—	—	18	—	18
Net loss	—	—	—	—	(35,811)	(35,811)
Balance at December 31, 2023	2,982,679	$ —	$ 173,582	$ —	$ (179,377)	$ (5,795)

(1) Amounts have been retroactively restated to reflect the 1-for-25 reverse stock split effected on January 12, 2024 (see Note 1. Organization and Basis of Presentation of the accompanying notes to the consolidated financial statements).

The accompanying notes are an integral part of these consolidated financial statements.

eFFECTOR THERAPEUTICS, INC.

Consolidated Statements of Cash Flows
(in thousands)

	Year Ended December 31,	
	2023	**2022**
Operating activities:		
Net loss	$ (35,811)	$ (22,665)
Adjustments to reconcile net loss to cash used in operating activities:		
Depreciation and amortization expense	111	53
Accretion of discount and amortization of premium on investments, net	(473)	(37)
Stock-based compensation	4,595	5,334
Loss (gain) on disposal of assets	(3)	1
Gain on change in fair value of warrant liability	—	(638)
Gain on change in fair value of earn-out liability	(6)	(12,124)
Other expense related to the equity purchase agreement	29	1,161
Non-cash interest expense	323	339
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	587	1,575
Other non-current assets	192	192
Accounts payable	855	958
Accrued expenses	52	(52)
Operating lease right-of-use assets and liabilities, net	(1)	4
Net cash used in operating activities	(29,550)	(25,899)
Investing activities:		
Purchases of fixed assets	(97)	(192)
Maturities of short-term investments	31,750	34,750

Purchases of short-term investments	(17,169)	(52,418)
Net cash provided by (used in) investing activities	14,484	(17,860)
Financing activities:		
Payment of debt issuance costs	—	(37)
Proceeds from exercise of common stock options and warrants, net	56	3
Proceeds from issuance of common stock - Registered direct offerings, net of issuance costs	14,523	—
Proceeds from issuance of common stock including ESPP, net of issuance costs	6,654	2,799
Net cash provided by financing activities	21,233	2,765
Net increase (decrease) in cash and cash equivalents	6,167	(40,994)
Cash and cash equivalents at beginning of period	8,708	49,702
Cash and cash equivalents at end of period	$ 14,875	$ 8,708
Supplemental disclosure of cash flow information:		
Interest paid	$ 2,529	$ 1,823
Supplemental disclosure of non-cash investing and financing activities:		
Issuance of commitment shares	—	862
Purchases of fixed assets included in accounts payable and accrued expenses	—	12

The accompanying notes are an integral part of these consolidated financial statements.

eFFECTOR THERAPEUTICS, INC.

Notes to Consolidated Financial Statements

1. Organization and Basis of Presentation

Description of Business

Locust Walk Acquisition Corp. ("LWAC") was initially formed on October 2, 2020 as a Delaware corporation formed for the purpose of effecting a merger, capital stock exchange, asset acquisition, stock purchase, reorganization or other similar business transaction with one or more operating businesses.

On May 26, 2021, LWAC entered into an Agreement and Plan of Merger (the "Merger Agreement") with Locust Walk Merger Sub, Inc., a Delaware corporation and a wholly owned subsidiary of LWAC ("Merger Sub"), and eFFECTOR Therapeutics, Inc., a Delaware corporation ("Old eFFECTOR").

Pursuant to the terms of the Merger Agreement, a business combination between LWAC and Old eFFECTOR was effected through the merger of the Merger Sub with and into Old eFFECTOR, with Old eFFECTOR becoming the surviving company and a wholly-owned subsidiary of LWAC with the name of eFFECTOR Therapeutics Operations, Inc. On August 25, 2021, and in connection with the closing of the business combination (the "Business Combination"), LWAC was renamed eFFECTOR Therapeutics, Inc. ("eFFECTOR" or the "Company"). All outstanding preferred shares of Old eFFECTOR converted into common shares of Old eFFECTOR on a 1:1 basis, which were then converted, along with all outstanding common shares of Old eFFECTOR, into common shares of the surviving eFFECTOR company through application of an exchange ratio of approximately

0.09657

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The Company is a clinical-stage biopharmaceutical company focused on pioneering the development of a new class of oncology drugs the Company refers to as selective translation regulator inhibitors ("STRIs"). The Company's principal operations are in the United States, with its headquarters in Solana Beach, California. The Company has devoted substantially all of its resources to raising capital, identifying potential product candidates, establishing its intellectual property portfolio, conducting preclinical studies and clinical trials, establishing arrangements with third parties for the manufacture of its product candidates and related raw materials, and providing general and administrative support for these operations. The Company has not generated revenues from its principal operations, other than from licensing and grant revenue, through December 31, 2023.

Reverse Stock Split

On January 9, 2024, the Company filed a Certificate of Amendment to the Company's Amended and Restated Certificate of Incorporation, as amended to date, with the Secretary of State of the State of Delaware to effect a reverse stock split of the Company's common stock, par value $

0.0001

at a ratio of 1-for-25 (the "Reverse Stock Split"), as authorized at the Company's 2023 annual meeting of stockholders held on June 22, 2023. The Company effected the Reverse Stock Split on January 12, 2024. No fractional shares were issued in connection with the Reverse Stock Split. Stockholders who otherwise were entitled to a fractional share of common stock were entitled to receive a proportional cash payment. The number of shares of common stock that the Company is authorized to issue was proportionally reduced from

1,000,000,000

shares to

40,000,000

shares and the par value of its common stock remains unchanged at $

0.0001

per share.

The Company has retroactively restated the share and per share amounts in the consolidated financial statements as of December 31, 2023 and 2022. Proportionate adjustments were made to the per share exercise price and number of shares of common stock issuable under all outstanding stock options and warrants. In addition, proportionate adjustments have been made to the number of shares of common stock reserved for the Company's equity incentive compensation plans. The consolidated statements of stockholders' equity (deficit) and balance sheets reflect the impact of the Reverse Stock Split by reclassifying from "common stock" to "additional paid-in capital" in an amount equal to the par value of the decreased shares resulting from the Reverse Stock Split.

Basis of Presentation

The Company's consolidated financial statements are prepared in accordance with U.S. generally accepted accounting principles ("GAAP").

Liquidity

The Company has a limited operating history and the sales and income potential of the Company's business and market are unproven. The accompanying consolidated financial statements have been prepared assuming the Company will continue as a going concern, which contemplates the realization of assets and the satisfaction of liabilities in the normal course of business, and do not include any adjustments to reflect the possible future effects on the recoverability and classification of assets or amounts and classification of liabilities that may result from the outcome of this uncertainty.

Management is required to perform a two-step analysis over its ability to continue as a going concern. Management must first evaluate whether there are conditions and events that raise substantial doubt about the Company's ability to continue as a going concern (step 1). If management concludes that substantial doubt is raised, management is also required to consider whether its plans alleviate that doubt (step 2).

The Company has experienced net losses and negative cash flows from operating activities since its inception, aside from the years ended December 31, 2021 and December 31, 2020 when net income was realized as a result of a gain in fair value recognized associated with the earn-out liability and revenue in connection with the Research Collaboration and License Agreement with Pfizer, respectively. The Company has an accumulated deficit of $

179.4
million at December 31, 2023. For the year ended December 31, 2023, the Company had a net loss of $

35.8
million and used $

29.6
million in cash for operations. At December 31, 2023, the Company had cash and cash equivalents and short-term investments of $

18.4
million. The Company anticipates that its expenses will increase significantly in connection with its ongoing activities to support its research and development efforts, and it expects to incur substantial operating losses and negative cash flows from operations for the foreseeable future. Management has prepared cash flow forecasts which indicate that based on the Company's expected operating losses and negative cash flows, there is substantial doubt about the Company's ability to continue as a going concern within twelve months from the date that these financial statements for the year ended December 31, 2023 are issued. The principal payments due under the Oxford Loans (as defined below), and the related accrued final payment, have been classified as current liabilities as of December 31, 2023, due to the considerations discussed above and the assessment that the material adverse change clause under the Oxford Loans is not within the Company's control. The Company has not been notified of an event of default by the lender as of the date of issuance of these financial statements.

The Company's ability to continue as a going concern is dependent upon its ability to receive additional capital. Management intends to raise additional capital through equity offerings or other capital sources, including potential additional collaborations, licenses and other similar arrangements. Additionally, the Company may receive additional milestone payments from the Research Collaboration and License Agreement with Pfizer (described in Note 11), through the issuance of common stock under the equity purchase agreement (the "Purchase Agreement") with Lincoln Park Capital Fund, LLC ("Lincoln Park") (described in Note 8) or through the issuance of common stock under the at-the-market offering program (described in Note 8) with Cantor Fitzgerald & Co ("Cantor"). However, the Company may not be able to secure additional financing in a timely manner or on favorable terms, if at all, and may not receive any milestone payments. Without additional capital, the Company may be forced to delay, scale back or eliminate some of its research and development activities, or other operations and potentially delay product development in an effort to provide sufficient funds to continue its operations, or may be required to pursue merger or acquisition strategies, all of which could adversely affect the holdings or the rights of its stockholders.

2. Summary of Significant Accounting Policies

Use of Estimates

The Company's consolidated financial statements are prepared in accordance with accounting principles generally accepted in the United States ("GAAP"). The preparation of the Company's consolidated financial statements requires it to make estimates and assumptions that impact the reported amounts of assets, liabilities and expenses and the disclosure of contingent liabilities in the Company's consolidated financial statements and accompanying notes. The most significant estimate in the Company's consolidated financial statements relates to its clinical trial expense accruals. Management evaluates its estimates on an ongoing basis. Although these estimates are based on the Company's historical experience, knowledge of current events and actions it may undertake in the future, actual results may ultimately materially differ from these estimates and assumptions.

Cash, Cash Equivalents and Short-term Investments

Cash and Cash Equivalents

The Company considers all highly liquid investments with insignificant interest rate risk and an original maturity of three months or less at the date of purchase to be cash equivalents. Cash and cash equivalents consist of money market funds and U.S. Treasury securities with an original maturity of less than three months at the date of purchase.

Short-term Investments

Short-term investments consist of U.S. Treasury securities, classified as available-for-sale securities and have maturities of greater than three months but less than one year. The Company has classified all of its available-for-sale securities as current assets on the balance sheets because these are considered highly liquid securities and are available for use in current operations. The Company carries these securities at fair value, and reports unrealized gains and losses as a separate component of accumulated other comprehensive income (loss). Amortization and accretion of any purchase premiums or discounts is included in interest income in the consolidated statements of operations and comprehensive loss.

Fair Value of Financial Instruments

The carrying amounts of all cash equivalents, prepaid expenses and other assets, accounts payable and accrued liabilities are reasonable estimates of their fair value because of the short-term nature of these items. Based on the borrowing rates currently available to the Company for loans with similar terms, the Company believes the fair value of the term loans approximate their carrying value (see Note 6).

Concentration of Credit Risk and Other Risks and Uncertainties

Financial instruments, which potentially subject the Company to significant concentration of credit risk, consist primarily of cash and cash equivalents and short-term investments. The Company maintains deposits in a federally insured major financial institution in excess of federally insured limits. The Company has not experienced any losses in such accounts and management believes that the Company is not exposed to significant credit risk due to the financial position of the depository institution in which those deposits are held.

The Company is subject to a number of risks similar to other biopharmaceutical companies, including, but not limited to, the need to obtain adequate additional funding, possible failure of current or future preclinical studies or clinical trials, reliance on third parties or partners to conduct its clinical trials, the need to obtain regulatory and marketing approvals for its drug candidates or to rely on partners to do so, competitors developing new technological innovations, the need to successfully commercialize and gain market acceptance of its drug candidates, the right to develop and commercialize drug candidates pursuant to the terms and conditions of the licenses granted to the Company, protection of proprietary technology, the ability to make milestone, royalty or other payments due under any license or collaboration agreements, and the need to secure and maintain adequate manufacturing arrangements with third parties. If the Company does not successfully commercialize or partner any of its drug candidates, it will be unable to generate product revenue or achieve profitability.

Property and Equipment

Property and equipment are recorded at cost and depreciated or amortized using the straight-line method over the estimated useful lives of the assets (generally three to five years, or the remaining term of the lease for leasehold improvements, whichever is shorter) and generally consist of laboratory equipment, computer and office equipment, furniture and fixtures, and leasehold improvements. Repairs and maintenance costs are charged to expense as incurred.

Long-Lived Assets

The Company regularly reviews the carrying value and estimated lives of all of its long-lived assets, including property and equipment to determine whether indicators of impairment may exist which warrant adjustments to carrying values or estimated useful lives. Should an impairment exist, the impairment loss would be measured based on the excess over the carrying amount of the asset's fair value. The Company has

no
t recognized any impairment losses from inception through December 31, 2023.

Leases

At the commencement date of a lease, the Company recognizes lease liabilities which represent its obligation to make lease payments, and right-of-use assets ("ROU assets") which represent its right to use the underlying asset during the lease term. The lease liability is measured at the present value of lease payments over the lease term. As the Company's leases typically do not provide an implicit rate, the Company uses an incremental borrowing rate based on the information available at the lease commencement date. The ROU asset is measured at cost, which includes the initial measurement of the lease liability and initial direct costs incurred by the Company and excludes lease incentives. ROU assets are recorded in operating lease ROU assets and lease liabilities are recorded in operating lease liabilities, current and noncurrent in the balance sheets.

Grant Revenue

The Company had grant revenues in 2022 derived from a grant with the Defense Advanced Research Projects Agency ("DARPA") through the University of California, San Francisco ("UCSF"). The Company recognized DARPA grant revenue as reimbursable grant costs are incurred up to pre-approved award limits within the budget period. The costs associated with these reimbursements are reflected as a component of research and development expense in the accompanying 2022 consolidated statements of operations and comprehensive loss. Billings in excess of receipts are included as a receivable recorded within prepaid expenses and other current assets on the consolidated balance sheets.

Research and Development Costs

Research and development expenses primarily consist of costs associated with the preclinical and clinical development of the Company's product candidates. Research and development costs are expensed as incurred.

Clinical Trial Accruals and Preclinical Studies

The Company records expenses resulting from our obligations under contracts with vendors and consultants, CROs and clinical sites in connection with conducting clinical trials and preclinical studies. The financial terms of these contracts are subject to negotiations which vary from contract to contract and may result in payment flows that do not match the periods over which materials or services are provided under such contracts. The Company reflects clinical trial and preclinical study expenses in the financial statements by matching those expenses with the period in which services and efforts are expended. The Company accounts for these expenses according to the progress of the clinical trial or preclinical study as measured by the timing of various aspects of the clinical trial, preclinical study, or related activities. The Company determines accrual estimates based on the underlying contracts, correspondence with clinical and other key personnel and third-party service providers as to the progress of the clinical trials, preclinical studies, or other services being conducted, and amounts invoiced or paid to date. During the course of a clinical trial or preclinical study, the Company adjusts the rate of expense recognition if actual results differ from estimates.

Patent Costs

Costs related to filing and pursuing patent applications are recorded as general and administrative expense and expensed as incurred since recoverability of such expenditures is uncertain.

Revenue Recognition

The Company evaluates collaboration arrangements to determine whether units of account within the collaboration arrangement exhibit the characteristics of a vendor and customer relationship. For arrangements and units of account where a customer relationship exists, the Company applies the revenue recognition guidance. The Company recognizes revenue upon the transfer of promised goods or services to customers in an amount that reflects the consideration to which the Company expects to be entitled in exchange for those goods or services. To determine revenue recognition for contracts with customers the Company performs the following five steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the Company satisfies the performance obligations. At contract inception, the Company assesses the goods or services promised within each contract and assesses whether each promised good or service is distinct and determines those that are performance obligations. The Company then recognizes as revenue the amount of the transaction price that is allocated to the respective performance obligation when (or as) the performance obligation is satisfied.

If a license to the Company's intellectual property is determined to be distinct from the other performance obligations identified in the arrangement, the Company recognizes revenues from non-refundable, upfront fees allocated to the license when the license is transferred to the licensee and the licensee is able to use and benefit from the license. For licenses that are bundled with other performance obligations, the Company utilizes judgment to assess the nature of the combined performance obligation to determine whether the combined performance obligation is satisfied over time or at a point in time and, if over time, the appropriate method of measuring progress for purposes of recognizing revenue. The Company evaluates the measure of progress each reporting period and, if necessary, adjusts the measure of performance and related revenue recognition on a prospective basis.

For research and development services performed under a collaboration agreement in which the performance obligation is satisfied over time, the Company measures the progress of the activities using an input method. The input methods used are based on the effort expended or costs incurred toward the satisfaction of the related performance obligation. The Company estimates the amount of effort expended, including the time the Company estimates it will take to complete the activities, or costs incurred in a given period, relative to the estimated total effort or costs to satisfy the performance obligation. This results in a percentage that is multiplied by the consideration allocated to the research and development services to determine the amount of revenue recognized each period. This approach requires estimates and the use of significant judgement. If the estimates or judgements change over the course of the collaboration, they may affect the timing and amount of revenue recognized in the current and future periods.

Milestones

At the inception of each arrangement that includes milestone payments (variable consideration), the Company evaluates whether the milestones are considered probable of being reached and estimates the amount to be included in the transaction price using the most likely amount method. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within the Company or the Company's collaboration partner's control, such as regulatory approvals, are generally not considered probable of being achieved until those approvals are received. The transaction price is then allocated to each performance obligation on a relative stand-alone selling price basis, for which the Company recognizes revenue as or when the performance obligations under the contract are satisfied. At the end of each subsequent reporting period, the Company re-evaluates the probability of achievement of such milestones and any related constraint, and if necessary, adjusts the Company's estimate of the overall transaction price. Any such adjustments are allocated on a cumulative catch-up basis to satisfied and partially satisfied performance obligations, with the consideration allocated to an ongoing performance obligation being recognized over the period of performance.

Income Taxes

The Company accounts for income taxes under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the consolidated financial statements. Under this method, deferred tax assets and liabilities are determined on the basis of the differences between the consolidated financial statements and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date.

The Company recognizes deferred tax assets to the extent that the Company believes these assets are more likely than not to be realized. In making such a determination, management considers all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax-planning strategies, and results of recent operations. If management determines that the Company would be able to realize its deferred tax assets in the future in excess of their recorded amount, management would make an adjustment to the deferred tax asset valuation allowance, which would reduce the provision for income taxes.

As of December 31, 2023 and 2022, the Company maintained valuation allowances against its deferred tax assets as the Company concluded it had not met the “more likely than not” to be realized threshold. Changes in the valuation allowance when they are recognized in the provision for income taxes may result in a change in the estimated annual effective tax rate.

The Company records uncertain tax positions on the basis of a two-step process whereby (1) management determines whether it is more likely than not that the tax positions will be sustained on the basis of the technical merits of the position and (2) for those tax positions that meet the more likely than not recognition threshold, management recognizes the largest amount of tax benefit that is more than 50% likely to be realized upon ultimate settlement with the related tax authority. The Company recognizes interest and penalties related to unrecognized tax benefits within income tax expense. Any accrued interest and penalties are included within the related tax liability.

Comprehensive Loss

Comprehensive loss consists of net loss and unrealized gains or losses on available-for-sale investments. The Company presents comprehensive loss and its components as part of the consolidated statements of operations and comprehensive loss.

Segment Reporting

Operating segments are identified as components of an enterprise about which separate discrete financial information is available for evaluation by the chief operating decision-maker in making decisions regarding resource allocation and assessing performance. The Company and its chief operating decision-maker view the Company’s operations and manage its business in

one
operating segment.

Stock-Based Compensation Expense

Stock-based compensation expense represents the cost of the grant date fair value of employee stock option grants recognized over the requisite service period of the awards (usually the vesting period) on a straight- line basis. The Company estimates the fair value of stock option grants using the Black-Scholes option-pricing model. The Company accounts for stock options granted to non-employees using the fair value approach.

The Black-Scholes option-pricing model requires the use of subjective assumptions, including the risk- free interest rate, the expected stock price volatility, the expected term of stock options, and the expected dividend yield. The Company has limited historical stock option activity and therefore estimates the expected term of stock options granted using the simplified method, which represents the average of the contractual term of the stock option and its weighted-average vesting period. The fair value of the underlying common stock used within the Black-Scholes option-pricing model is based on the closing price of common stock on the date of grant.

Public and Private Placement Warrants

Upon completion of the Business Combination, the Company assumed public and private placement warrants that were issued by LWAC in connection with their initial public offering in January 2021 whereby holders of the public and private placement warrants are entitled to acquire common stock of the Company. The Company has concluded that the public warrants are equity-classified. Since the settlement value of the private placement warrants is dependent, in part, on who holds the warrants at the time of settlement, they are not considered indexed to the Company's stock and are therefore recorded as liabilities. Warrants classified as liabilities are recorded at their estimated fair value on the date of issuance and are revalued at each subsequent balance sheet date, with fair value changes recognized in other income (expense), net in the accompanying consolidated statements of operations and comprehensive loss. The Company estimates the fair value of these warrants using the Black-Scholes option pricing model.

Common Stock and Placement Agent Warrants

In May 2023 and June 2023, the Company completed two separate registered direct offerings whereby common stock warrants and placement agent warrants were issued with the right to acquire common stock of the Company. In order to determine the appropriate accounting treatment for the warrants, the Company considered the indexation guidance under Accounting Standards Codification ("ASC") 815-40. The Company has concluded that the common stock warrants and placement agent warrants issued in the May 2023 and June 2023 registered direct offerings are equity classified as they are considered indexed to the Company's stock and do not contain any settlement provisions that would preclude equity classification.

Earn-Out Shares

In accordance with the Merger Agreement,

200,000

shares ("Earn-Out Shares") were contingently issuable to Old eFFECTOR stockholders and option holders upon the occurrence of the Triggering Event, defined within the Merger Agreement as the date on which the common stock price equals or exceeds $

500.00

over at least 20 trading days out of a 30 consecutive trading day period during the two-year period following the close date of the Business Combination. The estimated fair value of the Earn-Out Shares was determined using a Monte Carlo simulation valuation model using a distribution of potential outcomes on a monthly basis over the earn-out period using the most reliable information available.

The Company determined that the contingent obligation to issue Earn-Out Shares to existing Old eFFECTOR stockholders was not indexed to the Company's stock under ASC 815-40 and therefore equity treatment was precluded. The Triggering Event that would determine the issuance of the Earn-Out Shares included terms that were not solely indexed to our common stock, and as such liability classification was required. Equity-linked instruments classified as liabilities are recorded at their estimated fair value on the date of issuance and are revalued at each subsequent balance sheet date, with fair value changes recognized in other income (expense), net in the accompanying consolidated statements of operations and comprehensive loss.

The Company has determined that the contingent obligation to issue Earn-Out Shares to existing Old eFFECTOR option holders falls within the scope of ASC 718, Share-based Compensation, because the option holders were required to continue providing service until the occurrence of the Triggering Event. The fair value of the option holder Earn-Out Shares was recorded as share-based compensation over the derived service period of the Monte Carlo simulation valuation model, recognized in research and development and general and administrative expense in the consolidated statements of operations and comprehensive loss.

The Triggering Event did not occur during the two-year period following the close date of the Business Combination and the achievement period for the earn-out expired on August 25, 2023. As such, the Old eFFECTOR stockholders and option holders are no longer eligible to receive Earn-Out shares as of August 25, 2023.

Recent Accounting Pronouncements

From time to time, new accounting pronouncements are issued by the Financial Accounting Standards Board ("FASB") or other standard setting bodies and adopted by the Company as of the specified effective date. Unless otherwise discussed, the Company believes, based on its preliminary assessment, that the impact of recently issued standards that are not yet effective will not have a material impact on their financial position or results of operations upon adoption.

In November 2023, the Financial Accounting Standards Board (“FASB”) issued updated accounting guidance related to annual and interim segment disclosures. The updated accounting guidance, among other things, requires disclosure of certain significant segment expenses. We will adopt the updated accounting guidance in our Annual Report on Form 10-K for the year ended December 31, 2024. We do not expect impact from the adoption of the new accounting guidance will have material impact to our segment disclosures.

In December 2023, the FASB issued ASU 2023-09, Income Taxes (Topic 740): Improvements to Income Tax Disclosures. The update requires a public business entity to disclose, on an annual basis, a tabular rate reconciliation using both percentages and currency amounts, broken out into specified categories with certain reconciling items further broken out by nature and jurisdiction to the extent those items exceed a specified threshold. In addition, all entities are required to disclose income taxes paid, net of refunds received disaggregated by federal, state/local, and foreign and by jurisdiction if the amount is at least 5% of total income tax payments, net of refunds received. Adoption of the ASU allows for either the prospective or retrospective application of the amendment and is effective for annual periods beginning after December 15, 2024, with early adoption permitted. The Company has not yet completed its assessment of the impact of ASU 2023-09 on the Company's Consolidated Financial Statements. We do not believe that any other recently issued, but not yet effective accounting pronouncements, if adopted, would have a material impact on our consolidated financial statements or disclosures.

Net Loss Per Share

Basic net loss per share is calculated by dividing the net loss by the weighted-average number of common shares outstanding for the period, without consideration of potential dilutive securities. Diluted net loss per share is computed by dividing the net loss by the sum of the weighted average number of common shares plus the potential dilutive effects of potential dilutive securities outstanding during the period. Potential dilutive securities are excluded from diluted earnings or loss per share if the effect of such inclusion is antidilutive. The Company's potentially dilutive securities have been excluded from the computation of diluted net loss per share as they would be anti-dilutive to the net loss per share. For all periods presented, there is no difference in the number of shares used to calculate basic and diluted shares outstanding due to the Company's net loss position.

Potentially dilutive securities as of December 31, 2023 and 2022 are as follows (in common stock equivalent shares, each as adjusted to reflect the Reverse Stock Split):

	For the Year Ended December 31,	
	2023	2022
Common stock warrants	768,592	—
Placement agent warrants	53,799	—
Public warrants	233,332	233,332
Private placement warrants	7,266	7,266
Earn-Out Shares	—	200,000
Unvested sponsor shares	12,000	12,000
Stock options outstanding	480,875	349,495
Total	1,555,864	802,093

3. Fair Value Measurements

The accounting guidance defines fair value, establishes a consistent framework for measuring fair value and expands disclosure for each major asset and liability category measured at fair value on either a recurring or nonrecurring basis. Fair value is defined as an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or liability. As a basis for considering such assumptions, the accounting guidance establishes a three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value as follows:

Level 1: Unadjusted quoted prices in active markets that are accessible at the measurement date for identical, unrestricted assets or liabilities.

Level 2: Quoted prices for similar assets and liabilities in active markets, quoted prices in markets that are not active, or inputs which are observable, either directly or indirectly, for substantially the full term of the asset or liability.

Level 3: Prices or valuation techniques that require inputs that are both significant to the fair value measurement and unobservable (i.e. supported by little or no market activity).

The Company's cash equivalents are classified using Level 1 inputs within the fair value hierarchy because they are valued using quoted market prices, broker or dealer quotations, or alternative pricing sources with reasonable levels of price transparency. None of the Company's non-financial assets or liabilities are recorded at fair value on a non-recurring basis.

No

transfers between levels have occurred during the periods presented.

The Company estimates the fair value of its warrant liabilities at the time of issuance and subsequent remeasurement using the Black-Scholes option pricing model at each reporting date, if required, based on the following inputs: the risk-free interest rates; the expected dividend rates; the remaining contractual life of the warrants; the fair value of the underlying stock; and the expected volatility of the price of the underlying stock. The

estimates are based, in part, on subjective assumptions and could differ materially in the future. Changes to these assumptions as well as the fair value of the Company's stock on the reporting date can have a significant impact on the fair value of the warrant liability.

The following table summarizes the Company's assets and liabilities that require fair value measurements on a recurring basis and their respective input levels based on the fair value hierarchy as of December 31, 2023 and December 31, 2022 (in thousands):

		Fair Value Measurements Using		
	December 31, 2023	Quoted Prices in Active Markets for Identical Assets Level 1	Significant Other Observable Inputs Level 2	Significant Unobservable Inputs Level 3
Assets				
Cash equivalents:				
Money market funds	$ 10,887	$ 10,887	$ —	$ —
U.S. Treasury securities	3,988	—	3,988	—
Short-term investments:				
U.S. Treasury securities	3,495	—	3,495	—
Total assets	$ 18,370	$ 10,887	$ 7,483	$ —
Liabilities				
Private placement warrant liability	$ 40	$ —	$ —	$ 40
Total liabilities	$ 40	$ —	$ —	$ 40

		Fair Value Measurements Using		
	December 31, 2022	Quoted Prices in Active Markets for Identical Assets Level 1	Significant Other Observable Inputs Level 2	Significant Unobservable Inputs Level 3
Assets				
Cash equivalents:				
Money market funds	$ 8,708	$ 8,708	$ —	$ —
Short-term investments:				
U.S. Treasury securities	17,602	—	$ 17,602	—
Total assets	$ 26,310	$ 8,708	$ 17,602	$ —
Liabilities				
Private placement warrant liability	$ 40	$ —	$ —	$ 40
Earn-out liability	6	—	—	6

Total liabilities	$ 46	$ —	$ —	$ 46

Cash Equivalents and Short-Term Investments

Financial assets measured at fair value on a recurring basis consist of the Company's cash equivalents and short-term investments. The Company obtains pricing information from its investment manager and generally determines the fair value of investment securities using standard observable inputs, including reported trades, broker/dealer quotes, and bids and/or offers.

Investments are classified as Level 1 within the fair value hierarchy if their quoted prices are available in active markets for identical securities. Investments in money market funds of $

10.9
million and $

8.7
million as of December 31, 2023 and December 31, 2022, respectively, were classified as Level 1 instruments and were included in cash and cash equivalents.

Investments in marketable securities are valued using Level 2 inputs. Level 2 securities are initially valued at the transaction price and subsequently valued and reported upon utilizing inputs other than quoted prices that are observable either directly or indirectly, such as quotes from third-party pricing vendors. Fair values determined by Level 2 inputs, which utilize data points that are observable such as quoted prices, interest rates and yield curves, require the exercise of judgment and use of estimates, that if changed, could significantly affect the Company's financial position and results of operations. Accrued interest receivable related to short-term investments was $

52,000
and $

27,000
as of December 31, 2023 and December 31, 2022, respectively, and included as part of prepaid expenses and other current assets in the consolidated balance sheets.

The following tables summarize the Company's short-term investments accounted for as available-for-sale securities as of December 31, 2023 and December 31, 2022 (in thousands):

		December 31, 2023			
	Maturity (in years)	Amortized Cost	Unrealized Gains	Unrealized Losses	Estimated Fair Value
U.S. Treasury securities	1 year or less	$ 3,495	$ —	$ —	$ 3,495
		$ 3,495	$ —	$ —	$ 3,495

		December 31, 2022			
	Maturity (in years)	Amortized Cost	Unrealized Gains	Unrealized Losses	Estimated Fair Value
U.S. Treasury securities	1 year or less	$ 17,620	$ 1	$ (19)	$ 17,602
		$ 17,620	$ 1	$ (19)	$ 17,602

Private Placement Warrant Liability

In connection with the Business Combination, the Company assumed the public and private placement warrants described in Note 2. The private placement warrants are precluded from equity treatment and are recorded as liabilities as they are not considered indexed to the Company's common stock. The private placement warrant liability is measured at fair value, using a combination of observable and unobservable inputs. The change in fair value of the private placement warrant liability is recorded in other income (expense) on the statement of operations and comprehensive loss. The following key assumptions were used in determining the fair value of the private placement warrant liability valued using the Black-Scholes option pricing model as of December 31, 2023 and December 31, 2022:

	December 31, 2023	December 31, 2022
Common stock price	$ 11.69	$ 10.69
Expected volatility	125.0 %	125.0 %
Risk-free interest rate	4.1 %	4.2 %
Expected term (in years)	2.7	3.7
Expected dividend yield	—	—

The following table presents activity for the private placement warrant liability measured at fair value using significant unobservable Level 3 inputs during the year ended December 31, 2023 (in thousands):

	Private Placement Warrant Liability
Balance at December 31, 2022	40
Change in fair value	—

Balance at December 31, 2023	$ 40

4. Property and Equipment, net

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

	December 31, 2023	December 31, 2022
Lab equipment	$ 30	$ 30
Computer and office equipment	154	149
Furniture and fixtures	78	61
Leasehold improvements	188	188
Construction in process	14	29
	464	457
Less accumulated depreciation and amortization	(324)	(216)
	$ 140	$ 241

The Company recorded depreciation and amortization expense of $ 111,000 and $ 53,000 for the years ended December 31, 2023 and 2022, respectively.

5. Accrued Expenses

Accrued expenses consist of the following (in thousands):

	December 31, 2023	December 31, 2022
Employee compensation	$ 1,587	$ 1,385
Research and development	1,036	1,206
Professional and outside services	75	112
Interest	223	197
Other	—	468
	$ 2,921	$ 3,368

6. Term Loans

Oxford Term Loans

In March 2021, Old eFFECTOR entered into a Loan and Security Agreement ("Oxford LSA") with Oxford Finance LLC ("Oxford"), pursuant to which the Company may borrow up to $

30.0

million, issuable in

two

separate tranches of $

20.0

million ("Term A Loans") and $

10.0

million ("Term B Loans"), collectively referred to as the Oxford Loans. In March 2021, the Company borrowed $

20.0

million of the Term A Loans. The Company is required to make a final payment equal to

5.5

% of the Term A Loans at maturity, which has been recorded as a debt discount for the Term A Loans and is being amortized over the term of the debt arrangements. In connection with the Oxford LSA, the Company issued warrants to purchase a total of

1,503

shares of Series C Preferred Stock at an exercise price of $

133.25

per share.

On February 22, 2022, the Company entered into an amendment to the Oxford LSA whereby the interest only period for the Term A Loans ended on March 1, 2024 . In connection with the amendment, the maturity of the Term A Loans was extended from March 18, 2026 to February 1, 2027. Additionally, Term B Loans would have become available to the Company after January 1, 2023 upon achievement of certain clinical development milestones, until the earlier of (i) June 30, 2023 , (ii) 45 days after the achievement of certain clinical development milestones, and (iii) the occurrence of an event of default. As the Company did not achieve the clinical development milestones by June 30, 2023, it no longer has access to the additional $

10.0

million under the Term B Loans. The amendment was accounted for as a debt modification as the modified debt was not substantially different from the original debt and the cash flows were not significantly changed.

The Oxford Loans carry a variable interest rate equal to the greater of (i)

7.7

% and (ii) the sum of the prime rate plus

4.45

%. The Company has the option to prepay all, but not less than all, of the borrowed amounts, provided that the Company will be obligated to pay a prepayment fee equal to (i)

3.0

% of the outstanding principal balance of the applicable Oxford Loans if prepayment is made prior to the first anniversary of the effective date of the Oxford LSA, (ii)

2.0

% of the outstanding principal balance of the applicable Oxford Loans if prepayment is made after the first anniversary of the effective date of the Oxford LSA but before the second anniversary, and (iii)

1.0

% of the outstanding principal balance of the applicable Oxford Loans if prepayment is made after the second anniversary of the effective date of the Oxford LSA but before the third anniversary.

No

prepayment fee will apply for a prepayment made after the third anniversary of the effective date of the Oxford LSA and prior to the maturity date.

The Company's obligations under the Oxford LSA are secured by a first priority security interest in substantially all of its current and future assets, other than its owned intellectual property. The Company is also obligated to comply with various other customary covenants, including restrictions on its ability to encumber intellectual property assets without consent.

The Company recorded a debt discount of $

1.6

million for the estimated fair value of warrants, debt issuance costs, and final payment to be made, which is being amortized to interest expense over the term of the loan using the effective-interest method. As of December 31, 2023, the Company had $

20.0

million of outstanding principal under the Term A Loans of which $

19.4

million is reflected on the balance sheet net of debt discounts. Interest expense, including amortization of debt discount related to the Oxford Term A Loans, totaled $

2.9

million for the year ended December 31, 2023. The Company is in compliance with all covenants under the Oxford LSA as of December 31, 2023. The Term A Loans include customary events of default, including instances of a material adverse change in our operations, that may require prepayment of the outstanding Term A Loans. The principal payments due under the Oxford Loans, and the related accrued final payment, have been classified as current liabilities as of December 31, 2023, due to the considerations discussed in the Liquidity section of Note 1. The Company has not been notified of an event of default by the lender as of the date of issuance of these financial statements.

Based on the outstanding principal amounts for the Company's Term A Loans, the following table sets forth by year the Company's required future principal payments as of December 31, 2023 (in thousands):

As of December 31, 2023	
2024	$ 5,555
2025	6,667
2026	6,667
2027	1,111
Required future principal payments	$ 20,000
Unamortized debt discount	(615)
Current term loans, net as of December 31, 2023	$ 19,385

7. Warrants

Assumed Public Warrants and Private Placement Warrants

Following the consummation of the Business Combination, holders of the public warrants and private placement warrants are entitled to acquire common stock of the Company. The warrants became exercisable on January 12, 2022, which is 12 months from the closing of the LWAC's initial public offering. Each warrant entitles the registered holder to purchase one share of common stock at an exercise price of $ 287.50 per share. The public warrants and private placement warrants will expire on August 25, 2026, which is five years after the completion of the Business Combination.

Once the public warrants and private placement warrants became exercisable, the Company has the right to redeem the outstanding warrants in whole and not in part at a price of $ 0.25 per warrant upon a minimum of 30 days' prior written notice of redemption, if and only if the last sale price of the common stock equals or exceeds $ 450.00 per share for any 20 trading days within a 30 -trading day period ending on the third trading day prior to the date on which the Company sends the notice of redemption to the warrant holders.

The private placement warrants are identical to the public warrants except that, so long as they are held by the sponsor or its permitted transferees: (i) they will not be redeemable by the Company; (ii) they may be exercised by the holders on a cashless basis; and (iii) they are subject to registration rights.

Private placement warrants are liability-classified (See Note 3) and the public warrants are equity-classified. The following table summarizes the number of outstanding public warrants and private placement warrants and the corresponding exercise price as of December 31, 2023 and December 31, 2022:

	December 31, 2023	December 31, 2022	Exercise Price	Expiration Date
Public warrants	233,332	233,332	$ 287.50	August 24, 2026
Private placement warrants	7,266	7,266	$ 287.50	August 24, 2026

Warrants - Registered Direct Offerings

In May 2023, the Company completed a registered direct offering (“May 2023 Registered Direct Offering”) which included the issuance of

270,015
shares of common stock in the form of pre-funded warrants with a purchase price of $

16.35
per share and an exercise price of $

0.025
(the “May 2023 Pre-Funded Warrants”). The May 2023 Pre-Funded Warrants were immediately exercised. Additionally, in a concurrent private placement, the Company issued warrants to purchase up to

458,015
shares of common stock (the “May 2023 Common Stock Warrants”) with an exercise price of $

13.25
per share. The May 2023 Common Stock Warrants will expire on November 30, 2028 , which is five and one-half years from the issuance date. Further, the Company issued warrants to designees of the placement agent to purchase up to

32,060
shares of common stock ("May 2023 Placement Agent Warrants") with an exercise price of $

20.47
per share. The May 2023 Placement Agent Warrants will expire on May 26, 2028 , which is five years following the commencement of sales in the May 2023 Registered Direct Offering. See Note 8 for additional detail surrounding the May 2023 Registered Direct Offering.

In June 2023, the Company completed a registered direct offering (“June 2023 Registered Direct Offering”) which included the issuance of

72,578
shares of common stock in the form of pre-funded warrants with a purchase price of $

28.10
per share and an exercise price of $

0.025
(the “June 2023 Pre-Funded Warrants”). The June 2023 Pre-Funded Warrants were immediately exercised. Additionally, in a concurrent private placement, the Company issued warrants to purchase up to

310,577
shares of common stock (the “June 2023 Common Stock Warrants”) with an exercise price of $

25.00
per share. The June 2023 Common Stock Warrants will expire on December 8, 2028 , which is five and one-half years from the issuance date. Further, the Company issued warrants to designees of the placement agent to purchase up to

21,739
shares of common stock ("June 2023 Placement Agent Warrants") with an exercise price of $

35.1575
per share. The June 2023 Placement Agent Warrants will expire on June 6, 2028 , which is five years following the commencement of sales in the June 2023 Registered Direct Offering. See Note 8 for additional detail surrounding the June 2023 Registered Direct Offering.

The common stock warrants and placement agent warrants are equity-classified. The following table summarizes the number of outstanding common stock warrants and placement agent warrants and the corresponding exercise price as of December 31, 2023 and December 31, 2022:

	December 31, 2023	December 31, 2022	Exercise Price	Expiration Date
May 2023 Common Stock Warrants	458,015	—	$ 13.25	November 30, 2028
May 2023 Placement Agent Warrants	32,060	—	$ 20.47	May 26, 2028
June 2023 Common Stock Warrants	310,577	—	$ 25.00	December 8, 2028
June 2023 Placement Agent Warrants	21,739	—	$ 35.1575	June 6, 2028

8. Preferred Stock and Stockholders' Equity

Purchase Agreement

On January 24, 2022, the Company entered into the Purchase Agreement and a registration rights agreement with Lincoln Park which provides for the sale to Lincoln Park up to $

50.0
million of shares (the "Purchase Shares") of the Company's common stock over the thirty-six (36) month term of the Purchase Agreement. In connection with the Purchase Agreement, Lincoln Park made an initial purchase of $

3.0
million of shares of common stock, which equated to

22,304
shares of common stock, and the Company issued

5,717
shares of common stock to Lincoln Park as a commitment fee in connection with entering into the Purchase Agreement. The Company recognized $

0.8
million of other expense relating to the commitment fee share issuance. As of December 31, 2023, a total of

1,200
shares of common stock have been sold in addition to the upfront amount. There were

no
purchases under the Purchase Agreement during the year ended December 31, 2023.

Under the Purchase Agreement, the Company has sole discretion, subject to certain conditions, on any business day selected by the Company to require Lincoln Park to purchase up to

1,200
shares of common stock (the "Fully Adjusted Regular Purchase Share Limit") at the Purchase Price (as defined below) per purchase notice (each such purchase, a "Regular Purchase"). The Fully Adjusted Regular Purchase Share Limit may be increased as follows: to up to 2,000 shares if the closing price is not below $125.00, and up to 3,000 shares if the closing price is not below $250.00 . Lincoln Park's committed obligation under each Regular Purchase is capped at $

500,000
, unless the Parties agree otherwise. The purchase price for Regular Purchases (the "Purchase Price") shall be equal to the lesser of: (i) the lowest sale price of the common shares during the Purchase Date (as defined in the Purchase Agreement), or (ii) the average of the three (3) lowest closing sale prices of the common shares during the ten (10) business days prior to the Purchase Date.

In addition to Regular Purchases and subject to certain conditions and limitations, the Company in its sole discretion may require Lincoln Park on each Purchase Date to purchase on the following business day up to the lesser of (i) three (3) times the number of shares purchased pursuant to such Regular Purchase or (ii)

25
% of the trading volume on the Accelerated Purchase Date (as defined in the Purchase Agreement) (the "Accelerated Purchase") (unless the Parties agree otherwise) at a purchase price equal to the lesser of

97
% of (i) the closing sale price on the Accelerated Purchase Date, or (ii) the Accelerated Purchase Date's volume weighted average price (the "Accelerated Purchase Price"). The Company has the sole right to set a minimum price threshold for each Accelerated Purchase in the notice provided

with respect to such Accelerated Purchase and under certain circumstances and in accordance with the Purchase Agreement the Company may direct multiple Accelerated Purchases in a day.

The aggregate number of shares that the Company can sell to Lincoln Park under the Purchase Agreement may not exceed

325,357
shares of the Common Shares (which is equal to approximately

19.99
% of the shares of the Common Shares outstanding immediately prior to the execution of the Purchase Agreement) (the “Exchange Cap”), unless (i) shareholder approval is obtained to issue Purchase Shares above the Exchange Cap, in which the Exchange Cap will no longer apply, or (ii) the average price of all applicable sales of Common Shares to Lincoln Park under the Purchase Agreement equals or exceeds $

160.50
per share; provided that at no time may Lincoln Park (together with its affiliates) beneficially own more than

4.99
% of the Company’s issued and outstanding Common Shares.

The Purchase Agreement contains customary representations, warranties, covenants, closing conditions, indemnification and termination provisions. The Purchase Agreement may be terminated by the Company at any time, at its sole discretion, without any cost or penalty, by giving one business day notice to Lincoln Park. Further, Lincoln Park has covenanted not to engage in any direct or indirect short selling or hedging of the Common Shares. There are no limitations on the use of proceeds, financial or business covenants, restrictions on future financings (other than restrictions on the Company’s ability to enter into a similar type of agreement or Equity Line of Credit during the Term, excluding an At-The-Market transaction with a registered broker-dealer), rights of first refusal, participation rights, penalties or liquidated damages in the Purchase Agreement.

At-the-Market Offering Program

In September 2022, the Company entered into a Controlled Equity Offering Sales Agreement (the "Sales Agreement") with Cantor, under which the Company may, from time to time, sell shares of the Company's common stock having an aggregate offering price of up to $50

.0

million in "at the market" offerings (the "ATM Offering Program") through Cantor. Sales of the shares of common stock will be made at prevailing market prices at the time of sale, or as otherwise agreed with Cantor. Cantor will receive a commission from the Company of up to

3.0

% of the gross proceeds of any shares of common stock sold under the Sales Agreement. In August 2023, the Company amended and supplemented its prospectus, dated September 9, 2022 (the "Prospectus"), relating to the offer and sale of shares of its common stock pursuant to the Sales Agreement (the "Prospectus Supplement") as the Company was no longer subject to General Instruction I.B.6. of Form S-3, which limited the amounts that the Company could sell under the registration statement of which the Prospectus and Prospectus Supplement are a part. In connection with filing this Annual Report on Form 10-K, we will amend and supplement the Prospectus to reduce the amount of shares which can be sold pursuant to the Sales Agreement to be no more than one-third our public float, as calculated on the day of filing.

During the year ended December 31, 2023, the Company sold an aggregate of

537,200

shares of common stock at a weighted-average price of $

13.48

per share for gross proceeds of approximately $

7.2

million under the ATM Offering Program. Offering costs, including commissions, of approximately $

0.4

million were recorded as an offset to gross proceeds within additional paid-in capital.

During the year ended December 31, 2022, the Company sold an aggregate of

19,157

shares of common stock at a weighted-average price of $

15.03

per share for gross proceeds of approximately $

0.3

million under the ATM Offering Program. Offering costs, including commissions, of approximately $

0.2

million were recorded as an offset to gross proceeds within additional paid-in capital.

Registered Direct Offerings

The May 2023 Registered Direct Offering included the issuance and sale of an aggregate of

188,000

shares of the Company's common stock at a purchase price of $

16.375

per share in a registered direct offering priced at-the-market under Nasdaq rules. In addition, the offering included the issuance of the May 2023 Pre-Funded Warrants, which were immediately exercised, and the May 2023 Common Stock Warrants. The Company received gross proceeds from the May 2023 Registered Direct Offering of $

7.5

million with net proceeds of approximately $

6.7

million after deducting $

0.8

million in commissions and other transaction costs.

In connection with the May 2023 Registered Direct Offering, the Company paid H.C. Wainwright & Co., LLC, as exclusive placement agent, an aggregate cash fee equal to

7.0

% of the gross proceeds received by the Company from the offering and a management fee equal to

1.0

% of the gross proceeds received by the Company from the offering. The Company also paid the placement agent $

75,000

for non-accountable expenses and $

15,950

for clearing fees. Additionally, the Company issued designees of the placement agent the May 2023 Placement Agent Warrants, equal to

7.0

% of the aggregate number of shares of common stock and pre-funded warrants placed in the offering.

The June 2023 Registered Direct Offering included the issuance and sale of an aggregate of

238,000
shares of the Company's common stock at a purchase price of $

28.125
per share in a registered direct offering priced at-the-market under Nasdaq rules. In addition, the offering included the issuance of the June 2023 Pre-Funded Warrants, which were immediately exercised, and the June 2023 Common Stock Warrants. The Company received gross proceeds from the June 2023 Registered Direct Offering of $

8.7
million with net proceeds of approximately $

7.8
million after deducting $

0.9
million in commissions and other transaction costs.

In connection with the June 2023 Registered Direct Offering, the Company paid H.C. Wainwright & Co., LLC, as exclusive placement agent, an aggregate cash fee equal to

7.0
% of the gross proceeds received by the Company from the offering and a management fee equal to

1.0
% of the gross proceeds received by the Company from the offering. The Company also paid the placement agent $

50,000
for non-accountable expenses and $

15,950
for clearing fees. Additionally, the Company issued designees of the placement agent the June 2023 Placement Agent Warrants, equal to

7.0
% of the aggregate number of shares of common stock and pre-funded warrants placed in the offering.

Preferred Stock

Upon closing of the Business Combination transaction, pursuant to the terms of the Amended and Restated Certificate of Incorporation,

100,000,000
shares of preferred stock with a par value of $

0.0001
per share were authorized. eFFECTOR's Board of Directors (the "Board of Directors") has the authority, without further action by the stockholders to issue such shares of preferred stock in one or more series, to establish from time to time the number of shares to be included in each such series, and to fix the dividend, voting, and other rights, preferences and privileges of the shares. There were

no

issued and outstanding shares of preferred stock immediately after the closing of the Business Combination and no preferred stock has been issued as of December 31, 2023.

Sponsor Shares

In connection with the closing of the Business Combination, the LWAC sponsor received

162,250
shares of eFFECTOR common stock, of which

12,000
shares were subject to vesting if, on or prior to August 25, 2024, the price of shares of common stock equals or exceeds $

375.00
per share for a period of at least

20
trading days out of

30
consecutive trading days ending on the trading day immediately prior to the date of determination (the "Sponsor Shares"). The

12,000
Sponsor Shares subject to vesting meet the criteria for equity classification, but are not considered outstanding from an accounting perspective. These shares are considered issued but not outstanding as of December 31, 2023 and December 31, 2022, and have been excluded from outstanding shares in the calculation of loss per share for the years ended December 31, 2023 and 2022.

Employee Stock Purchase Plan

The ESPP provides for six-month offering periods, and at the end of each offering period, employees are able to purchase shares at

85
% of the lower of the fair market value of the Company's common stock on the first trading day of the offering period or on the last trading day of the offering period. An aggregate of

35,200
shares were initially reserved and available for issuance under the ESPP. The ESPP provides that the number of shares reserved and available for issuance under the plan will automatically increase each January 1, beginning on January 1, 2022, by

1.0
% of the outstanding number of shares of common stock on the immediately preceding December 31, or such lesser amount as determined by our Board of Directors; provided that the total number of shares of common stock that become available for issuance under the ESPP will never exceed

600,000
. If our capital structure changes because of a stock dividend, stock split or similar event, the number of shares that can be issued under the ESPP will be appropriately adjusted. As of December 31, 2023,

59,144
shares were reserved for future issuance under the ESPP. During the years ended December 31, 2023 and 2022,

5,694
and

3,433
shares of common stock were issued under the ESPP, respectively.

2013 Equity Incentive Plan

Prior to the Business Combination, Old eFFECTOR maintained its 2013 Equity Incentive Plan (the "2013 Plan"), under which Old eFFECTOR granted incentive stock options, restricted stock awards, and other stock-based awards to employees, directors, and non-employee consultants. Upon completion of the Business Combination, the Company ceased granting awards under the 2013 Plan and, as described below, all awards under the 2013 Plan were converted into awards under the 2021 Plan with the same terms and conditions. As of August 25, 2021, prior to the Business Combination transaction,

156,781
Old eFFECTOR options remained outstanding under the 2013 Plan. In connection with the completion of the Business Combination and the adoption of the 2021 Plan, no further awards will be granted under the 2013 Plan. As of December 31, 2023, there were

130,694
options outstanding under the 2013 Plan.

2021 Equity Incentive Plan

In connection with the consummation of the Business Combination on August 25, 2021, the Board of Directors approved the adoption of the 2021 Equity Incentive Plan (the "2021 Plan"). As of December 31, 2023,

446,630
shares of common stock are authorized for issuance pursuant to awards under the 2021 Plan, inclusive of any shares of common stock subject to stock options, restricted stock awards or other awards that were assumed in the Business Combination. As of December 31, 2023,

375,506
options to purchase common shares have been awarded and

96,449
shares remain available for issuance under the 2021 Plan. The 2021 Plan permits the granting of incentive stock options, restricted stock awards, other stock-based award or other cash-based awards to employees, directors, and non-employee consultants.

Options granted under the 2021 Plan are exercisable at various dates as determined upon grant and will expire no more than ten years from their date of grant, or in the case of certain non-statutory options, ten years from the date of grant. The exercise price of each option shall be determined by the Board of Directors based on the fair market value of the Company's stock on the date of the option grant, defined as the closing sales price of the Company's common stock. In the case of incentive stock options, the exercise price shall not be less than

100
% of the fair market value of the Company's common stock at the time the option is granted. For holders of more than

10
% of the Company's total combined voting power of all classes of stock, incentive stock options may not be granted at less than

110
% of the fair market value of the Company's stock at the date of grant and for a term not to exceed five years .

A summary of the Company's stock option activity under the plans is as follows (in thousands, except share and per share amounts and years):

	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value
Outstanding at December 31, 2022	349,495	$ 68.23	7.4	$ —
Granted	151,589	13.01	9.1	
Exercised	(3,590)	13.00	—	
Cancelled or forfeited	(16,619)	55.70	6.6	
Outstanding at December 31, 2023	480,875	$ 51.67	7.3	$ —
Vested and exercisable at December 31, 2023	292,803	$ 57.64	6.3	$ —

For the year ended December 31, 2023 the total fair value of vested options was $

5.0

million. The weighted-average grant date fair value of employee and non-employee option grants during the year ended December 31, 2023 was $

9.39

per share and $

9.56

per share, respectively. The intrinsic value of options exercised during the years ended December 31, 2023 and 2022 was

zero

.

Stock-Based Compensation Expense

The Company recognized stock-based compensation expense specifically related to stock options of $

4.6

million and $

5.0

million for the years ended December 31, 2023 and 2022, respectively. The assumptions used in t he Black-Scholes option pricing model to determine the fair value of the stock option grants were as follows:

	Year Ended December 31, 2023	2022
Risk-free interest rate	3.6% - 4.4%	1.7% - 4.1%

Expected volatility	84% - 85%	82% - 86%
Expected term (in years)	5.3 - 6.1	5.2 - 6.1
Expected dividend yield	0%	0%

Risk-free interest rate. The risk-free rate assumption is based on the U.S. Treasury instruments, the terms of which were consistent with the expected term of the Company's stock options.

Expected volatility. Due to the Company's limited operating history and lack of company-specific historical or implied volatility, the expected volatility assumption was determined by examining the historical volatilities of a group of industry peers whose share prices are publicly available.

Expected term. The expected term of stock options represents the weighted-average period the stock options are expected to be outstanding. The Company uses the simplified method for estimating the expected term as provided by the SEC. The simplified method calculates the expected term as the weighted average of the time-to-vesting and the contractual life of the options.

Expected dividend yield. The expected dividend assumption is based on the Company's history and expectation of dividend payouts. The Company has not paid and does not intend to pay dividends.

Forfeitures. The Company reduces stock-based compensation expense for actual forfeitures during the period in which they occur.

As of December 31, 2023, the unrecognized compensation cost related to outstanding employee options was $ 4.6 million and is expected to be recognized as expense over approximately 2.2 years. Unrecognized compensation cost related to outstanding nonemployee options was $ 0.9 million as of December 31, 2023, and is expected to be recognized as expense over approximately 0.7 years.

Common Stock Reserved for Future Issuance

Common stock reserved for future issuance consists of the following as of December 31, 2023:

	December 31, 2023
Stock options issued and outstanding	480,875
Public warrants issued and outstanding	233,332
Private placement warrants issued and outstanding	7,266
Common stock warrants issued and outstanding	768,592
Placement agent warrants issued and outstanding	53,799
Unvested sponsor shares	12,000
Authorized for future stock awards or option grants	96,449
Authorized for future issuances under the ESPP	59,144
Total	1,711,457

9. Earn-Out Shares

In accordance with the Merger Agreement,

200,000

Earn-Out Shares were contingently issuable to Old eFFECTOR stockholders and option holders upon the occurrence of the Triggering Event, defined within the Merger Agreement as the date on which the common stock price equals or exceeds $

500.00

over at least 20 trading days out of 30 consecutive trading day period for the two-year period following the close date of the Business Combination. The Triggering Event did not occur during the two-year period following the close date of the Business Combination and therefore the achievement period for the earn-out expired on August 25, 2023. As such, the Old eFFECTOR stockholders and option holders are no longer eligible to receive Earn-Out shares as of August 25, 2023 and the value of the earn-out liability is zero as of December 31, 2023. The resulting reduction in value was recorded as a gain on change in fair value of the earn-out liability and included within the consolidated statements of operations and comprehensive loss for the year ended December 31, 2023.

As of December 31, 2022, the stockholders and option holders were eligible to receive approximately

182,422

and

17,512

Earn-Out Shares, respectively. The fair value per share of the Earn-Out Shares was less than $

0.01

as of December 31, 2022. The fair value was determined using a Monte Carlo simulation valuation model using a distribution of potential outcomes on a monthly basis over the earn-out period using the most reliable information available. Assumptions used in the valuation were as follows:

	December 31, 2022
Stock price	$ 10.69

Expected volatility	115.0 %
Risk-free interest rate	4.8 %
Forecast period (in years)	0.6
Cost of equity	20.0 %

Old eFFECTOR Stockholders

The Company determined that the contingent obligation to issue Earn-Out Shares to existing Old eFFECTOR stockholders was not indexed to the Company's stock under ASC 815-40 and therefore equity treatment was precluded. The Triggering Event that would determine the issuance of the Earn-Out Shares includes terms that are not solely indexed to the common stock of the Company, and as such liability classification was required. The Company estimated the fair value of the shareholder Earn-Out Shares at date of issuance and revalued the liability each reporting period with the changes in fair value being recorded to the consolidated statements of operations and comprehensive loss. In accordance with the Merger Agreement, Earn-Out Shares attributable to Old eFFECTOR option holders who discontinue providing service before the occurrence of the Triggering Event are reallocated to the remaining eligible stockholders and option holders. As the two-year period following the close date of the Business Combination expired on August 25, 2023, the earn-out liability of approximately $

6,000
was reduced to

zero
during the year ended December 31, 2023 and a gain on change in fair value was recognized on the consolidated statement of operations and comprehensive loss. For the year ended December 31, 2022, there was a decrease in the earn-out liability of $

12.1
million which was recorded as a gain on change in fair value within the consolidated statement of operations and comprehensive loss.

The contingent obligation, prior to the earn-out expiration, to issue Earn-Out Shares to existing Old eFFECTOR option holders falls within the scope of ASC 718, Share-based Compensation, because the option holders were required to continue providing service until the occurrence of the Triggering Event. The fair value of the option holder Earn-Out Shares at the consummation date of the Business Combination was approximately $

7.9
million, which was recorded as share-based compensation over the derived service period of 0.36 years following the consummation of the Business Combination. For the year ended December 31, 2022 there was approximately $

0.3
million recorded in share-based compensation related to the Earn-Out Shares, and the derived service period was completed as of March 31, 2022, with

no
additional share-based compensation expense to be recorded.

10. License Agreements

In May 2013, the Company entered into an agreement with the Regents of the University of California ("UCSF") which provides the Company with an exclusive license to UCSF's patent rights in certain inventions (the "UCSF Translational Profiling Patent Rights") relating to translational profiling laboratory techniques initially developed at UCSF. Under the agreement, the Company is permitted to research, develop, make and sell products that it discovers and develops utilizing the UCSF Translational Profiling Patent Rights, which the Company refers to as licensed products, and use certain licensed processes utilizing the UCSF Translational Profiling Patent Rights and to sublicense such licensed products and processes.

In July 2021, the Company entered into an amendment to the license agreement to confirm the impact of the Business Combination on the license agreement, including clarifying that in connection with the closing of the Business Combination, the Company would pay UCSF a one-time cash payment of approximately $

1.0

million. The $

1.0

million payment was made to UCSF in August 2021 in connection with the close of the Business Combination. The Company is also required to make cash milestone payments to UCSF upon the completion of certain clinical and regulatory milestones for the licensed products. No milestone events occurred during the years ended December 31, 2023 and December 31, 2022. The aggregate remaining potential milestone payments are approximately $

375,000

.

The Company paid an annual minimum royalty of $

15,000

to UCSF during each of the years ended December 31, 2023 and 2022. All license related fees were recorded as research and development expense.

11. Research Collaboration and License Agreement

In December 2019, the Company entered into a Research Collaboration and License Agreement (the "Pfizer Agreement") with Pfizer to research and develop small molecules that target eIF4E.

Under the Pfizer Agreement, the Company was responsible for initial research in collaboration with Pfizer, and Pfizer is responsible for all further development of the program, including submission of an investigational new drug application and conducting all clinical development and commercialization activities. Pfizer is obligated to use commercially reasonable efforts to develop and seek regulatory approval for a licensed product, and commercialize a licensed product where Pfizer has received regulatory approval, in the United States and certain other countries. In the event the Company exercises its co-funding and co-promotion option, a joint steering committee will oversee the development plan and budget of the co-developed product, and the Company will have the responsibility to conduct a portion of product marketing presentations to healthcare providers.

Pursuant to the Pfizer Agreement, the Company received an upfront, one-time, non-refundable, non-creditable payment of $

15

million from Pfizer. Pfizer was obligated to reimburse the Company for costs incurred for research performed, up to a specified cap in the low double-digit millions. Upon the achievement of specified early development and regulatory milestones, Pfizer will be obligated to pay the Company up to $

80

million in the aggregate. For other non-early stage development milestones Pfizer's payment obligations to the Company depends upon whether the Company has exercised its co-funding and co-promotion option: 1) if it does not exercise the option, non-early stage development payments may total up to $

165

million in aggregate, and 2) if it does exercise the option, non-early stage development payments may total up to $

70

million in aggregate. Upon the achievement of specified sales milestones, Pfizer is also obligated to make tiered milestone payments of up to $

235

million in aggregate. On a product-by-product basis, Pfizer will also be required to pay the Company high single-digit percentage royalties on annual net sales of each licensed product. If the Company exercises its co-promotion and co-funding option, royalty payments will exclude sales in the United States and the Company will share with Pfizer profits from sale of the relevant licensed product in the United States.

The initial transaction price of $

27.0

million was allocated to the two performance obligations on a relative standalone value basis, with $

25.6

million allocated to the license and $

1.4

million allocated to the research activities, which were completed in 2020. The value attributable to the license was recognized upon delivery of the license to Pfizer and the value attributable to the research activities was recognized pro-rata based on the actual costs incurred by the Company compared to the total estimated costs of the research activities from the time of execution to the end of the research program.

There was

no

revenue recorded in connection with this agreement for the years ended December 31, 2023 and 2022 because all development and sales milestones (variable consideration) were fully constrained.

12. DARPA Grant Revenue

In April 2021, the Company entered into a Research Subaward Agreement with UCSF (the "Subaward Agreement"), whereby up to $

5.0

million in allowable costs were reimbursable for clinical and manufacturing activities related to zotatifin for the treatment of COVID-19. Under the terms of the Subaward Agreement, the Company was obligated to provide financial and technical reports to UCSF on a periodic basis. The Subaward Agreement can be terminated by either party upon written notice and also in the event that DARPA suspends or terminates its cooperative agreement with UCSF. The initial award period for the Subaward Agreement ended in December 2021, and in April 2022 the Company received an extension of the award period to December 2022, with the same maximum $

5.0

million reimbursement amount. The Company did

no

t recognize any revenue under the Subaward Agreement in the year ended December 31, 2023. The Company recognized $

3.6

million of revenue under the Subaward Agreement in the year ended December 31, 2022. As of December 31, 2022, the Company exhausted the full $

5.0

million of allowable reimbursable costs under the Subaward Agreement.

13. Commitments and Contingencies

Leases

In September 2021, the Company entered a non-cancelable three-year lease for certain office space in Solana Beach, California, with an option to renew for an additional three-year term. In January 2024, the Company executed a three-year extension to the lease with a new expiration date of October 31, 2027. The initial term of the lease started on November 1, 2021, and is serving as the Company's headquarters. Rent expense under this lease was $

0.1

million for each of the years ended December 31, 2023 and 2022.

During each of the years ended December 31, 2023 and 2022, the Company paid $

0.1

million in lease payments. All lease payments were included in operating activities in the statements of cash flows.

The following table summarizes supplemental balance sheet information related to leases as of December 31, 2023 and December 31, 2022 (in thousands):

	December 31, 2023	December 31, 2022
Assets:		
Operating lease right-of-use assets	$ 53	$ 111
Total right-of-use assets	53	111
Liabilities		
Operating lease liabilities, current	60	60
Operating lease liabilities, non-current	—	60
Total operating lease liabilities	$ 60	$ 120

As of December 31, 2023, the future minimum annual lease payments under the existing operating leases were as follows (in thousands, except for weighted-average remaining lease term and weighted-average discount rate):

2024	62
Total remaining lease payments	62
Less: imputed interest	(2)
Total operating lease liabilities	60
Less: current portion	(60)
Long-term operating lease liabilities	$ -
Weighted-average remaining lease term (*in years*)	0.83

	8
Weighted-average discount rate	%

14. Employee Benefits

The Company has a defined contribution 401(k) plan available to eligible employees. Under the terms of the plan, employees may make voluntary contributions as a percent of compensation, limited to the maximum amount allowable under federal tax regulations. The Company, at its discretion, may make certain contributions to the 401(k) plan. Through December 31, 2023, the Company made

no
matching contributions.

15. Income Taxes

There was no income tax expense recorded by the Company for the years ended December 31, 2023 and 2022. Significant components of the Company's net deferred tax assets are summarized as follows (in thousands):

	December 31, 2023	December 31, 2022
Deferred tax assets:		
Net operating loss carryforwards	$ 46,365	$ 42,243
Intangibles	174	189
Research and development capitalization	6,525	3,839
Accrued compensation	2,070	2,282
Credits	9,395	8,013
Fixed assets	21	10
Other, net	99	88
Right-of-use liability	13	25
Deferred tax assets	64,662	56,689
Deferred tax liabilities:		
Right-of-use asset	(11)	(23)
Deferred tax liabilities	(11)	(23)
Net deferred tax assets	64,651	56,666
Valuation allowance	(64,651)	(56,666)
Net deferred tax assets	$ —	$ —

A reconciliation of the income tax computed at the federal statutory tax rate to the expense (benefit) for income taxes for the years ended

December 31, 2023 and 2022 is as follows (in thousands):

	December 31, 2023	December 31, 2022
Tax at statutory rate	$ (7,520)	$ (4,760)
State income taxes, net of federal benefits	—	(2,076)
Change in valuation allowance	7,990	7,726
Uncertain tax positions	793	586
Gain on change in fair value of earn-out liability	(1)	(2,546)
Permanent differences and other	974	281
Transaction costs	6	244
Capitalized R&D	—	3,381
LWAC net operating loss	(259)	(1,370)
Credits	(1,983)	(1,466)
Income tax expense	$ —	$ —

Management assesses all available evidence to estimate if sufficient future taxable income will be generated to use the existing deferred tax assets. The Company has experienced net losses since inception (aside from the years ended December 31, 2021 and December 31, 2020 when net income was realized as a result of a gain in fair value recognized associated with the earn-out liability and non-recurring revenue in connection with the Research Collaboration and License Agreement with Pfizer, respectively), and the revenue and income potential of the Company's business and market are unproven. Due to the Company's continuing research and development activities, the Company expects to continue to incur net losses into the foreseeable future. As such, the Company cannot conclude that it is more likely than not that its deferred tax assets will be realized. A valuation allowance of $

64.7
million and $

56.7
million at December 31, 2023 and 2022, respectively, has been established to offset the deferred tax assets, as realization of such assets is uncertain.

Utilization of net operating loss (“NOL”) and research and development (“R&D”) credit carryforwards may be subject to a substantial annual limitation due to ownership change limitations that may have occurred or that could occur in the future, as required by Sections 382 and 383 of the Internal Revenue Code of 1986, as amended (the “Code”), as well as similar state and foreign provisions. These ownership changes may limit the amount of NOL and R&D credit carryforwards that can be utilized annually to offset future taxable income and tax, respectively. In general, an “ownership change” as defined by Section 382 of the Code results from a transaction or series of transactions over a three-year period resulting in an ownership change of more than 50 percentage points of the outstanding stock of a company by certain stockholders. Since the Company’s formation, the Company has raised capital through the issuance of capital stock on several occasions, which on its own or combined with the purchasing stockholders’ subsequent disposition of those shares, may have resulted in such an ownership change, or could result in an ownership change in the future.

The Company completed a preliminary Code section 382 and 383 study from inception through December 31, 2020 and concluded that $

1.8
million of federal and California net operating losses and $

0.1
million of federal R&D credits will expire unused. The Company removed deferred tax assets for net operating loss of $

0.6
million and research credits of $

0.1
million from its deferred tax assets schedule and has recorded a corresponding decrease in the valuation allowance. The Company has not conducted a Sections 382 and 383 study after December 31, 2020. When such study is completed, the Company will adjust its deferred tax assets accordingly. Due to the existence of a full valuation allowance any subsequent ownership changes will not impact the Company’s effective tax rate.

The Company had federal and California NOL carryforwards of approximately $

200.9
million and $

93.8
million, respectively, portions of which begin to expire in 2034 and 2036, respectively. Federal NOLs of $

122.4
million carry forward indefinitely.

As of December 31, 2023, the Company had federal and California research and development (“R&D” tax) credit carryforwards of approximately $

11.4
million, inclusive of the federal orphan drug tax credit carryforward, and $

4.8
million, respectively. The federal R&D tax credit carryforwards will begin to expire in 2034, unless previously utilized. The California R&D tax credit carryforwards are available indefinitely. As of December 31, 2023, the Company also had federal orphan drug tax credit carryforwards of $

2.2
million that will begin to expire in 2037.

The Inflation Reduction Act 2022 which incorporates a Corporate Alternative Minimum Tax (CAMT) was signed on August 16, 2022. The changes will affect for the tax years beginning after December 31, 2022. The new tax will require companies to compute two separate calculations for federal income tax purposes and pay the greater of the new minimum tax or their regular tax liability. The Company will be monitoring the impacts of the act to determine if this will have an impact for the Company for years beginning after December 31, 2022. The act is not expected to have a material impact for the Company.

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, based on the technical merits. Income tax positions must meet a more likely than not recognition at the effective date to be recognized.

A reconciliation of the beginning and ending amount of unrecognized tax benefits for 2023 and 2022, excluding interest and penalties, is as follows (in thousands):

	December 31, 2023	December 31, 2022
Balance at beginning of the year	$ 8,860	$ 8,235
Additions/(reductions) for tax positions - prior year	117	—
Increase related to current year positions	840	625
Balance at the end of the year	$ 9,817	$ 8,860

For the year ended December 31, 2023, the Company recognized interest and penalties of approximately $

40,000
and

zero
, respectively, which are recorded in accrued expenses on the consolidated balance sheets. Interest and penalties are captured within the interest expense and other income (expense) lines, respectively, on the consolidated statements of operations and comprehensive loss. For the year ended December 31, 2022, the Company recognized interest and penalties of approximately $

62,000
and $

50,000
, respectively.

The Company currently files income tax returns in California and with the U.S. Internal Revenue Service. The Company currently has no tax periods under examination by any jurisdiction. Due to the existence of net operating loss carryforwards, all tax periods from inception of the Company are open for examination by taxing authorities for all jurisdictions.

Included in the balance of unrecognized tax benefits at December 31, 2023 is $

8.3
million that, if recognized, would not impact the Company's income tax expense (benefit) or effective tax rate as long as our deferred tax asset remains subject to a full valuation allowance. The Company does not expect any significant increases or decreases to our unrecognized tax benefits within the next 12 months.

16. Subsequent Events

On January 29, 2024, the Company completed the January 2024 Registered Direct Offering which included the issuance and sale of an aggregate of

338,000
shares of the Company's common stock at a purchase price of $

10.075
per share in a registered direct offering priced at-the-market under Nasdaq rules. In addition, the offering included the issuance of

1,150,834
shares of common stock in the form of pre-funded warrants,

497,834
of which were subsequently exercised, with a purchase price of $

10.074
per share and an exercise price of $

0.001
(the "January 2024 Pre-Funded Warrants"). Additionally, the Company issued warrants to purchase up to

1,488,834
shares of common stock (the "January 2024 Common Stock Warrants") with an exercise price of $

9.95
per share. The January 2024 Common Stock Warrants will expire on July 29, 2027 , which is three and one-half years from the issuance date.

Further, the Company issued warrants to designees of the placement agent to purchase up to

104,218
shares of common stock ("January 2024 Placement Agent Warrants") with an exercise price of $

12.5938
per share. The January 2024 Placement Agent Warrants will expire on July 29, 2027 , which is three and one-half years following the commencement of sales in the January 2024 Registered Direct Offering. The Company received gross proceeds from the January 2024 Registered Direct Offering of $

15.0
million with net proceeds of approximately $

13.6
million after deducting $

1.4
million in commissions and other transaction costs.

In connection with the January 2024 Registered Direct Offering, the Company paid H.C. Wainwright & Co., LLC, as exclusive placement agent, an aggregate cash fee equal to

7.0
% of the gross proceeds received by the Company from the offering and a management fee equal to

1.0
% of the gross proceeds received by the Company from the offering. The Company also paid the placement agent $

25,000
for non-accountable expenses, $

50,000
for fees and expenses of legal counsel and other out-of-pocket expenses, and $

15,950
for clearing fees. Additionally, the Company issued designees of the placement agent the January 2024 Placement Agent Warrants, equal to

7.0
% of the aggregate number of shares of common stock and pre-funded warrants placed in the offering.

EXHIBIT INDEX

Exhibit Number	Description	Incorporated by Reference		
		Form	Exhibit	Filing Date
2.1†	Agreement and Plan of Merger dated as of May 26, 2021, by and among Locust Walk Acquisition Corp., Locust Walk Merger Sub, Inc. and eFFECTOR Therapeutics, Inc.	8-K	2.1	5/27/2021
3.1	Amended and Restated Certificate of Incorporation of eFFECTOR Therapeutics, Inc.	8-K	3.1	8/31/2021
3.2	Certificate of Amendment to Amended and Restated Certificate of Incorporation of eFFECTOR Therapeutics, Inc.	8-K	3.1	6/23/2023
3.3	Certificate of Amendment to Amended and Restated Certificate of Incorporation of eFFECTOR Therapeutics, Inc.	8-K	3.1	1/10/2024
3.4	Amended and Restated Bylaws of eFFECTOR Therapeutics, Inc.	8-K	3.2	8/31/2021
4.1	Specimen common stock certificate.	S-4/A	4.1	8/5/2021
4.2	Warrant Agreement, dated January 7, 2021, by and between Continental Stock Transfer & Trust Company and Locust Walk Acquisition Corp.	8-K	4.1	1/13/2021
4.3	Description of Registered Securities.	10-K	4.3	3/16/2022
4.4	Form of Pre-Funded Warrant	8-K	4.1	5/30/2023
4.5	Form of Common Warrant	8-K	4.2	5/30/2023
4.6	Form of Wainwright Warrant	8-K	4.3	5/30/2023
4.7	Form of Pre-Funded Warrant	8-K	4.1	6/8/2023
4.8	Form of Common Warrant	8-K	4.2	6/8/2023
4.9	Form of Wainwright Warrant	8-K	4.3	6/8/2023
4.10	Form of Pre-Funded Warrant	8-K	4.1	1/26/2024
4.11	Form of Common Warrant	8-K	4.2	1/26/2024
4.12	Form of Wainwright Warrant	8-K	4.3	1/26/2024
10.1	Letter of Agreement, dated January 7, 2021, by and among Locust Walk Acquisition Corp. and certain security holders, officers and director of Locust Walk Acquisition Corp.	8-K	10.1	1/13/2021
10.2	Investment Management Trust Agreement, dated January 7, 2021, by and between Continental Stock Transfer & Trust Company and Locust Walk Acquisition Corp.	8-K	10.2	1/13/2021
10.3	Amended and Restated Registration Rights Agreement, dated August 25, 2021, by and among eFFECTOR Therapeutics, Inc., eFFECTOR Therapeutics Operations, Inc., Locust Walk Sponsor, LLC and certain stockholders.	8-K	10.3	8/31/2021
10.4	Unit Subscription Agreement, dated January 7, 2021, by and between Locust Walk Acquisition Corp. and Locust Walk Sponsor, LLC.	8-K	10.4	1/13/2021
10.5	Administrative Service Agreement, dated January 7, 2021, by and between Locust Walk Acquisition Corp. and Locust Walk Sponsor, LLC.	8-K	10.5	1/13/2021
10.6	Form of Indemnity Agreement of Locust Walk Acquisition Corp.	S-1	10.5	12/18/2020
10.7	Sponsor Support Agreement, dated May 26, 2021, by and among Locust Walk Acquisition Corp. and Locust Walk Sponsor, LLC.	8-K	10.1	5/27/2021
10.8	Sponsor Lock-up Agreement, dated May 26, 2021, by and between Locust Walk Sponsor, LLC. and Locust Walk Acquisition Corp.	8-K	10.2	5/27/2021
10.9	Form of Subscription Agreement, dated May 26, 2021, by and among Locust Walk Acquisition Corp. and certain subscribers.	8-K	10.3	5/27/2021

10.10+	eFFECTOR Therapeutics, Inc. 2021 Incentive Award Plan and Form of Stock Option Agreement thereunder.	8-K	10.10	8/31/2021
10.11+	eFFECTOR Therapeutics, Inc. 2021 Employee Stock Purchase Plan.	8-K	10.11	8/31/2021
10.12+	Form of Indemnification Agreement.	S-4/A	10.12	8/5/2021
10.13#	Exclusive License Agreement, dated May 9, 2013, by and between eFFECTOR and the Regents of the University of California.	S-4	10.13	6/14/2021
10.14#	Research Collaboration and License Agreement, dated December 20, 2019, by and between eFFECTOR and Pfizer Inc.	S-4	10.14	6/14/2021
10.15	Loan and Security Agreement, dated March 19, 2021, by and among eFFECTOR and Oxford Finance LLC and the other lenders party thereto.	S-4	10.15	6/14/2021
10.16	Sublease Agreement, dated August 24, 2020, by and between eFFECTOR and Cardiff Oncology, Inc.	S-4	10.16	6/14/2021
10.17+	eFFECTOR Therapeutics, Inc. 2013 Equity Incentive Plan, as amended, and form of option agreement thereunder.	8-K	10.17	8/31/2021
10.18+	eFFECTOR Therapeutics, Inc. Amended and Restated Non-Employee Director Compensation Program.			*
10.19+	Second Amended and Restated Employment Agreement by and between Stephen T. Worland, Ph.D. and eFFECTOR.	S-4	10.19	6/14/2021
10.20+	Amended and Restated Employment Agreement by and between Mike Byrnes and eFFECTOR.	S-4	10.21	6/14/2021
10.21#	Amendment to Exclusive License Agreement, dated July 12, 2021, by and between eFFECTOR and the Regents of the University of California.	S-4/A	10.23	7/19/2021
10.22	Purchase Agreement, dated January 24, 2022, between eFFECTOR and Lincoln Park Capital Fund, LLC.	8-K	10.1	1/24/2022
10.23	Registration Rights Agreement, dated January 24, 2022, between eFFECTOR and Lincoln Park Capital Fund, LLC.	8-K	10.2	1/24/2022
10.24	Joinder and First Amendment to Loan and Security Agreement, dated September 7, 2021, by and among eFFECTOR and Oxford Finance LLC.	8-K	10.1	2/24/2022
10.25	Second Amendment to Loan and Security Agreement, dated February 22, 2022, by and among eFFECTOR and Oxford Finance LLC.	8-K	10.2	2/24/2022
10.26	Third Amendment to Loan and Security Agreement, dated April 28, 2022, by and among eFFECTOR and Oxford Finance LLC.	10-Q	10.1	5/10/2022
10.27	Controlled Equity Offering℠ Sales Agreement Sale Agreement by and between eFFECTOR and Cantor Fitzgerald & Co., dated September 1, 2022.	S-3	1.2	9/1/2022
10.28+	Employment Agreement, effective as of August 8, 2022, by and between eFFECTOR and Douglas Warner.	10-K	10.33	3/8/2023
10.29+	Employment Agreement, effective as of September 1, 2022, by and between eFFECTOR and Mayank Gandhi.	10-K	10.34	3/8/2023
10.30+	General Release of Claims, dated as of February 13, 2024, by and between eFFECTOR and Mayank Gandhi.			*
10.31	Form of Securities Purchase Agreement, dated as of May 26, 2023, by and between eFFECTOR and the purchasers named therein.	8-K	10.1	5/30/2023
10.32	Form of Securities Purchase Agreement, dated as of June 6, 2023, by and between eFFECTOR and the purchasers named therein.	8-K	10.1	6/8/2023
10.33	Form of Securities Purchase Agreement, dated as of January 24, 2024, by and between eFFECTOR and the purchasers named therein.	8-K	10.1	1/26/2024
23.1	Consent of 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 Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.	*
32.2**	Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.	*
97	Policy for Recovery of Erroneously Awarded Compensation	*
101.INS	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because XBRL tags are embedded within the Inline XBRL document.	*
101.SCH	Inline XBRL Taxonomy Extension Schema With Embedded Linkbase Documents	*
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)	*

† Certain of the exhibits and schedules to this Exhibit have been omitted in accordance with Regulation S-K Item 601(a)(5). The Company agrees to furnish a copy of all omitted exhibits and schedules to the SEC upon its request.
+ Indicates a management contract or compensatory plan.
# Portions of this Exhibit have been omitted in accordance with Regulation S-K Item 601(b)(10)(iv). The Registrant agrees to furnish an unredacted copy of this Exhibit to the SEC upon its request.
* Filed herewith.
** This certification is deemed not filed for purpose of Section 18 of the Exchange Act or otherwise subject to the liability of that section, nor shall it be deemed incorporated by reference into any filing under the Securities Act or the Exchange Act.

SIGNATURES

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

eFFECTOR Therapeutics, Inc.

Date: March 26, 2024

By: /s/ Stephen Worland
Stephen Worland, Ph.D.
President and Chief Executive Officer

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
/s/ Stephen Worland, Ph.D. **Stephen Worland, Ph.D.**	President and Chief Executive Officer (Principal Executive Officer)	March 26, 2024
/s/ Michael Byrnes **Michael Byrnes**	Chief Financial Officer (Principal Financial and Accounting Officer)	March 26, 2024
/s/ Brian M. Gallagher, Jr., Ph.D. **Brian M. Gallagher, Jr., Ph.D.**	Director and Board Chair	March 26, 2024
/s/ Elizabeth P. Bhatt **Elizabeth P. Bhatt**	Director	March 26, 2024
/s/ Chris Ehrlich **Chris Ehrlich**	Director	March 26, 2024
/s/ Kristen Harrington-Smith **Kristen Harrington-Smith**	Director	March 26, 2024
/s/ Barbara Klencke **Barbara Klencke**	Director	March 26, 2024
/s/ Caroline Loewy **Caroline Loewy**	Director	March 26, 2024

EFFECTOR THERAPEUTICS, INC.

AMENDED AND RESTATED NON-EMPLOYEE DIRECTOR COMPENSATION PROGRAM

Non-employee members of the board of directors (the "***Board***") of eFFECTOR Therapeutics, Inc. (the "***Company***") shall receive cash and equity compensation as set forth in this Non-Employee Director Compensation Program (this "***Program***"). The cash and equity compensation described in this Program shall be paid or be made, as applicable, automatically and without further action of the Board, to each member of the Board who is not an employee of the Company or any parent or subsidiary of the Company (each, a "***Non-Employee Director***") who is entitled to receive such cash or equity compensation, unless such Non-Employee Director declines the receipt of such cash or equity compensation by written notice to the Company and subject to any limits on non-employee director compensation set forth in the Equity Plan (as defined below). This Program shall remain in effect until it is revised or rescinded by further action of the Board. This Program may be amended, modified or terminated by the Board at any time in its sole discretion. The terms and conditions of this Program shall supersede any prior cash and/or equity compensation arrangements for service as a member of the Board between the Company and any of its Non-Employee Directors, except for equity compensation previously granted to a Non-Employee Director. This Program shall become effective on January 16, 2024 (the "***Effective Date***").

CASH COMPENSATION

The schedule of annual retainers (the "***Annual Retainers***") for the Non-Employee Directors is as follows:

Position	Amount
Base Board Fee	$40,000
Chair of the Board/Lead Independent Director	$35,000
Chair of Audit Committee	$15,000
Chair of Compensation Committee	$10,000
Chair of Nominating and Corporate Governance Committee	$8,000
Member of Audit Committee (non-Chair)	$7,500
Member of Compensation Committee (non-Chair)	$6,000
Member of Nominating and Corporate Governance Committee (non-Chair)	$4,000

For the avoidance of doubt, the Annual Retainers in the table above are additive and a Non-Employee Director shall be eligible to earn an Annual Retainer for each position in which he or she serves. The Annual Retainers shall be earned on a quarterly basis based on a calendar quarter and shall be paid in cash by the Company in arrears not later than the fifteenth day following the end of each calendar quarter. In the event a Non-Employee Director does not serve as a Non-Employee Director, or in the applicable position, for an entire calendar quarter, the Annual Retainer paid to such Non-Employee Director shall be prorated for the portion of such calendar quarter actually served as a Non-Employee Director, or in such position, as applicable. In addition, the Annual Retainers will be prorated for the first calendar quarter in which the Effective Date occurs, which proration will be based on the number of days of the calendar quarter remaining in such quarter after the Effective Date. The Board may adopt program that allows Non-Employee Directors to defer Annual Retainers.

EQUITY COMPENSATION

Each Non-Employee Director shall be granted the stock awards described below, which awards shall be granted under and subject to the terms and provisions of the Company's 2021 Incentive Award Plan, or any other applicable Company equity incentive plan then-maintained by the Company (the "***Equity Plan***"), and shall be subject to an award agreement, including attached exhibits, in substantially the form previously approved by the Board. All applicable terms of the Equity Plan apply to this Program as if fully set forth herein, and all grants of stock awards hereby are subject in all respects to the terms of the Equity Plan and the applicable award agreement.

A. Initial Awards. Each Non-Employee Director who is initially elected or appointed to the Board following the Effective Date shall be automatically granted stock options to purchase 1,600 shares of the Company's common stock under the Equity Plan on the date of such initial election or appointment. The awards described in this Section shall be referred to as "***Initial Awards***."

B. Annual Awards. A Non-Employee Director who (i) is serving on the Board as of the date of any annual meeting of the Company's stockholders following the Effective Date, and (ii) will continue to serve as a Non-Employee Director immediately following such meeting, shall be automatically granted stock options to purchase 800 shares of the Company's common stock under the Equity Plan on the date of such annual meeting. The awards described in this Section shall be referred to as "***Annual Awards***." For the avoidance of doubt, a Non-Employee Director elected for the first time to the Board at an annual meeting of the Company's stockholders shall only receive an Initial Award in connection with such election, and shall not receive any Annual Award on the date of such meeting as well.

Notwithstanding the foregoing, a Non-Employee Director shall have served as a Non-Employee Director for at least (6) months as of the date of any annual meeting to receive an Annual Award, unless otherwise determined by the Board; in which case, the Board may determine to grant such Non-Employee Director an Annual Award or a Prorated Annual Award (as defined below). "***Prorated Annual Award***" means the product determined by multiplying (i) the Annual Award,

by (ii) a fraction, the numerator of which is equal to (x) 365 minus (y) the number of days that elapsed from the date of the annual meeting of the Company's stockholders preceding the Non-Employee Director's date of initial election or appointment to the date of such initial election or appointment, and the denominator of which is 365.

C. Terms of Awards Granted to Non-Employee Directors.

1. *Vesting*. Each Initial Award shall vest and become exercisable in substantially equal monthly installments over the three years beginning on the date of the Non-Employee Director's election or appointment to the Board, subject to the Non-Employee Director continuing in service on the Board through each such vesting date. Each Annual Award shall vest and/or become exercisable at the earlier of the one-year anniversary of the grant of such Annual Award or the next annual meeting of the Company's stockholders, subject to the Non-Employee Director continuing in service on the Board through the applicable vesting date.

2. *Forfeiture.* Unless the Board otherwise determines, any portion of an Initial Award or Annual Award which is unvested at the time of a Non-Employee Director's termination of service on the Board as a Non-Employee Director shall be immediately forfeited upon such termination of service and shall not thereafter become vested. All of a Non-Employee Director's Initial Awards and Annual Awards shall vest in full immediately prior to the occurrence of a Change in Control (as defined in the Equity Plan), to the extent outstanding at such time.

3. *Reimbursements*. The Company shall reimburse each Non-Employee Director for all reasonable, documented, out-of-pocket travel and other business expenses incurred by such Non-Employee Director in the performance of his or her duties to the Company in accordance with the Company's applicable expense reimbursement policies and procedures as in effect from time to time.

* * * * *

GENERAL RELEASE OF CLAIMS

This GENERAL RELEASE OF CLAIMS (this "***Release***") is entered into by and between eFFECTOR Therapeutics, Inc. (the "***Company***"), and Mayank J. Gandhi, M.D. ("***Employee***"), as of the Effective Date (as defined below).

WHEREAS, the Company and Employee are parties to that certain Employment Agreement, effective as of September 1, 2022 (the "***Employment Agreement***"); and

WHEREAS, Employee's employment with the Company and its subsidiaries will terminate effective February 9, 2024 (the "***Termination Date***"); and

WHEREAS, the Company and Employee now wish to fully and finally resolve all matters between them.

NOW, THEREFORE, in consideration of, and subject to, the benefits payable to Employee described in Section 2(e) below, the adequacy of which is hereby acknowledged by Employee, and which Employee acknowledges that he would not otherwise be entitled to receive, Employee and the Company hereby agree as follows:

1. Effective Date; Termination of Employment.

(a) Effective Date. This Release shall become effective upon the occurrence of both of the following events: (i) execution of the Release by the parties; and (ii) expiration of the revocation period applicable under Section 3(d) below without Employee having given notice of revocation. The date of the last to occur of the foregoing events shall be referred to in this Release as the "***Effective Date***." Until and unless both of the foregoing events occur, this Release shall be null and void. Employee understands that Employee will not be given any benefits under this Release unless the Effective Date occurs on or before the date that is thirty (30) days following the Termination Date (as defined above).

(b) Termination of Employment. Employee's employment with the Company will terminate effective as of the Termination Date, including his position as Chief Business Officer (and any other officer titles or officer positions he may hold) of the Company (and any of its affiliates and subsidiaries). Employee shall execute any additional documentation necessary to effectuate such resignations.

2. Termination Date Matters.

(a) Compensation Through Termination Date. On the Termination Date, the Company shall issue to Employee his final paycheck, reflecting (A) Employee's fully earned but unpaid base salary, through the Termination Date at the rate then in effect, and (B) all accrued, unused paid time off due Employee through the Termination Date. Subject to Sections 2(b) and (e) below, Employee acknowledges and agrees that with his final check, Employee received all monies, bonuses, commissions, expense reimbursements, paid time off, or other compensation he earned or was due during his employment by the Company.

(b) Expense Reimbursements. The Company, within thirty (30) days after the Termination Date, will reimburse Employee for any and all reasonable and necessary business expenses incurred by Employee in connection with the performance of his job duties prior to the Termination Date,

which expenses shall be submitted to the Company with supporting receipts and/or documentation no later than thirty (30) days after the Termination Date.

(c) Benefits. Subject to Section 2(e)(ii) below, Employee's entitlement to health benefits from the Company, and eligibility to participate in the Company's benefit plans, shall cease on the last day of the calendar month in which the Termination Date occurs, except to the extent Employee elects to and is eligible to receive continued healthcare coverage pursuant to the provisions of the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended ("***COBRA***"), for himself and any covered dependents, in accordance with the provisions of COBRA. Employee's entitlement to other benefits from the Company, and eligibility to participate in the Company's other benefit plans and programs, shall cease on the Termination Date.

(d) Equity Awards. Employee holds stock options (the "***Stock Options***") to purchase shares of the Company's common stock issued to Employee by the Company pursuant to certain stock option agreements. Upon the Termination Date, Employee's outstanding Stock Options shall cease vesting and any unvested Stock Options shall terminate.

(e) Termination Benefits. In exchange for Employee's agreement to be bound by the terms of this Release, including, but not limited to, the release of claims in Section 3, Employee shall be entitled to receive the following benefits, which shall be the exclusive benefits to which Employee is entitled, unless Employee has materially breached the provisions of this Release, in which case Section 4(d) shall apply:

(i) Severance. Employee shall be entitled to receive Employee's monthly base salary as in effect immediately prior to the Termination Date for an additional nine (9) months after the Termination Date in accordance with the Company's usual payroll practices, with the first installment commencing on the first payroll date that is thirty (30) days following the Termination Date (and any installment payments which would otherwise have been paid to Employee before the thirtieth (30th) day following the Termination Date will be paid together with the first installment).

(ii) Benefits. Subject to Employee's valid election to continue healthcare coverage pursuant to the provisions of COBRA, the Company shall pay Employee on a monthly basis during the COBRA Period (as defined below) an amount equal to the employer portion of the premium cost for such COBRA coverage, based on the cost sharing levels in effect on the Termination Date, for Employee and Employee's eligible dependents who were covered under the Company's group health plans as of the Termination Date (calculated by reference to the premium as of the Termination Date). For purposes of this Agreement, "***COBRA Period***" shall mean the period beginning on the Termination Date and ending on the earlier of the nine (9)-month anniversary of the Termination Date and the date on which Employee becomes eligible to receive benefits under a "group health plan" (within the meaning of Section 4980B of the Internal Revenue Code of 1986, as amended (the "***Code***"), of Employee's subsequent employer, if any, or otherwise becomes ineligible for continued coverage under COBRA. Notwithstanding the previous sentence, with regard to such COBRA continuation coverage, if the Company determines in its sole discretion that it cannot provide the foregoing benefit without potentially violating applicable law (including, without limitation, Section 2716 of the Public Health Service Act), the Company shall in lieu thereof provide to Employee a taxable monthly payment in an amount equal to the monthly COBRA premium that Employee would be required to pay to continue Employee's and his covered dependents' group insurance coverages in effect on the Termination Date (which amount shall be based on the premiums for the first month of COBRA coverage).

3. General Release of Claims by Employee.

(a) Employee, on behalf of himself and his executors, heirs, administrators, representatives and assigns, hereby agrees to release and forever discharge the Company and all predecessors, successors and their respective parent corporations, affiliates, related, and/or subsidiary entities, and all of their past and present investors, directors, stockholders, officers, general or limited partners, employees, attorneys, agents and representatives, and the employee benefit plans in which Employee is or has been a participant by virtue of his employment with or service to the Company (collectively, the "***Company Releasees***"), from any and all claims, debts, demands, accounts, judgments, rights, causes of action, equitable relief, damages, costs, charges, complaints, obligations, promises, agreements, controversies, suits, expenses, compensation, responsibility and liability of every kind and character whatsoever (including attorneys' fees and costs), whether in law or equity, known or unknown, asserted or unasserted, suspected or unsuspected (collectively, "***Claims***"), which Employee has or may have had against such entities based on any events or circumstances arising or occurring on or prior to the date hereof, arising directly or indirectly out of, relating to, or in any other way involving in any manner whatsoever Employee's employment by or service to the Company or the termination thereof, including any and all claims arising under federal, state, or local laws relating to employment, including without limitation claims of wrongful discharge, breach of express or implied contract, fraud, misrepresentation, defamation, or liability in tort, and claims of any kind that may be brought in any court or administrative agency including, without limitation, claims under Title VII of the Civil Rights Act of 1964, as amended, 42 U.S.C. Section 2000, et seq.; the Americans with Disabilities Act, as amended, 42 U.S.C. § 12101 et seq.; the Rehabilitation Act of 1973, as amended, 29 U.S.C. § 701 et seq.; the Civil Rights Act of 1866, and the Civil Rights Act of 1991; 42 U.S.C. Section 1981, et seq.; the Age Discrimination in Employment Act, as amended, 29 U.S.C. Section 621, et seq. (the "***ADEA***"); the Equal Pay Act, as amended, 29 U.S.C. Section 206(d); regulations of the Office of Federal Contract Compliance, 41 C.F.R. Section 60, et seq.; the Family and Medical Leave Act, as amended, 29 U.S.C. § 2601 et seq.; the Fair Labor Standards Act of 1938, as amended, 29 U.S.C. § 201 et seq.; the Employee Retirement Income Security Act, as amended, 29 U.S.C. § 1001 et seq.; and the California Fair Employment and Housing Act, California Government Code Section 12940, et seq.

Notwithstanding the generality of the foregoing, Employee does not release any claim which, by law, may not be released, including the following claims:

(i) Claims for unemployment compensation or any state disability insurance benefits pursuant to the terms of applicable state law;

(ii) Claims for workers' compensation insurance benefits under the terms of any worker's compensation insurance policy or fund of the Company;

(iii) Claims pursuant to the terms and conditions of the federal law known as COBRA;

(iv) Claims for indemnity under the bylaws of the Company, as provided for by applicable law (including California Labor Code Section 2802) or under any applicable insurance policy with respect to Employee's liability as an employee, director or officer of the Company;

(v) Claims based on any right Employee may have to enforce the Company's executory obligations under this Release;

(vi) Employee's right to bring to the attention of the Equal Employment Opportunity Commission, the California Department of Fair Employment and Housing or any similar state agency in any other jurisdiction claims of discrimination; provided, however, that Employee does release his right to secure any damages for alleged discriminatory treatment;

(vii) Employee's right to communicate directly with, cooperate with, or provide information to, any federal, state or local government regulator; and

(viii) Any other Claims that cannot be released as a matter of law.

(b) EMPLOYEE ACKNOWLEDGES THAT HE HAS BEEN ADVISED OF AND IS FAMILIAR WITH THE PROVISIONS OF CALIFORNIA CIVIL CODE SECTION 1542, WHICH PROVIDES AS FOLLOWS:

"A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS WHICH THE CREDITOR OR RELEASING PARTY DOES NOT KNOW OR SUSPECT TO EXIST IN HIS OR HER FAVOR AT THE TIME OF EXECUTING THE RELEASE, THAT IF KNOWN BY HIM OR HER, WOULD HAVE MATERIALLY AFFECTED HIS OR HER SETTLEMENT WITH THE DEBTOR OR RELEASED PARTY."

BEING AWARE OF SAID CODE SECTION, EMPLOYEE HEREBY EXPRESSLY WAIVES ANY RIGHTS HE MAY HAVE THEREUNDER, AS WELL AS UNDER ANY OTHER STATUTES OR COMMON LAW PRINCIPLES OF SIMILAR EFFECT.

(c) Employee acknowledges that he is entitled to have twenty-one (21) days' time in which to consider this Release. Employee further acknowledges that the Company has advised him that he is waiving his rights under the ADEA, and that Employee should consult with an attorney of his choice before signing this Release, and Employee has had sufficient time to consider the terms of this Release. Employee represents and acknowledges that if Employee executes this Release before twenty-one (21) days have elapsed, Employee does so knowingly, voluntarily, and upon the advice and with the approval of Employee's legal counsel (if any), and that Employee voluntarily waives any remaining consideration period.

(d) Employee understands that after executing this Release, Employee has the right to revoke it within seven (7) days after his execution of it. Employee understands that this Release will not become effective and enforceable unless the seven (7) day revocation period passes and Employee does not revoke the Release in writing. Employee understands that this Release may not be revoked after the seven (7) day revocation period has passed. Employee also understands that any revocation of this Release must be made in writing and delivered in person to Stephen T. Worland, Ph.D., Chief Executive Officer and President of the Company, within the seven (7) day period.

(e) Employee understands that this Release shall become effective, irrevocable, and binding upon Employee on the eighth (8th) day after his execution of it, so long as Employee has not revoked it within the time period and in the manner specified in clause (d) above.

(f) This Release has been negotiated individually and is not part of a group exit incentive or other termination program.

(g) Employee represents and warrants to the Company Releasees that there has been no assignment or other transfer of any interest in any Claim that Employee may have against the Company Releasees. Employee agrees to indemnify and hold harmless the Company Releasees from any liability, claims, demands, damages, costs, expenses and attorneys' fees incurred as a result of any such assignment or transfer from Employee.

4. Confirmation of Continuing Obligations.

(a) PIIA. Employee hereby expressly reaffirms his obligations under the Company's Proprietary Information and Inventions Agreement (the "***PIIA***") a copy of which is attached to this Release as Exhibit A and incorporated herein by reference, and agrees that such obligations shall survive the Termination Date.

(b) Nondisparagement. Subject to Section 4(e), Employee agrees that he shall not disparage or otherwise communicate negative statements or opinions about the Company, the members of its Board of Directors, officers, employees, shareholders or agents. The Company agrees that neither the members of its Board of Directors nor its officers shall disparage or otherwise communicate negative statements or opinions about Employee.

(c)Return of Property. By signing below, Employee represents and warrants that he has returned to the Company all of the Company's property, documents (hard copy or electronic files), and information prior to signing this Release, he has not nor will he copy or transfer any Company information, nor will he maintain any Company information after the Termination Date.

(d)Remedy in the Event of Breach. In addition to all other rights and remedies available to the Company under law or in equity, the Company shall be entitled to withhold all benefits under Section 2(e) from Employee in the event of his material breach of this Release, including this Section 3.

(e)Exceptions. Notwithstanding anything in this Agreement or the PIIA to the contrary, nothing contained in this Agreement shall prohibit either party (or either party's attorney(s)) from (i) communicating directly with, filing a charge with, reporting possible violations of federal law or regulation to, participating in any investigation by, or cooperating with the U.S. Securities and Exchange Commission, the Financial Industry Regulatory Authority, the Equal Employment Opportunity Commission, the National Labor Relations Board (the "***NLRB***"), the Occupational Safety and Health Administration, the U.S. Commodity Futures Trading Commission, the U.S. Department of Justice or any other securities regulatory agency, self-regulatory authority or federal, state or local regulatory authority (collectively, "Government Agencies"), or making other disclosures that are protected under the whistleblower provisions of applicable law or regulation, (ii) communicating directly with, cooperating with, or providing information (including trade secrets) in confidence to any Government Agencies for the purpose of reporting or investigating a suspected violation of law, or from providing such information to such party's attorney(s) or in a sealed complaint or other document filed in a lawsuit or other governmental proceeding, and/or (iii) receiving an award for information provided to any Government Agency. Further, nothing herein will prevent Employee from participating in activity permitted by Section 7 of the National Labor Relations Act or from filing an unfair labor practice charge with the NLRB. Employee acknowledges that the Company has provided Employee with the following notice of immunity rights in compliance with the requirements of the Defend Trade Secrets Act: (x) Employee shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of Proprietary Information (as defined in the Proprietary Information Agreement) that is made in confidence to a Federal, State, or local government official or to an attorney solely for the purpose of reporting or investigating a suspected violation of law, (y) Employee shall not be held criminally or civilly liable under any Federal or State trade secret law for the disclosure of Proprietary Information that is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal and (z) if Employee files a lawsuit for retaliation by the Company for reporting a suspected violation of law, Employee may disclose the Proprietary Information to his attorney and use the Proprietary Information in the court proceeding, if the Employee files any document containing the Proprietary Information under seal, and does not disclose the Proprietary Information, except pursuant to court order. In addition, nothing in any part of this Release waives or otherwise limits Employee's rights to testify in a California judicial or legislative proceeding concerning alleged criminal conduct or alleged sexual harassment on the part of

any Company Releasee, provided Employee has been required or requested to attend the proceeding pursuant to a California court order or subpoena, or a written request from the California legislature. Further, nothing in this Agreement prevents Employee from discussing or disclosing information about unlawful acts in the workplace, such as harassment or discrimination or any other conduct that Employee has reason to believe is unlawful.

5. Arbitration. To the extent permitted by applicable law, any dispute, claim or controversy based on, arising out of or relating to Employee's employment or this Release shall be settled by final and binding arbitration in San Diego, California, before a single neutral arbitrator in accordance with the National Rules for the Resolution of Employment Disputes (the "***Rules***") of the American Arbitration Association ("***AAA***"), and judgment on the award rendered by the arbitrator may be entered in any court having jurisdiction. The Rules may be found online at www.adr.org. Arbitration may be compelled pursuant to the California Arbitration Act (Code of Civil Procedure §§ 1280 et seq.). If the parties are unable to agree upon an arbitrator, one shall be appointed by the AAA in accordance with its Rules. Each party shall pay the fees of its own attorneys, the expenses of its witnesses and all other expenses connected with presenting its case; however, Employee and the Company agree that, to the extent permitted by law, the arbitrator may, in his or her discretion, award reasonable attorneys' fees to the prevailing party. Other costs of the arbitration, including the cost of any record or transcripts of the arbitration, AAA's administrative fees, the fee of the arbitrator, and all other fees and costs, shall be borne by the Company. This Section 5 is intended to be the exclusive method for resolving any and all claims by the parties against each other for payment of damages under this Release or relating to Employee's employment; provided, however, that Employee shall retain the right to file administrative charges with or seek relief through any government agency of competent jurisdiction, and to participate in any government investigation, including but not limited to (a) claims for workers' compensation, state disability insurance or unemployment insurance; (b) claims for unpaid wages or waiting time penalties brought before the California Division of Labor Standards Enforcement; provided, however, that any appeal from an award or from denial of an award of wages and/or waiting time penalties shall be arbitrated pursuant to the terms of this Release; and (c) claims for administrative relief from the United States Equal Employment Opportunity Commission and/or the California Department of Fair Employment and Housing (or any similar agency in any applicable jurisdiction other than California); provided, further, that Employee shall not be entitled to obtain any monetary relief through such agencies other than workers' compensation benefits or unemployment insurance benefits. This Release shall not limit either party's right to obtain any provisional remedy, including, without limitation, injunctive or similar relief, from any court of competent jurisdiction as may be necessary to protect their rights and interests pending the outcome of arbitration, including without limitation injunctive relief, in any court of competent jurisdiction pursuant to California Code of Civil Procedure § 1281.8 or any similar statute of an applicable jurisdiction. Seeking any such relief shall not be deemed to be a waiver of such party's right to compel arbitration. Each party hereby expressly waives his, her or its right to a jury trial.

6. Additional Representations and Warranties By Employee. Employee represents that Employee has no pending complaints or charges against the Company Releasees, or any of them, with any state or federal court, or any local, state or federal agency, division, or department based on any event(s) occurring prior to the date Employee signs this Release.

7. Miscellaneous.

(a) Notices. Any notice required or permitted by this Release shall be in writing and shall be delivered as follows with notice deemed given as indicated: (i) by personal delivery when delivered personally; (ii) by overnight courier upon written verification of receipt; (iii) by email, telecopy or facsimile transmission upon acknowledgment of receipt of electronic transmission; or (iv) by certified or registered mail, return receipt requested, upon verification of receipt. Notice shall be sent to Employee

at the address listed on the Company's personnel records and to the Company at its principal place of business, or such other address as either party may specify in writing.

(b)Severability. In the event any provision of this Release is found to be unenforceable by an arbitrator or court of competent jurisdiction, such provision shall be deemed modified to the extent necessary to allow enforceability of the provision as so limited, it being intended that the parties shall receive the benefit contemplated herein to the fullest extent permitted by law. If a deemed modification is not satisfactory in the judgment of such arbitrator or court, the unenforceable provision shall be deemed deleted, and the validity and enforceability of the remaining provisions shall not be affected thereby.

(c)Governing Law and Venue. This Release is to be governed by and construed in accordance with the laws of the State of California applicable to contracts made and to be performed wholly within such State, and without regard to the conflicts of laws principles thereof. Any suit brought hereon shall be brought in the state or federal courts sitting in San Diego, California, the parties hereto hereby waiving any claim or defense that such forum is not convenient or proper. Each party hereby agrees that any such court shall have in personam jurisdiction over it and consents to service of process in any manner authorized by California law.

(d)Entire Agreement. This Release, together with the PIIA, and the other agreements referenced herein, constitutes the entire understanding between the parties with respect to its subject matter, superseding all prior agreements and understandings, written or oral, with respect to its subject matter, including, without limitation, the Employment Agreement. This Release may not be amended or modified, nor any provision hereof waived, other than by a writing signed by Employee and an authorized representative of the Company.

(e)Survival. The covenants, agreements, representations and warranties contained in or made in this Release shall survive the Termination Date or any termination of this Release.

(f)Counterparts. This Release may be executed in one or more counterparts, each of which shall be deemed an original, all of which together shall constitute one and the same instrument. agreement. This Release may be executed and delivered by facsimile or by .pdf file and upon such delivery the facsimile or .pdf signature will be deemed to have the same effect as if the original signature had been delivered to the other party.

(g)Non-transferability of Interest. None of the rights of Employee to receive any form of compensation payable pursuant to this Release shall be assignable or transferable except through a testamentary disposition or by the laws of descent and distribution upon the death of Employee. Any attempted assignment, transfer, conveyance, or other disposition (other than as aforesaid) of any interest in the rights of Employee to receive any form of compensation to be made by the Company pursuant to this Release shall be void. This Release does not create, and shall not be construed as creating, any rights enforceable by any person not a party to this Release.

(h)Withholding and other Deductions. All compensation payable to Employee hereunder shall be subject to such deductions as the Company is from time to time required to make pursuant to law, governmental regulation or order.

(i)Code Section 409A. To the extent applicable, this Release shall be interpreted in accordance with Section 409A of the Code, and Department of Treasury regulations and other interpretive guidance issued thereunder. To the extent that any provision in this Release is ambiguous as to its compliance with Section 409A of the Code, the provision shall be read in such a

manner that no payments payable under this Release shall be subject to an "additional tax" as defined in Section 409A(a)(1)(B) of the Code. For purposes of Section 409A of the Code, the right to a series of installment payments under this Release shall be treated as a right to a series of separate payments. For purposes of this Release, all references to Employee's "termination of employment" shall mean his "separation from service" (as defined in Treasury Regulation Section 1.409A-1(h)). Any reimbursement of expenses or in-kind benefits payable under this Release shall be made in accordance with Treasury Regulation Section 1.409A-3(i)(1)(iv) and shall be paid on or before the last day of Employee's taxable year following the taxable year in which Employee incurred the expenses. The amount of expenses reimbursed or in-kind benefits payable in one year shall not affect the amount eligible for reimbursement or in-kind benefits payable in any other taxable year of Employee's, and Employee's right to reimbursement for such amounts shall not be subject to liquidation or exchange for any other benefit. The parties acknowledge that the Termination Date will constitute the date of Employee's involuntary "separation from service" (as defined in Treasury Regulation Section 1.409A-1(h)).

(j)Waiver. The failure of either party hereto at any time to enforce performance by the other party of any provision of this Release shall in no way affect such party's rights thereafter to enforce the same, nor shall the waiver by either party of any breach of any provision hereof be deemed to be a waiver by such party of any other breach of the same or any other provision hereof.

(k)Interpretation; Construction. The headings set forth in this Release are for convenience only and shall not be used in interpreting this Release. This Release has been drafted by legal counsel representing the Company, but Employee has participated in the negotiation of its terms. Furthermore, Employee acknowledges that Employee has had an opportunity to review and revise the Release and have it reviewed by legal counsel, if desired, and, therefore, the normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Release. Either party's failure to enforce any provision of this Release shall not in any way be construed as a waiver of any such provision, or prevent that party thereafter from enforcing each and every other provision of this Release.

(l) **KNOWING AND VOLUNTARY; RIGHT TO ADVICE OF COUNSEL. EMPLOYEE REPRESENTS AND AGREES THAT, PRIOR TO SIGNING THIS RELEASE, EMPLOYEE HAS HAD THE OPPORTUNITY TO DISCUSS THE TERMS OF THIS RELEASE WITH LEGAL COUNSEL OF HIS CHOOSING. EMPLOYEE FURTHER REPRESENTS AND AGREES THAT HE IS ENTERING INTO THIS RELEASE KNOWINGLY AND VOLUNTARILY. EMPLOYEE AFFIRMS THAT NO PROMISE WAS MADE TO CAUSE HIM TO ENTER INTO THIS RELEASE, OTHER THAN WHAT IS PROMISED IN THIS RELEASE. EMPLOYEE FURTHER CONFIRMS THAT HE HAS NOT RELIED UPON ANY OTHER STATEMENT OR REPRESENTATION BY ANYONE OTHER THAN WHAT IS IN THIS RELEASE AS A BASIS FOR HIS RELEASE. EMPLOYEE ACKNOWLEDGES THAT HE HAS THE RIGHT, AND IS ENCOURAGED, TO CONSULT WITH HIS LAWYER; BY HIS SIGNATURE BELOW, EMPLOYEE ACKNOWLEDGES THAT HE HAS CONSULTED, OR HAS ELECTED NOT TO CONSULT, WITH HIS LAWYER CONCERNING THIS RELEASE.**

(Signature Page Follows)

IN WITNESS WHEREOF, the parties have executed this Release as of the date first set forth above.

EFFECTOR THERAPEUTICS, INC.

By: /s/ Steve Worland, Ph.D.
Name: Steve Worland, Ph.D.
Title: President and Chief Executive Officer

EMPLOYEE

/s/ Mayank J. Gandhi, M.D.
Mayank J. Gandhi, M.D.

[SIGNATURE PAGE TO GENERAL RELEASE AGREEMENT]

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

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

(1) Registration Statement (Form S-3 No. 333-267221) of eFFECTOR Therapeutics, Inc.,

(2) Registration Statement (Form S-3 No. 333-272738) of eFFECTOR Therapeutics, Inc., and

(3) Registration Statement (Form S-8 No. 333-260688) pertaining to the eFFECTOR Therapeutics, Inc. 2021 Incentive Award Plan, the eFFECTOR Therapeutics, Inc. 2021 Employee Stock Purchase Plan and the eFFECTOR Therapeutics, Inc. 2013 Equity Incentive Plan;

of our report dated March 26, 2024, with respect to the consolidated financial statements of eFFECTOR Therapeutics, Inc. included in this Annual Report (Form 10-K) of eFFECTOR Therapeutics, Inc. for the year ended December 31, 2023.

/s/ Ernst & Young LLP
San Diego, California
March 26, 2024

Exhibit 31.1

CERTIFICATION 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

I, Stephen T. Worland, certify that:

1. I have reviewed this Annual Report on Form 10-K of eFFECTOR Therapeutics, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

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

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

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

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

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

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

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

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

Date: March 26, 2024

By: /s/ Stephen Worland
Stephen T. Worland, Ph.D.
President, Chief Executive Officer and Director

Exhibit 31.2

CERTIFICATION 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

I, Michael Byrnes, certify that:

1. I have reviewed this Annual Report on Form 10-K of eFFECTOR Therapeutics, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

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

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

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

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

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

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

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

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

Date: March 26, 2024

By: /s/ Michael Byrnes
Michael Byrnes
Chief Financial Officer

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of eFFECTOR Therapeutics, Inc. (the "Company") on Form 10-K for the period ending December 31, 2023 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

Date: March 26, 2024

By: /s/ Stephen Worland
Stephen T. Worland, Ph.D.
President, Chief Executive Officer and Director

Exhibit 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of eFFECTOR Therapeutics, Inc. (the "Company") on Form 10-K for the period ending December 31, 2023 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

Date: March 26, 2024

By: /s/ Michael Byrnes
Michael Byrnes
Chief Financial Officer

EFFECTOR THERAPEUTICS, INC. POLICY FOR RECOVERY OF ERRONEOUSLY AWARDED COMPENSATION

eFFECTOR Therapeutics, Inc. (the "***Company***") has adopted this Policy for Recovery of Erroneously Awarded Compensation (the "***Policy***"), effective as of October 2, 2023 (the "***Effective Date***"). Capitalized terms used in this Policy but not otherwise defined herein are defined in Section 11.

1. Persons Subject to Policy

This Policy shall apply to current and former Officers of the Company.

2. Compensation Subject to Policy

This Policy shall apply to Incentive-Based Compensation received on or after the Effective Date. For purposes of this Policy, the date on which Incentive-Based Compensation is "received" shall be determined under the Applicable Rules, which generally provide that Incentive-Based Compensation is "received" in the Company's fiscal period during which the relevant Financial Reporting Measure is attained or satisfied, without regard to whether the grant, vesting or payment of the Incentive-Based Compensation occurs after the end of that period.

3. Recovery of Compensation

In the event that the Company is required to prepare a Restatement, the Company shall recover, reasonably promptly, the portion of any Incentive-Based Compensation that is Erroneously Awarded Compensation, unless the Committee has determined that recovery would be Impracticable. Recovery shall be required in accordance with the preceding sentence regardless of whether the applicable Officer engaged in misconduct or otherwise caused or contributed to the requirement for the Restatement and regardless of whether or when restated financial statements are filed by the Company. For clarity, the recovery of Erroneously Awarded Compensation under this Policy will not give rise to any person's right to voluntarily terminate employment for "good reason," or due to a "constructive termination" (or any similar term of like effect) under any plan, program or policy of or agreement with the Company or any of its affiliates.

4. Manner of Recovery; Limitation on Duplicative Recovery

The Committee shall, in its sole discretion, determine the manner of recovery of any Erroneously Awarded Compensation, which may include, without limitation, reduction or cancellation by the Company or an affiliate of the Company of Incentive-Based Compensation or Erroneously Awarded Compensation, reimbursement or repayment by any person subject to this Policy of the Erroneously Awarded Compensation, and, to the extent permitted by law, an offset of the Erroneously Awarded Compensation against other compensation payable by the Company or an affiliate of the Company to such person. Notwithstanding the foregoing, unless otherwise prohibited by the Applicable Rules, to the extent this Policy provides for recovery of Erroneously

Awarded Compensation already recovered by the Company pursuant to Section 304 of the Sarbanes-Oxley Act of 2002 or Other Recovery Arrangements, the amount of Erroneously Awarded Compensation already recovered by the Company from the recipient of such Erroneously Awarded Compensation may be credited to the amount of Erroneously Awarded Compensation required to be recovered pursuant to this Policy from such person.

5. Administration

This Policy shall be administered, interpreted and construed by the Committee, which is authorized to make all determinations necessary, appropriate or advisable for such purpose. The Board of Directors of the Company (the "***Board***") may re-vest in itself the authority to administer, interpret and construe this Policy in accordance with applicable law, and in such event references herein to the "Committee" shall be deemed to be references to the Board. Subject to any permitted review by the applicable national securities exchange or association pursuant to the Applicable Rules, all determinations and decisions made by the Committee pursuant to the provisions of this Policy shall be final, conclusive and binding on all persons, including the Company and its affiliates, equityholders and employees. The Committee may delegate administrative duties with respect to this Policy to one or more directors or employees of the Company, as permitted under applicable law, including any Applicable Rules.

6. Interpretation

This Policy will be interpreted and applied in a manner that is consistent with the requirements of the Applicable Rules, and to the extent this Policy is inconsistent with such Applicable Rules, it shall be deemed amended to the minimum extent necessary to ensure compliance therewith.

7. No Indemnification; No Liability

The Company shall not indemnify or insure any person against the loss of any Erroneously Awarded Compensation pursuant to this Policy, nor shall the Company directly or indirectly pay or reimburse any person for any premiums for third-party insurance policies that such person may elect to purchase to fund such person's potential obligations under this Policy. None of the Company, an affiliate of the Company or any member of the Committee or the Board shall have any liability to any person as a result of actions taken under this Policy.

8. Application; Enforceability

Except as otherwise determined by the Committee or the Board, the adoption of this Policy does not limit, and is intended to apply in addition to, any other clawback, recoupment, forfeiture or similar policies or provisions of the Company or its affiliates, including any such policies or provisions of such effect contained in any employment agreement, bonus plan, incentive plan, equity-based plan or award agreement thereunder or similar plan, program or agreement of the Company or an affiliate or required under applicable law (the "***Other Recovery Arrangements***").

The remedy specified in this Policy shall not be exclusive and shall be in addition to every other right or remedy at law or in equity that may be available to the Company or an affiliate of the Company.

9. Severability

The provisions in this Policy are intended to be applied to the fullest extent of the law; provided, however, to the extent that any provision of this Policy is found to be unenforceable or invalid under any applicable law, such provision will be applied to the maximum extent permitted, and shall automatically be deemed amended in a manner consistent with its objectives to the extent necessary to conform to any limitations required under applicable law.

10. Amendment and Termination

The Board or the Committee may amend, modify or terminate this Policy in whole or in part at any time and from time to time in its sole discretion. This Policy will terminate automatically when the Company does not have a class of securities listed on a national securities exchange or association.

11. Definitions

"***Applicable Rules***" means Section 10D of the Exchange Act, Rule 10D-1 promulgated thereunder, the listing rules of the national securities exchange or association on which the Company's securities are listed, and any applicable rules, standards or other guidance adopted by the Securities and Exchange Commission or any national securities exchange or association on which the Company's securities are listed.

"***Committee***" means the committee of the Board responsible for executive compensation decisions comprised solely of independent directors (as determined under the Applicable Rules), or in the absence of such a committee, a majority of the independent directors serving on the Board.

"***Erroneously Awarded Compensation***" means the amount of Incentive-Based Compensation received by a current or former Officer that exceeds the amount of Incentive-Based Compensation that would have been received by such current or former Officer based on a restated Financial Reporting Measure, as determined on a pre-tax basis in accordance with the Applicable Rules.

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

"***Financial Reporting Measure***" means any measure determined and presented in accordance with the accounting principles used in preparing the Company's financial statements, and any measures derived wholly or in part from such measures, including GAAP, IFRS and non-GAAP/IFRS financial measures, as well as stock or share price and total equityholder return.

"***GAAP***" means United States generally accepted accounting principles.

"***IFRS***" means international financial reporting standards as adopted by the International Accounting Standards Board.

"***Impracticable***" means (a) the direct costs paid to third parties to assist in enforcing recovery would exceed the Erroneously Awarded Compensation; provided that the Company (i) has made reasonable attempts to recover the Erroneously Awarded Compensation, (ii) documented such attempt(s), and (iii) provided such documentation to the relevant listing exchange or association, (b) to the extent permitted by the Applicable Rules, the recovery would violate the Company's home country laws pursuant to an opinion of home country counsel; provided that the Company has (i) obtained an opinion of home country counsel, acceptable to the relevant listing exchange or association, that recovery would result in such violation, and (ii) provided such opinion to the relevant listing exchange or association, or (c) recovery would likely cause an otherwise tax-qualified retirement plan, under which benefits are broadly available to employees of the Company, to fail to meet the requirements of 26 U.S.C. 401(a)(13) or 26 U.S.C. 411(a) and the regulations thereunder.

"***Incentive-Based Compensation***" means, with respect to a Restatement, any compensation that is granted, earned, or vested based wholly or in part upon the attainment of one or more Financial Reporting Measures and received by a person: (a) after beginning service as an Officer; (b) who served as an Officer at any time during the performance period for that compensation; (c) while the issuer has a class of its securities listed on a national securities exchange or association; and (d) during the applicable Three-Year Period.

"***Officer***" means each person who serves as an executive officer of the Company, as defined in Rule 10D-1(d) under the Exchange Act.

"***Restatement***" means an accounting restatement to correct the Company's material noncompliance with any financial reporting requirement under securities laws, including restatements that correct an error in previously issued financial statements (a) that is material to the previously issued financial statements or (b) that would result in a material misstatement if the error were corrected in the current period or left uncorrected in the current period.

"***Three-Year Period***" means, with respect to a Restatement, the three completed fiscal years immediately preceding the date that the Board, a committee of the Board, or the officer or officers of the Company authorized to take such action if Board action is not required, concludes, or reasonably should have concluded, that the Company is required to prepare such Restatement, or, if earlier, the date on which a court, regulator or other legally authorized body directs the Company to prepare such Restatement. The "Three-Year Period" also includes any transition period (that results from a change in the Company's fiscal year) within or immediately following the three completed fiscal years identified in the preceding sentence. However, a transition period between the last day of the Company's previous fiscal year end and the first day of its new fiscal year that comprises a period of nine to 12 months shall be deemed a completed fiscal year.