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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 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: 001-41802

NEUMORA THERAPEUTICS, INC.
(Exact Name of Registrant as Specified in its Charter)

Delaware	**84-4367680**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
490 Arsenal Way, Suite 200 **Watertown, Massachusetts**	**02472**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (857) 760-0900

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common stock, par value $0.0001 per share	NMRA	Nasdaq Global Select Market

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

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

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

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

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

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

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒	Smaller reporting company	☒
		Emerging growth company	☒

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

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

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

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

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

The registrant was not a public company as of June 30, 2022, the last business day of its most recently completed second fiscal quarter, and therefore, cannot calculate the aggregate market value of its voting and non-voting common equity held by non-affiliated as of such date. The registrant's common stock began trading on the Nasdaq Global Market on September 18, 2023.

The number of shares of Registrant's Common Stock outstanding as of March 1, 2024 was 158,886,101.

DOCUMENTS INCORPORATED BY REFERENCE

Part III incorporates certain information by reference from the registrant's proxy statement for the 2024 Annual Meeting of Shareholders. Such proxy statement will be filed no later than 120 days after the close of the registrant's fiscal year ended December 31, 2023.

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Special Note Regarding Forward-Looking Statements

This Annual Report on Form 10-K contains forward-looking statements concerning our business, operations and financial performance and condition, as well as our plans, objectives and expectations for our business, operations and financial performance and condition. Any statements contained herein that are not statements of historical facts may be deemed to be forward-looking statements. These statements involve known and unknown risks, uncertainties and other important factors that are in some cases beyond our control and may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements.

In some cases, you can identify forward-looking statements by terminology such as "aim," "anticipate," "assume," "believe," "contemplate," "continue," "could," "due," "estimate," "expect," "goal," "intend," "may," "objective," "plan," "predict," "potential," "positioned," "seek," "should," "target," "will," "would," and other similar expressions that are predictions of or indicate future events and future trends, or the negative of these terms or other comparable terminology. These forward-looking statements include, but are not limited to, statements about:

- our expectations regarding the potential market size and size of the potential patient populations for our product candidates and any future product candidates, if approved for commercial use;
- our clinical and regulatory development plans including any anticipated program milestones related thereto;
- the ability of our clinical trials to demonstrate safety and efficacy of our product candidates, and other positive results;
- our expectations with regard to the results of our clinical studies, preclinical studies and research and development programs, including the timing and availability of data from such studies;
- our estimates of the number of patients that we will enroll in our clinical trials and the timing of their enrollment;
- the timing of commencement of future preclinical studies and clinical trials and research and development programs;
- our ability to acquire, discover, develop and advance product candidates into, and successfully complete, clinical trials;
- our ability to reduce the time or increase the likelihood of success of our research and development relative to the traditional drug discovery paradigm using our precision neuroscience approach;
- our ability to improve, and the rate of improvement in, our precision neuroscience approach, or to realize benefits from such improvements;
- our expectations related to our precision neuroscience approach, including but not limited to whether it will have the same impact as data-driven precision medicine has had on the oncology field;
- our ability to achieve our mission to redefine neuroscience drug development by bringing forward the next generation of novel therapies that offer improved treatment outcomes and quality of life for patients suffering from brain diseases;
- our ability to scale our company;
- the timing of milestone payments;
- our intentions and our ability to establish collaborations and/or partnerships, and whether such collaborations and/or partnerships are successful;
- the timing or likelihood of regulatory filings and approvals for our product candidates;
- our commercialization, marketing and manufacturing, including any capabilities and expectations related thereto;
- our ability to keep pace with new technological developments;
- impact from future regulatory, judicial, and legislative changes or developments in the United States and foreign countries;
- our intentions with respect to the commercialization of our product candidates, if approved;
- the pricing and reimbursement of our product candidates, if approved;
- the implementation of our business model and strategic plans for our business and product candidates, including additional indications for which we may pursue;
- our ability to maintain our technical operations infrastructure to avoid errors, delays, or cybersecurity breaches;
- our ability to effectively manage our growth, including our ability to retain and recruit personnel, and maintain our culture;

- the scope of protection we are able to establish and maintain for intellectual property rights covering our product candidates, including the projected terms of patent protection;
- estimates of our expenses, future revenue, capital requirements, our needs for additional financing and our ability to obtain additional capital;
- our expected use of proceeds from this offering and our existing cash, cash equivalents and marketable securities;
- the period over which we estimate our existing cash, cash equivalents, and marketable securities and the net proceeds from this offering will be sufficient to fund our future operating expenses and capital expenditure requirements;
- the performance of our third-party suppliers and manufacturers;
- our expectations regarding the time during which we will be an emerging growth company under the JOBS Act;
- the impact to our business from general political conditions, including but not limited to, disruptions in U.S. government operations and funding, geopolitical conflicts such as the war between Russia and Ukraine, the war between Israel and Hamas, and any sanctions or other repercussions that may result therefrom;
- the impact to our business from general economic conditions, including but not limited to, rising inflation, recession risk, low consumer confidence and increasing interest rates;
- developments and projections relating to our competitors and our industry, including competing products; and
- other risks and uncertainties, including those listed under the caption “Risk Factors” in this Annual Report on Form 10-K.

These forward-looking statements are based on management’s current expectations, estimates, forecasts and projections about our business and the industry in which we operate and management’s beliefs and assumptions and are not guarantees of future performance or development and involve known and unknown risks, uncertainties and other factors that are in some cases beyond our control. As a result, any or all of our forward-looking statements in this Annual Report on Form 10-K may turn out to be inaccurate. Factors that may cause actual results to differ materially from current expectations include, among other things, those listed under the section titled “Risk Factors” and elsewhere in this Annual Report on Form 10-K. Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified, you should not rely on these forward-looking statements as predictions of future events. 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. We undertake no obligation to publicly update or revise any forward-looking statements contained herein for any reason after the date of this report to conform these statements to new information, actual results or changes in our expectations, except as required by applicable law.

In addition, statements that “we believe” and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this report, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain, and you are cautioned not to unduly rely upon these statements.

Investors and others should note that we may announce material business and financial information to our investors using our investor relations website, Securities and Exchange Commission filings, webcasts, press releases and conference calls. We use these mediums, including our website, to communicate with the public about our company, our business and other issues. It is possible that the information that we make available may be deemed to be material information. We, therefore, encourage investors and others interested in our company to review the information that we make available on our website.

PART I

ITEM 1. Business.

Overview

We are a clinical-stage biopharmaceutical company founded to confront the global brain disease crisis by taking a fundamentally different approach to the way treatments for brain diseases are developed. We have rapidly scaled our therapeutic pipeline, which currently consists of seven clinical and preclinical neuroscience programs that target novel mechanisms of action for a broad range of underserved neuropsychiatric disorders and neurodegenerative diseases. Our most advanced product candidate, navacaprant (NMRA-140), is a novel once-daily oral kappa opioid receptor (KOR) antagonist that is being developed for the treatment of major depressive disorder (MDD), which we believe has the potential to provide significant advantages relative to the standard of care, if approved. In 2023, we initiated a pivotal Phase 3 program called the KOASTAL program evaluating navacaprant monotherapy in patients with moderate to severe MDD. The KOASTAL program includes three replicate Phase 3 studies, KOASTAL-1, KOASTAL-2 and KOASTAL-3 as well as an open-label extension study, KOASTAL-LT, designed to evaluate the long-term safety of navacaprant which were all initiated in 2023. We anticipate releasing topline results from the KOASTAL-1 study in the second half of 2024 and topline results from the KOASTAL-2 and KOASTAL-3 studies in the first half of 2025. We also expect to initiate a Phase 2 study for navacaprant in bipolar depression in the first half of 2024 and anticipate releasing results from that study in 2025. In addition to Navacaprant, NMRA-266 is a positive allosteric modulator program of the M4 muscarinic receptor (M4R) for the treatment of schizophrenia. NMRA-266 is designed to be selective for the M4 receptor subtype of the muscarinic receptor family. In 2023 we initiated a Phase 1 single ascending dose / multiple ascending dose (SAD/MAD) study in healthy adult participants. We expect data from the SAD/MAD study to be available in mid-2024 and we expect to initiate a Phase 1b study with NMRA-266 in adults with SCZ in the second half of 2024.

Brain diseases collectively represent one of the largest areas of unmet medical need globally, affecting upwards of 1.5 billion patients. Despite the commercial success of historically approved drugs, the markets for many of the most prevalent brain disorders have been dominated by a single class of drugs, such as serotonin-targeting antidepressants for MDD, leaving patients with a high degree of unmet medical need given the lack of diverse treatment options and mechanisms of action. For example, there are currently over 21 million adults in the United States diagnosed with MDD, 85% of whom either do not receive treatment with a pharmacological agent or fail to achieve remission with first-line selective serotonin reuptake inhibitors (SSRI)/serotonin and norepinephrine reuptake inhibitors (SNRI) and thus progress onto second-line treatment with another SSRI/SNRI. In addition, patients with common neuropsychiatric disorders and neurodegenerative diseases are heterogeneous, presenting diverse symptoms and multiple underlying disease drivers. Despite the inherent heterogeneity of these disorders, patients are generally diagnosed based on broad disease classifications defined by subjective clinical symptoms rather than by specific underlying genetic and biological mechanisms. As a result, clinical development in neuroscience to date has taken a “one-size-fits-all” approach, in contrast to other areas that have employed more of a targeted patient selection approach. We believe the relative lack of progress and innovation within the broader CNS therapeutic landscape is due in large part to an insufficient degree of focus on novel, potentially more therapeutically relevant targets implicated in CNS diseases and clinical development strategies that often yield inconclusive results due to the inherent heterogeneity known to occur in patient populations classified by broad symptomatic domains.

We founded Neumora to confront these challenges by taking a fundamentally different approach to the way treatments for brain diseases are developed. We are redefining neuroscience drug development by:

- ***Building a diversified neuroscience company at scale with a broad therapeutic pipeline and significant capital resources***: We have raised approximately $850 million in funding and purpose-built an industry-leading team of company builders and neuroscience drug developers. As a result, we have quickly scaled a broad therapeutic pipeline consisting of seven clinical and preclinical programs, which we aim to develop to meet unmet medical need across brain health disorders.
- ***Focusing on therapeutic candidates with novel mechanisms of action***: We believe one of the key drivers in the lack of progress and innovation within the broader CNS landscape is the failure to advance sufficient novel therapies targeting new mechanisms of action. We have built a pipeline of seven clinical and preclinical programs that target novel mechanisms of action with the potential to provide new treatment options to patients that alleviate unmet medical need. Several of our programs target novel mechanisms of actions that have shown preclinical and clinical data from Neumora and other leading biopharmaceutical companies pursuing programs against the same target. For example, another KOR antagonist aticaprant (Janssen Pharmaceuticals) has demonstrated an improvement in depression and anhedonia in prior clinical trials and M4 muscarinic receptor-targeting compounds have demonstrated potential as an approach to treating schizophrenia in multiple, placebo-controlled clinical trials.

- ***Leveraging a precision neuroscience approach with the goal of maximizing the value of our programs***: To better understand the biological drivers of heterogeneous brain diseases and to identify targeted patient populations of interest, we have built our Precision Toolbox, which integrates a suite of translational and clinical tools with proprietary machine learning algorithms and methods, and incorporates insights from analyzing patient data. We believe our Precision Toolbox will enable us to execute potential strategies to gain confidence in a target or indication, help identify biomarkers, enroll the right patients in our clinical studies, optimize clinical trial designs and expand indication expansion opportunities; ultimately, supporting our goal of increasing the likelihood of matching the right drug for the right patient.

Our Strategy

We founded our company to confront the global brain disease crisis by taking a fundamentally different approach to the way treatments for brain diseases are developed across neuropsychiatric disorders and neurodegenerative diseases. Our mission is to redefine neuroscience drug development by bringing forward the next generation of novel therapies that offer improved treatment outcomes and quality of life for patients suffering from brain diseases. The key components of our business strategy to deliver on our mission are to:

- ***Build a broad industry-leading pipeline of novel neuroscience therapeutics***. We have rapidly scaled our therapeutic pipeline that includes seven programs across late-stage clinical and preclinical development though business development efforts and our internal discovery capabilities. We expect to continue to progress the development of our pipeline with the planned initiation of multiple clinical trials across our programs over the next 12 months, which support numerous anticipated data readouts. Our most advanced program, navacaprant is a novel once-daily oral KOR antagonist that is being developed for the treatment of MDD, which we believe has the potential to provide significant advantages relative to the standard of care, if approved. In 2023, we initiated a pivotal Phase 3 program for navacaprant monotherapy in patients with moderate to severe MDD consisting of three efficacy studies: KOASTAL-1, KOASTAL-2 and KOASTAL-3. We anticipate releasing topline results for the KOASTAL-1 study in the second half of 2024, and topline results from the KOASTAL-2 and KOASTAL-3 studies in the first half of 2025. Additionally, we expect to initiate a Phase 1b study for NMRA-266, our M4 receptor positive allosteric modulator (PAM) that is being developed for the treatment of schizophrenia in 2024. Including navacaprant and NMRA-266, we are currently advancing a pipeline of seven clinical and preclinical therapeutic candidates for neuropsychiatric disorders and neurodegenerative diseases, each targeting a novel mechanism of action.
- ***Advance navacaprant towards commercialization***. Based on the results from the Phase 2 clinical trial, we believe navacaprant has the potential to provide significant advantages relative to the standard of care, if approved. In 2023, we initiated a pivotal Phase 3 program for navacaprant monotherapy in patients with moderate to severe MDD and anticipate releasing topline results for the KOASTAL-1 study in the second half of 2024. There are currently over 21 million adults in the United States diagnosed with MDD, 85% of whom either do not receive treatment with a pharmacological agent or fail to achieve remission with first-line SSRI/SNRI. In addition, given the novel mechanism of action in the well-characterized KOR/dynorphin system we intend to explore and evaluate the potential of navacaprant for the treatment of other neuropsychiatric populations beyond MDD, including bipolar depression, schizophrenia, post-traumatic stress disorder, generalized anxiety disorder, ADHD, and substance use disorder. We plan to begin these efforts with a clinical trial in bipolar depression that we expect to initiate in the first half of 2024, with topline results anticipated in 2025.
- ***Strategically allocate capital across our pipeline to achieve our mission***. Our therapeutic pipeline is supported by significant capital resources enabling us to build a broad range of novel targets to potentially bring forward the next generation of therapies. We will look to efficiently establish proof-of-concept for our programs by leveraging our precision neuroscience approach and clinical strategies which we believe will inform late-stage development and have the potential to ultimately increase the probability of success.
- ***Leverage our Precision Toolbox to enhance our development efforts***. To better understand the biological drivers of heterogeneous brain diseases and to identify targeted patient populations of interest, we have integrated a suite of proprietary data science and translational neuroscience tools to enhance our development efforts. We believe the insights into patient populations derived from our precision neuroscience tools provide us the potential to identify patient populations most responsive to our novel mechanisms of action to inform our preclinical and clinical development strategies. We have onboarded a vast library of approximately 1 petabyte of longitudinal, multimodal patient data consisting of genetic, imaging, EEG, digital and clinical data across a range of neuropsychiatric disorders and neurodegenerative diseases in order to identify targeted patient populations of interest. We believe that insights from our Precision Toolbox will enable us to execute potential strategies to gain confidence in a target or indication, help identify biomarkers that can be used to optimize clinical trial designs and expand indication expansion opportunities; ultimately, supporting our goal of increasing the likelihood of matching the right drug for the right patient.

- ***Capitalize upon our intellectual property (IP) position to realize the full value of our programs that target novel mechanisms of action***. Our strategy to focus on developing programs that target novel mechanisms of action is supported by long-dated composition of matter patents for each of our programs, a differentiating factor from other late-stage clinical programs. For example, our most advanced program candidate navacaprant has composition of matter protection through 2038 and we expect to have base patent term extension exclusivity until 2041. Additionally, we believe our intellectual property estate for each program provides sufficient IP runway to enable clinical trials in multiple indications. We believe our strategy of pursuing novel targeted mechanisms of action will enable us to maintain and pursue composition of matter protection providing us a strategic advantage to support the full value crystallization of our product candidates.

Our Product Candidates

We have rapidly scaled our pipeline through both internal discovery capabilities and business development activities. Our therapeutic pipeline comprises programs for neuropsychiatric disorders and neurodegenerative diseases, each targeting a novel mechanism of action. As shown in the table below, our current pipeline comprises seven programs, three of which are in clinical development and four of which are in preclinical development. We expect to continue to progress the development of our pipeline which supports numerous anticipated data readouts, including receipt of topline data from our KOASTAL-1 study for navacaprant expected in the second half of 2024 and Phase 1 SAD/MAD data for NMRA-266 in mid-2024.

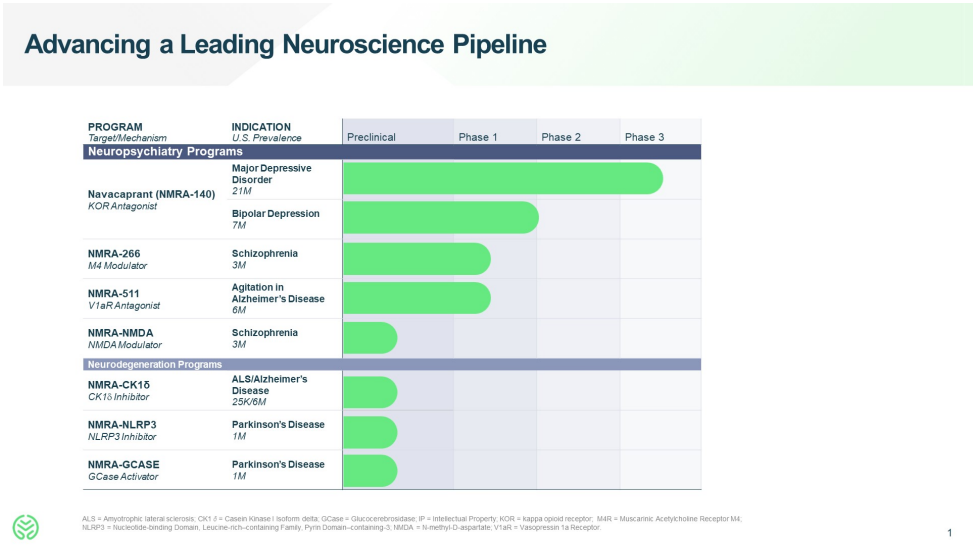


Figure 1: Neumora Pipeline

Navacaprant (NMRA-140) (KOR)

Navacaprant is a novel, oral once-daily, selective KOR antagonist in development for the monotherapy treatment of MDD. There are currently over 21 million adults in the United States diagnosed with MDD, 85% of whom either do not receive treatment with a pharmacological agent or fail to achieve remission with first-line SSRI/SNRI. We are developing navacaprant as a once-daily oral medication designed to modulate the dopamine and reward processing pathways that play an important role in the regulation of mood, cognition, reward and behavior. The KOR/dynorphin system is well- characterized, known to modulate depression, anhedonia and anxiety, and represents a novel approach to treating MDD and other major neuropsychiatric disorders. In 2023, following the completion of an End-of-Phase 2 meeting with the U.S. Food & Drug Administration (FDA), we initiated a pivotal Phase 3 program for navacaprant monotherapy in patients with moderate to severe MDD, consisting of three efficacy studies: KOASTAL-1, KOASTAL-2 and KOASTAL-3. We anticipate releasing topline results for the KOASTAL-1 study in the second half of 2024, and for the KOASTAL-2 and KOASTAL-3 studies in the first half of 2025. In addition, we intend to explore and evaluate the potential of navacaprant as treatment for other neuropsychiatric populations beyond MDD, including bipolar depression, schizophrenia, post-traumatic stress disorder, generalized anxiety disorder, ADHD, and substance use disorder. We plan to begin these efforts with a Phase 2 study in bipolar depression that we expect to initiate in the first half of 2024, with topline results anticipated in 2025.

Indication Overview

Major depressive disorder is one of the leading causes of disability, morbidity and mortality around the world with approximately 264 million people worldwide. MDD is characterized by symptoms such as prolonged sadness, anxiety, and suicidal thoughts. MDD is estimated to impact over 21 million adults in the United States with approximately 11 million receiving pharmacological treatment. Based on an assumed 5% market penetration for a new medicine, this would result in 550,000 patients treated. A three-fold increase in the prevalence of depressive symptoms has been estimated since the COVID-19 pandemic, exacerbating the significant burden of mental health across America.

Despite numerous approved treatments, there remains a significant unmet medical need in the treatment of MDD. Although MDD is hypothesized to involve multiple, diverse pathways as reflected in the variability of clinical presentation of major depressive episodes and response to treatment, most antidepressant medications act primarily through the monoamine pathway. Approved therapeutics include selective serotonin reuptake inhibitors (SSRIs), serotonin and norepinephrine reuptake inhibitors (SNRIs) and atypical antipsychotics. However, approximately 85% of MDD patients either do not receive treatment with a pharmacological agent or fail to achieve remission with first-line SSRI/SNRI. Further, patients treated for MDD often experience pronounced side effects, such as weight gain, sexual dysfunction, gastrointestinal issues and emotional blunting that contribute to treatment nonadherence. Side effects are a leading contributor to patients' unwillingness to take pharmacological treatment or treatment discontinuation.

In addition, current antidepressants do not adequately treat anhedonia, a core symptom of MDD. Defined in the DSM-5 as "markedly diminished interest or pleasure in all, or almost all, activities most of the day", anhedonia is a key feature of MDD and occurs in up to 70% of individuals with MDD. Anhedonia has been associated with greater severity of depressive symptoms, poor prognosis, as well as higher rates of suicidality. First-line MDD pharmacotherapies often fail to reduce anhedonia severity despite improvement or remission of other depressive symptoms and can induce or worsen anhedonia-like symptoms known as emotional blunting. Current antidepressants do not adequately address symptoms of anhedonia suggesting that their mechanisms of action do not effectively target the hedonic or reward processing pathways. Given the significant and increasing unmet medical need to effectively treat the core symptoms of MDD, a novel treatment for MDD that targets mood and hedonic pathways is warranted.

Target Rationale

Navacaprant is an investigational, small molecule antagonist of the KOR, which is a potentially novel approach to the treatment of MDD that has the potential to be the first new mechanism of action approved in decades. The KOR and endogenous agonist dynorphin, are expressed in brain regions that regulate the effects of stress on mood and cognition. The KOR/dynorphin system is an important mediator of stress-induced alterations in reward processing and a mood state known as dysphoria, which is a state of dissatisfaction, unease and unhappiness. Activation of KOR modulates neuronal circuits associated with many neuropsychiatric disorders, including depression, anhedonia, anxiety, schizophrenia, bipolar depression and obsessive-compulsive disorder.

Multiple lines of evidence establish the KOR system in mediating the effects of stress and reward in preclinical species and humans. In preclinical models of stress (such as forced swim and immobilization) or withdrawal from repeated exposure to drugs of abuse, stimulation of the dynorphin/KOR system can elicit anhedonia- and anxiety-like behaviors. In humans, KOR agonists have been reported to trigger symptoms of dysphoria, anxiety, and depression, while KOR antagonism has led to improvement of depressive symptoms. KOR antagonism blocks the biochemical and behavioral response to stress resulting in antidepressant- and anxiolytic-like behavioral effects.

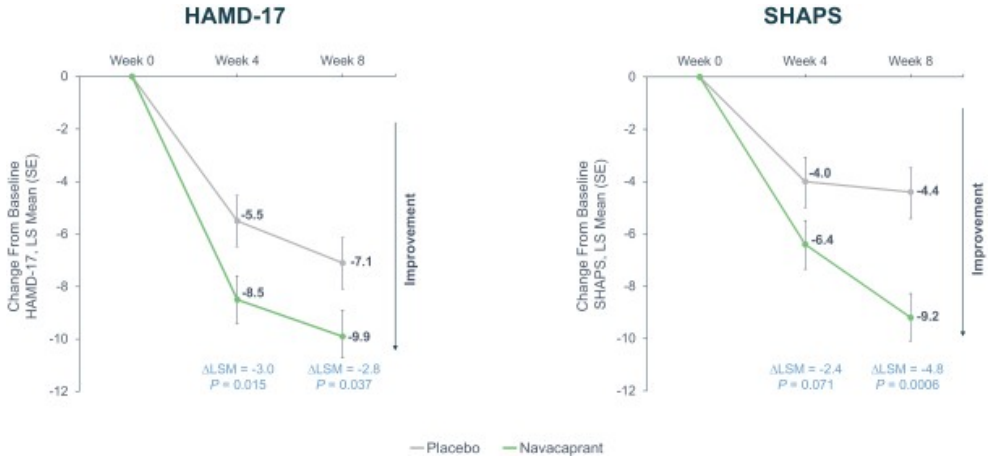
Navacaprant is a potent and selective antagonist for KOR and, in preclinical studies, has shown more than 300-fold selectivity over the Mu opioid receptor (MOR). Selectivity for KOR over MOR may be an important factor to avoid the potential negative side effects associated with MOR activity. Comparatively, other clinical-stage KOR antagonists, including Aticaprant and CVL-354, have approximately 30-fold selectivity over MOR. We believe the selectivity profile of navacaprant has the potential to enable optimal receptor occupancy that supports a beneficial efficacy and tolerability profile. None of our preclinical studies are powered for significance given the purpose of such studies.

Clinical Data

We completed a Phase 2 clinical trial evaluating navacaprant as a monotherapy treatment for patients with MDD. The Phase 2 clinical trial was initiated by BlackThorn Therapeutics prior to our acquisition of BlackThorn. The Phase 2 trial was a double-blind, placebo-controlled, randomized, multi-center trial of navacaprant monotherapy compared to placebo in MDD patients in the United States. Patients were randomized 1:1 to receive either an 80 mg dose of navacaprant or placebo once daily for eight weeks. The primary endpoint was a change from baseline in the HAMD-17 total score, a scale for measuring depressive symptom severity, of navacaprant compared to placebo at Week 8. Key secondary measures included change in anhedonia symptoms from baseline, as assessed by the Snaith–Hamilton Pleasure Scale (SHAPS) total score. Of the 204 patients randomized, 171 patients were included in the final efficacy population (patients with a baseline HAMD-17 total score that received at least one dose of study drug and had at least one post-baseline HAMD-17 assessment), and baseline demographics were balanced between the navacaprant and placebo arms.

The original trial design, when initiated by BlackThorn, specified enrolling solely mild to moderate MDD patients (baseline HAMD-17 total score ranging from 14-22). Following our acquisition of BlackThorn, we amended the trial inclusion criteria to include patients with moderate to severe MDD (baseline HAMD-17 total score ≥ 22), which is the patient population we intend to evaluate in our pivotal Phase 3 program and more typically studied in MDD clinical trials. We also added a prespecified analysis to the Phase 2 statistical analysis plan focused on the moderate to severe MDD population.

The final efficacy population for the pre-specified analysis of moderate to severe MDD (baseline HAMD-17 total score ≥ 22) included 100 adult subjects. In this moderate to severe MDD patient population, once daily dosing with 80 mg of navacaprant resulted in statistically significant (meaning that the results of the study are unlikely to have occurred by chance) treatment differences compared to placebo in depression, as measured by the HAMD-17 total score, and anhedonia, as measured by the SHAPS, each as demonstrated below.



Note: Graphs depict prespecified statistical sensitivity analyses for moderate to severe patients (n=100; baseline HAMD-17 ≥ 22)

Figure 2: Navacaprant: Established Proof-of-Concept for the Treatment of Depression and Anhedonia in Patients with Moderate to Severe MDD

In addition, navacaprant demonstrated statistically significant treatment differences compared to placebo on a range of other key secondary and exploratory measures of depression (HAMD-17 response and remission rates, HAMD-6, CGI-I and CGI-S), anxiety (HAM-A) and function (SDS) in the moderate to severe MDD population, each as demonstrated below.

	Week 4 Difference (p-value)	Week 8 Difference (p-value)
Depressive Symptom Improvement		
HAMD-17 Total Score Change from Baseline	-3.0 (0.015)	-2.8 (0.037)
HAMD-17 Response Rate % ≥50% Reduction in HAMD-17 from Baseline	21.4% (0.010)	25.9% (0.007)
Remission HAMD-17 Score ≤7	14.9% (0.014)	20.3% (0.005)
HAMD-6 Score (Core Symptoms) Change from Baseline in HAMD-6	-2.4 (<0.001)	-1.9 (0.013)
CGI-I % of Patients with Very Much / Much Improvement	12.4% (0.178)	19.0% (0.056)
CGI-S Change from Baseline	NA	-0.5 (0.041)
Anhedonia Symptom Improvement		
SHAPS Total Score Change from Baseline	-2.4 (0.071)	-4.8 (<0.001)
Anxiety Symptom Improvement		
HAM-A Total Score Change from Baseline	-2.4 (0.035)	-1.6 (0.197)
Functional Improvement		
SDS Total Score Change from Baseline	-2.5 (0.146)	-4.0 (0.013)

Note: Prespecified statistical sensitivity analysis for moderate to severe patients (HAMD-17 22)

Figure 3: Demonstrated Improvements Across a Range of Secondary and Exploratory Endpoints in Patients with Moderate to Severe MDD

Navacaprant also demonstrated positive results across the total population (n = 171), which included mildly depressed patients with baseline HAMD-17 scores as low as 14. Navacaprant demonstrated a statistically significant improvement in depression at Week 4 (HAMD-17 LSMD; -2.7, p = 0.003) and continued to demonstrate numerical improvements but did not achieve statistical significance compared to placebo at Week 8 (HAMD-17 LSMD; -1.7, p = 0.121), which was the primary endpoint of the original study designed by BlackThorn. Additionally, navacaprant demonstrated statistically significant improvements in anhedonia as assessed by the SHAPS at Week 4 (SHAPS LSMD; -2.8, p = 0.004) and Week 8 (SHAPS LSMD; -3.4, p = 0.002). These results were consistent with expectations for a population including mild-to-severe patients and supports the trial amendments we made to focus development on the moderate to severe MDD population.

Navacaprant was well tolerated with no severe adverse events. The overall discontinuation rates were higher on placebo compared to navacaprant (37% for placebo and 29% for navacaprant), and discontinuation rates related to treatment emergent adverse events (TEAEs) were higher on placebo compared to navacaprant (12% for placebo and 1% for navacaprant). The incidence rate of TEAEs was 35.3% for the navacaprant group and 44.1% for the placebo group. There were no TEAEs for navacaprant with greater than 5% incidence, which was consistent with placebo. The majority of the TEAEs were mild to moderate, with no severe TEAEs reported in the navacaprant group, and 4.9% severe TEAEs reported in the placebo group. Navacaprant was not associated with weight gain or sexual dysfunction. No evidence of suicidal behavior was identified as assessed by the Columbia Suicide Severity Rating Scale. We

believe the tolerability profile of navacaprant observed to date will be viewed favorably by patients and physicians relative to other approved agents in use today.

TEAEs Incidence (>2% in either treatment group)

	Placebo n=102	Navacaprant n=102
Preferred Terms	**n (%)**	**n (%)**
Headache	5 (4.9)	5 (4.9)
COVID-19	3 (2.9)	4 (3.9)
Nausea	1 (1.0)	5 (4.9)
Diarrhea	3 (2.9)	2 (2.0)
Upper respiratory tract infection	1 (1.0)	3 (2.9)

Figure 4: Navacaprant Was Well Tolerated with No Serious Adverse Events Observed in the Phase 2 Clinical Trial

Development Plan

The pivotal Phase 3 program for navacaprant was initiated in 2023 and consists of three randomized, placebo-controlled trials. KOASTAL-1 (Study 301) will be conducted solely in the United States. KOASTAL-2 (Study 302) and KOASTAL-3 (Study 303) will be identical in design to KOASTAL-1, but will be conducted globally. KOASTAL-LT (Study 501) will be a long-term safety extension study. All studies in the KOASTAL program are underway. All three efficacy studies are designed to demonstrate that once-daily 80 mg navacaprant monotherapy improves symptoms of depression in patients with moderate to severe MDD following 6 weeks of double-blind treatment. If successful, these studies are expected to support the submission of a New Drug Application (NDA) in 2025.

Additional Opportunities for Navacaprant

In addition, we intend to explore and evaluate the potential of navacaprant as treatment for other neuropsychiatric populations beyond MDD, such as bipolar depression (affecting approximately 7 million adults in the United States), SCZ (affecting approximately 3 million adults in the United States), post-traumatic stress disorder (affecting approximately 12 million adults in the United States), generalized anxiety disorder (affecting approximately 6.8 million adults in the United States), ADHD (affecting approximately 10 million adults in the United States) and substance use disorder (affecting approximately 20 million adults in the United States).

Our initial efforts beyond MDD will focus on bipolar disorder where we believe there is a strong rationale for navacaprant having the potential to offer a safe and effective alternative to the current standard of care for treating bipolar depression.

Bipolar disorder may cause extreme shifts in a person's mood, energy and activity levels. Bipolar and related disorders include bipolar I, bipolar II and cyclothymic disorders. Patients with bipolar I disorder experience episodes of both mania and depression, whereas those with bipolar II disorder experience depressive and hypomanic episodes, but never have a full manic episode. In cyclothymic disorder or cyclothymia, patients experience chronically unstable mood states of hypomania and mild depression. Patients with bipolar disorder are typically treated with mood stabilizers, antidepressants, atypical antipsychotics and anticonvulsants, but despite available medications, patients generally do not respond to treatment. These patients often require multiple lines of therapy, which is associated with significant negative outcomes. Patients with bipolar II disorder are among those with the highest unmet need, due to the atypical symptomology and resistance to current treatment options they often experience.

KOR antagonists like navacaprant have been shown to improve symptoms of depression, including anhedonia, in multiple studies, including the National Institute of Mental Health (NIMH)'s FAST-MAS study, our Phase 2 clinical trial with navacaprant in MDD and additional preclinical studies. In addition to being a cardinal feature in MDD, anhedonia is also a highly prevalent and a clinically relevant symptom in bipolar depression, and there is a growing body of research in the pathophysiologic underpinnings of anhedonia in bipolar depression. Given that navacaprant studies have demonstrated meaningful improvements in anhedonia symptoms in patients with moderate to severe MDD, we believe it may also be effective in treating anhedonia related to bipolar depression.

Given the unmet medical need and rationale for the potential benefit of KOR antagonism in bipolar depression, we plan to initiate a Phase 2 study evaluating the safety and efficacy of navacaprant in patients with bipolar depression in the first half of 2024, with topline results anticipated in 2025. We believe that this clinical trial will provide further data that will inform potential further development of navacaprant in bipolar depression.

Intellectual Property

We expect patent exclusivity for navacaprant to/until 2041, based on composition of matter protection and estimated patent term extension.

NMRA-266

NMRA-266 is a positive allosteric modulator program of the M4 muscarinic receptor (M4R) for the treatment of schizophrenia. NMRA-266 is designed to be selective for the M4 receptor subtype of the muscarinic receptor family. In 2023 we initiated a Phase 1 single ascending dose / multiple ascending dose (SAD/MAD) study in healthy adult participants. We expect data from the SAD/MAD study to be available in mid-2024 and we expect to initiate a Phase 1b study with NMRA-266 in adults with SCZ in the second half of 2024. Muscarinic receptor-targeting compounds have shown robust activity in clinical trials, demonstrating potential as an approach to treating schizophrenia, with the potential to treat other neuropsychiatric disorders such as dementia-related psychosis and cognitive disorders, where innovation has been stagnant for decades. We believe selective M4R-positive allosteric modulators have the potential to deliver antipsychotic efficacy, while minimizing the side effects associated with current antipsychotics and other non-selective muscarinic agonists. We exclusively licensed certain intellectual property rights related to NMRA-266 from The Warren Center for Neuroscience Drug Discovery at Vanderbilt University.

Target Rationale

NMRA-266 is an investigational positive allosteric modulator of the M4 muscarinic receptor. While current antipsychotics approved for schizophrenia work primarily by antagonizing D2 dopamine receptors, growing evidence supports the approach of targeting the M4 muscarinic receptor to produce antipsychotic effects. M4 muscarinic receptor-targeting compounds have shown robust activity in clinical trials, demonstrating potential as an approach to treating schizophrenia in multiple, placebo-controlled clinical trials.

In a Phase 2 randomized, double-blind, placebo-controlled clinical trial (Emergent-1) of 182 schizophrenia patients conducted by Karuna Therapeutics, Inc., an M1/M4-preferring muscarinic agonist combined with a peripheral muscarinic antagonist, KarXT (xanomeline-trospium), demonstrated a statistically significant improvement in the total Positive and Negative Syndrome Scale (PANSS) score, the most widely used measure of symptom severity in schizophrenia. These results were then confirmed by subsequent Phase 3 trials with statistically significant changes in PANSS score seen in both Emergent-2 and Emergent-3 trials. These results were further supported by a positive Phase 1b randomized, double-blind, placebo- controlled clinical trial conducted by Cerevel Therapeutics, Inc. of emraclidine (CVL-231), a M4 receptor positive allosteric modulator demonstrating robust improvements in PANSS scores. These clinical data in schizophrenia patients are further supported by a robust body of preclinical and clinical evidence that shows that the muscarinic acetylcholine receptor system plays an important role in regulating behaviors related to psychoses, cognition, movement, learning and memory, suggesting its importance as a potential drug target for the treatment of several brain disorders. These studies also suggest compounds that elevate M4 receptor activity have the potential to treat other neuropsychiatric disorders, in addition to schizophrenia.

Indication Overview

Schizophrenia is a debilitating neuropsychiatric disorder characterized by positive symptoms (such as delusions and hallucinations), negative symptoms (such as diminished emotional expression) and cognitive symptoms (such as deficits in types of memory). The disease is also associated with a 10-to-25-year reduction in life expectancy overall. It is estimated that approximately three million people in the United States have schizophrenia.

No therapies with a novel mechanism of action have been recently approved for schizophrenia, with all currently approved antipsychotics based on mechanisms originally based on chlorpromazine, which was developed in the 1950s. Currently approved therapies focus on treating the positive symptoms of schizophrenia and have little impact on the negative or cognitive symptoms. They also have potentially serious side effects, including movement and metabolic effects, which historically have resulted in poor compliance.

Preclinical Data

We have identified multiple series of M4R-positive allosteric modulators that are designed to be potent, selective and orally bioavailable. The lead molecule, NMRA-266, has demonstrated robust activity in preclinical efficacy models, as well as high selectivity for the M4R subtype, the potential for an improved safety profile over current antipsychotics and non-selective agonist approaches, and an oral once-daily dosing profile. Based on preclinical data we have generated, we believe that the profile of NMRA-266 is comparable to the profile of other M4 PAMs. For example, the potency (M4 EC50 (cAMP)) of NMRA-266 was demonstrated to be 32nM and the brain:plasma ratio for NMRA-266 was demonstrated to be 1:1. In addition, the selectivity at other muscarinic receptor subtypes (EC50) for NMRA-266 was demonstrated to be M1,3,5 > 10 μM, M2 6.8 μM. These competitors have a number of product candidates in development, such as KarXT (xanomeline-trospium), an M1/M4-preferring muscarinic agonist combined with a peripheral muscarinic antagonist,

being developed by Karuna Therapeutics, and emraclidine (CVL-231), a M4 receptor positive allosteric modulator, being developed by Cerevel Therapeutics. KarXT's potency was demonstrated to be 52nM and the brain:plasma ratio for KarXT was demonstrated to be 1:10. The human half-life for KarXT was demonstrated to be 4 to 5 hours. In addition, the selectivity at other muscarinic receptor subtypes (EC50) for KarXT was demonstrated to be M1 0.3 nM, M2 92.5 and M3 5nM. The bioavailability of KarXT was demonstrated to be <1% due to extensive first pass metabolism and the molecular weight was demonstrated to be 281.4 (xanomeline). Emraclidine's potency was demonstrated to be 12 nM and the brain:plasma ratio for emraclidine was demonstrated to be 1:1. The human half-life for emraclidine was demonstrated to be 9 to 12 hours. In addition, the selectivity at other muscarinic receptor subtypes (EC50) for emraclidine was demonstrated to be M1 > 10 μM, and M2 5.8 μM. The bioavailability of emraclidine is unknown and the molecular weight was demonstrated to be 390.4.

Development Plan

In 2023 we initiated a Phase 1 single ascending dose/multiple ascending dose (SAD/MAD) study in healthy adult participants. We expect data from the SAD/MAD study to be available in mid-2024 and to initiate a Phase 1b study with NMRA-266 in adults with SCZ in the second half of 2024.

NMRA-511

NMRA-511 is an investigational antagonist of the vasopressin 1a receptor (V1aR). Vasopressin plays a role in the regulation of aggression, affiliation, stress and anxiety response. Based on our encouraging preclinical findings in non-human primates, as well as preclinical and clinical results from third parties, we believe V1aR has the potential to be a promising novel target for multiple neuropsychiatric disorders and neurodegenerative diseases across the spectrum of anxiety, aggression and stress. The Phase 1 multiple ascending dose (MAD) clinical trial with NMRA-511 is ongoing, and we plan to advance the program into a clinical trial in patients with agitation associated with dementia due to Alzheimer's disease (AD) in the first half of 2024. We are currently conducting a Phase 1 MAD clinical trial of NMRA-511 and plan to advance the program into a clinical trial in patients with agitation associated with dementia due to Alzheimer's disease in the first half of 2024.

Target Rationale

NMRA-511 is an investigational small molecule antagonist of V1aR, which we believe represents a novel approach to the treatment of neuropsychiatric disorders. V1aR is a receptor for arginine vasopressin (AVP), a neuropeptide implicated in a range of physiological processes, including mood and stress.

Preclinical studies support the involvement of the vasopressin system in mediating behaviors across multiple relevant symptoms, including physiological stress responses, aggression, avoidance, fear and anxiety. In rodents, unpleasant stimuli increased vasopressin levels in brain regions implicated in anxiety pathophysiology, as demonstrated through functional neuroimaging and increased V1a receptor binding in hypothalamic regions important in mediating stress responses. Direct administration of vasopressin into the brain of rodents can increase fear and anxiety-like behavior, while systemic administration of V1a receptor antagonists and deletion of the V1aR gene resulted in decreased anxiety-like behaviors. Moreover, evidence that the V1a receptor is important in mediating aggression has been demonstrated using the selective V1a receptor antagonist, SRX251, which reduced aggressive behaviors and suppressed activity in key brain regions involved in aggression. Recently, a small study with SRX246, a V1a receptor antagonist, in human subjects demonstrated reduced anxiety induced by unpredictable threats.

Indication Overview

Alzheimer's disease is the most common cause of dementia, resulting in changes in memory, thinking and behavior. An estimated 6.7 million people in the United States currently live with Alzheimer's disease, and as the population ages, that number is expected to grow to more than 12 million by 2050. Behavioral symptoms including agitation and anxiety represent one of the most challenging aspects of managing Alzheimer's dementia. Researchers estimate that approximately 76% of patients with Alzheimer's dementia experience agitation, which results in significant disability, contributes to institutionalization, and diminishes quality of life for both patients and their caregivers. Despite the substantial unmet medical need associated with agitation in Alzheimer's disease, only one medicine (an atypical antipsychotic) has been approved as a treatment in the United States. However, this medication carries a black box warning for increased mortality in elderly patients. As a result of this black box warning, we believe that an unmet medical need for a safe treatment to address agitation in Alzheimer's disease remains.

Preclinical Data

NMRA-511 is a potent and selective antagonist for V1aR. In preclinical studies, NMRA-511 exhibited greater than 3,000-fold selectivity over the V1b and V2 receptors and approximately 300-fold selectivity over the oxytocin receptor. We conducted preclinical studies in marmosets using an animal model of anxiety/agitation known as the 'human threat test'. In these studies, NMRA-511 reduced measures of anxiety/agitation. In parallel studies in marmosets, brain activity was also measured by means of quantitative electroencephalography (EEG), which revealed changes at different spectral band frequencies at the dose level associated with behavioral improvements, which we believe reflects a measure of pharmacodynamics activity. We believe these preclinical data suggest that NMRA-511 has the potential to address anxiety and agitation disorders.

We also conducted a Phase 1 SAD/MAD clinical trial with 55 healthy volunteers at doses up to 10 mg. In the SAD portion of the trial, 12 subjects received a single dose of NMRA-511 and four subjects received placebo. In the MAD portion of the trial, 18 subjects received multiple doses of NMRA-511 and six subjects received the same number of doses of placebo. Another cohort of 12 subjects received doses of NMRA-511 under one of two treatment sequences of being fed versus fasting to assess the effect of food on the rate and extent of absorption of NMRA-511. NMRA-511 was well tolerated in the Phase 1 SAD/MAD clinical trial. This Phase 1 clinical trial was not powered for significance given the purpose of the clinical trial, which was to help determine the dose of the study drug that can be safely administered to human subjects. Given that the primary purpose of the study was to assess safety and tolerability, the study did not contain formal efficacy endpoints. However, safety and pharmacokinetic endpoints, and exploratory measures of cardiovascular and qEEG parameters were assessed.

The analysis of qEEG collected in the frontal region following oral administration of NMRA-511 to marmosets (10 mg/kg; n=6) and healthy human subjects (15 mg; placebo n=11; NMRA-511 n=6) increased relative power in the theta and alpha bands under physiological/resting state conditions. We believe that these data demonstrated that the pharmacodynamic effects of NMRA-511 seen in marmosets may be translated to humans.

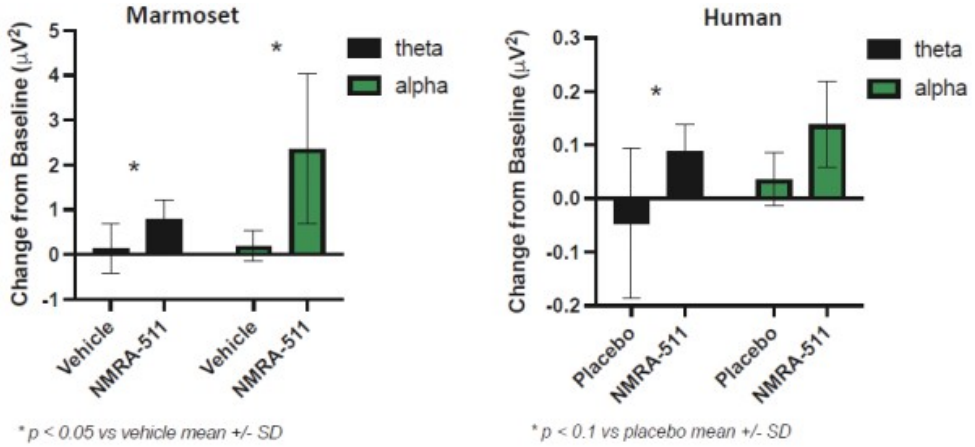


Figure 5: The Pharmacodynamic Activity of NMRA-511 Seen in Marmosets May Be Translated to Humans

Based on preclinical data we have generated, we believe that the profile of NMRA-511 is favorable. For example, the potency (functional IC50) of NMRA-511 was demonstrated to be 0.9nM, with high selectivity over V1b, V2 and oxytocin receptors, as noted above. Additionally, the projected human receptor occupancy for NMRA-511 is greater than 90% for both the 10 mg and 20 mg doses.

Development Plan

The Phase 1 multiple ascending dose (MAD) clinical trial with NMRA-511 is ongoing, and we plan to advance the program into a clinical trial in patients with agitation associated with dementia due to Alzheimer's disease (AD) in the first half of 2024.

NMRA-NMDA

NMRA-NMDA is an NMDA positive allosteric modulator program that we intend to develop for the treatment of schizophrenia. Recent breakthroughs in third-party psychiatric genetic studies have provided genetic evidence in support of the role of NMDA in schizophrenia. Furthermore, human studies suggest NMDA receptor antagonists, such as ketamine, lead to a schizophrenia-like syndrome, which provides compelling evidence for this target. Our NMRA-NMDA program is in the preclinical phase of development.

Target Rationale

NMRA-NMDA is an investigational allosteric modulator of NMDA-type glutamate receptors. Glutamate is the major excitatory neurotransmitter in the brain, and dysregulation of glutamate levels NMDA receptor function and downstream pathways has long been hypothesized to be key molecular drivers of schizophrenia. Recently large studies of schizophrenia patients which have looked to identify the genetic basis of schizophrenia have identified the GRIN2A gene, which produces the GluN2A subunit of the NMDA receptor, as a critical genetic risk factor for the disease. Human pharmacology experiments have indicated that decreases in NMDA receptor activity can lead to schizophrenia-like symptoms in healthy volunteers. These studies together suggest compounds which elevate NMDA receptor activity have the potential to treat the disease.

Indication Overview

Similar to NMRA-266, we believe NMRA-NMDA could have potential in patients with SCZ.

Preclinical Data

We have identified a series of investigational NMDA positive allosteric modulators that are potent and orally bioavailable. Our NMRA-NMDA program was internally discovered and we have focused on proprietary chemistry that targets a distinct binding site on the target compared to other approaches. The lead molecules have been identified through experiments in cell-based assays to evaluate potency and selectivity and also characterize their mechanism of action. These molecules have also demonstrated target engagement and pharmacodynamic activity in animal models relevant for the mechanism and disease indication.

Development Plan

Our NMRA-NMDA program is in the preclinical stage of development.

NMRA-CK1δ

NMRA-CK1δ is a CK1d inhibitor program that we intend to develop for ALS. CK1δ is a kinase that has been identified as a proximal upstream regulator of TDP-43 phosphorylation, a key driver of TDP-43-driven pathology in approximately 95% of sporadic ALS cases. There is also genetic evidence supporting the role of TDP-43 in ALS. Our NMRA-CK1δ program is in preclinical development. We exclusively licensed certain intellectual property rights related to NMRA-CK1δ from Amgen.

Target Rationale

CK1δ is a key proximal kinase phosphorylating TDP-43, a protein implicated in the pathology of both sporadic and familial ALS and certain types of frontotemporal dementia (FTD). Protein aggregates containing phosphorylated TDP-43 are present in degenerating motor neurons of ALS patients. It is hypothesized that reduction of TDP-43 phosphorylation with a CK1δ inhibitor will reduce TDP-43 driven pathology and slow disease progression. Published data have demonstrated that CK1δ inhibitors reverse aberrant TDP-43 related phenotypes in both *in vitro* and *in vivo* studies.

Indication Overview

ALS is a rapidly progressing neurodegenerative disease that affects motor neurons in the brain and spinal cord. As motor neurons die, the brain loses the ability to initiate and control muscle movement, and patients may lose the ability to speak, eat, move and breathe. Approximately 5,000 people in the United States are diagnosed with ALS each year, and approximately 16,000 patients live with ALS in the United States at a given time. ALS usually affects patients between the ages of 40 and 70.

Existing therapeutics have modest effects on survival and physical functioning with no effect on mortality and patients have an average life expectancy of two to five years from diagnosis, emphasizing the high unmet medical need.

Preclinical Data

NMRA-CK1δ inhibitors have nanomolar potency, are selective over a number of other kinases and exhibit cell-based activity. Compounds have properties consistent with favorable CNS penetration and we are conducting experiments in both *in vitro* cell models and *in vivo* models relevant for ALS. In addition, we are conducting experiments to analyze ALS multi-modal patient data using our proprietary toolbox of data science algorithms to determine whether there are sub-groups of ALS patients which could be more responsive to NMRA-CK1δ.

We have onboarded data from the Answer ALS dataset to our Precision Toolbox, which we are analyzing as we advance our NMRA-CK1δ program. The preliminary work with this dataset shows that an unsupervised drug signature independent clustering approach reveals patient clusters that are overlapping in terms of the likelihood they would respond to a CK1δ compound. However, when applying supervised clustering methods that incorporate the NMRA-CK1δ drug signature, enhanced precision in identifying distinct clusters that may be more responsive to a CK1δ compound within the ALS population is demonstrated. We believe this work may enable the generation of hypotheses around "responder/non-responder" populations that we can consider to be included in future clinical studies.

Development Plan

Our NMRA-CK1δ program is in the preclinical stage of development.

NMRA-NRLP3

NMRA-NLRP3 is an inhibitor program focused on targeting the NLRP3 inflammasome for the treatment of certain neurodegenerative conditions. The inflammasome is a critical part of the innate immune system that responds to pathogens and cellular damage and is implicated in brain disorders, such as PD, as well as immune disorders. The NLRP3 inflammasome can be activated in brain microglia, a type of cell in the brain, and other cell types by a range of proteins linked to neurodegeneration, including alpha-synuclein (a neuronal protein that regulates synaptic vesicle trafficking), which suggests the inflammasome may have a mechanistic role in PD. Our NMRA-NLRP3 program is in the preclinical phase of development.

Target Rationale

The NLRP3 inflammasome is a central component of the innate immune system and is chronically activated in neurodegenerative and inflammatory diseases. It is essential for triggering innate immunity and protecting the host from a variety of pathogens and cellular stressors. Pathological proteins associated with PD, ALS, and AD have also been shown to activate the NLRP3 inflammasome, including (i) alpha-synuclein, which is a critical driver of PD an other so-called synucleinopathies, (ii) TDP-43, which as stated above is linked to ALS, FTD and other TDP-43 opathies, (iii) beta-amyloid and tau, proteins which are most closely linked to AD. A growing body of work in PD model systems has shown that inhibition of the NLRP3 inflammasome can impact various disease phenotypes in a therapeutically relevant manner.

Indication Overview

PD is a neurodegenerative disorder resulting in progressive and debilitating motor symptoms, such as hypokinesia, or decreased body movement, and bradykinesia, or rigidity, tremor, and postural instability. PD patients lose dopamine-producing neurons in the substantia nigra, the region of the brain responsible for motor control. Approximately one million people in the United States have PD. Current therapeutics for PD focus on increasing levels of dopamine to manage disease symptoms. For example, levodopa/l-dopa is converted into dopamine in the brain while mono-amine oxidase-B and catechol-O-methyl transferase inhibitors reduce the breakdown of dopamine. Each therapeutic class has meaningful limitations in efficacy and side-effects.

Preclinical Data

We have identified multiple series of NLRP3 inhibitors that showed potency and selectivity in a range of cellular assays in different immortalized cell lines and primary immune cells including microglia. These molecules have also demonstrated target engagement and pharmacodynamic activity in relevant animal models for the proposed mechanism.

Development Plan

Our NMRA-NLRP3 program is in the preclinical phase of development. In addition, we are conducting experiments to analyze PD multi-modal patient data using our proprietary toolbox of data science algorithms to determine whether there are sub-groups of PD patients which could be more responsive to NMRA-NLRP3.

NMRA-GCase

NMRA-GCase is an activator program focused on elevating the activity of the enzyme glucocerebrosidase (GCase) that we are developing for the treatment of PD. Mutations in the GBA1 gene, which codes for the enzyme GCase, are the single largest genetic risk factor for PD. GCase deficiencies lead to storage disorders of the lysosome, which plays an important role in maintaining cellular balance, and a group of patients with PD have lysosomal dysfunction. Our NMRA-GCase program is in the preclinical phase of development. We exclusively licensed certain intellectual property rights related to NMRA-GCase from Amgen.

Target Rationale

The enzyme GCase belongs to a family of proteins known as "lysosomal glycoside hydrolases" that are located within the lysosomal compartments of cells and cause the cleavage of complex molecules containing sugar. The GBA gene encodes GCase and homozygous or compound heterozygous mutation carriers in GBA are associated with Gaucher's disease, a lysosomal storage disorder. Mutations in the GBA gene are associated with PD (approximately 10% of PD patients). Functional GCase is crucial for the recycling and disposal of proteins and lipids in the lysosome. Numerous scientific studies have demonstrated that GCase mutations trigger lysosomal dysfunction, cell toxicity, inflammation and the accumulation of alpha-synuclein (a hallmark of PD), which is toxic to neurons.

Indication Overview

PD is a neurodegenerative disorder resulting in progressive and debilitating motor symptoms, such as hypokinesia, or decreased body movement, and bradykinesia, or rigidity, tremor, and postural instability. PD patients lose dopamine-producing neurons in the substantia nigra, the region of the brain responsible for motor control. Approximately one million people in the United States have PD.

Preclinical Data

We have identified multiple small molecule series through a high-throughput screen as GCase activators. Our series activates both wild type and mutant forms of the enzyme with similar potency, and we have biophysical data that they bind directly to the target, not acting in an indirect fashion.

Development Plan

Our NMRA-GCase program is in the preclinical phase of development.

Intellectual Property

Our success depends in large part upon our ability to obtain and maintain proprietary protection for our products and technologies and to operate without infringing the proprietary rights of others. Our policy is to protect our proprietary position by, among other methods, filing U.S. and foreign patent applications that relate to our proprietary technologies, inventions and improvements that are important to the development and implementation of our business. We also rely on trademarks, trade secrets, know-how and continuing technological innovation.

Our patent portfolio includes three primary types of patents and patent applications: (i) molecule patents that cover composition of matter and methods of treatment; (ii) patents directed to our precision neuroscience approach that covers key artificial intelligence (AI) algorithms and machine learning (ML)-based processes for identifying and monitoring targeted patient populations; and (iii) biomarker patents that cover methods of diagnosing and treating patients, with our molecules. As of December 31, 2023, we own, co-own, or have an exclusive license to over 310 patents and pending applications in the United States and foreign jurisdictions. These include 36 issued U.S. patents and 120 issued foreign patents.

The term of any individual issued patent depends upon the legal term of the patent in the country in which it is obtained. In most countries that we file, the patent term is 20 years from the earliest date of filing a nonprovisional patent application related to the issued patent. However, the actual protection afforded by an issued 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. A U.S. patent also may be accorded patent term adjustment, or PTA, under certain circumstances to compensate for delays in obtaining the patent from the USPTO. In some instances, such a PTA may result in a U.S. patent term extending beyond 20 years from the earliest date of filing a non-provisional patent application related to the U.S. patent. In addition, in the United States, the term of a U.S. patent that covers an FDA-approved drug may also be eligible for patent term extension, which permits patent term restoration as compensation for the patent term lost during the FDA regulatory review process.

Molecule Patent Portfolio

As of December 31, 2023, our molecule patents include over 250 owned and exclusively licensed patents and patent applications, of which 23 are issued U.S. patents and 115 are issued foreign patents. A further breakdown of our material molecule patents and applications as of December 31, 2023 is below:

- **Navacaprant (NMRA-140):** We own, co-own or exclusively license two patent families that include four issued U.S. patents, and additional U.S. and foreign patents and pending applications related to navacaprant. These patents and applications cover composition of matter. We have an exclusive license from The Scripps Research Institute (TSRI) to one of the patent families, which includes two issued U.S. patents that are expected to expire in 2033 excluding any patent term adjustment or patent term extension. We co-own the other patent family with TSRI. This family has two patents granted in the United States, and additional patents granted in Europe, Hong Kong, Australia, Mexico, Singapore, India, Israel, Japan, Eurasia and South Africa. Additional patent applications in this family are pending in China, Canada, Brazil and Korea. The last issued patent from these families licensed to us from TSRI is expected to expire in 2038 excluding any patent term adjustment or patent term extension. We anticipate that we will apply for any available patent term extension to the family with base expiration in 2038.
- **NMRA-511:** We own one issued U.S. patent and additional U.S. and foreign patents and pending applications related to NMRA-511. These patents and applications cover composition of matter. This family has one patent granted in the United States, and additional patents granted in Singapore, Europe, Japan, Mexico, Australia, Israel, and China. Additional patent applications in this family are pending in Hong Kong, Canada, India, Korea, New Zealand and South Africa. The issued U.S. patents and future patents that issue are expected to expire in 2038 excluding any patent term adjustment or patent term extension.
- **NMRA-266:** We exclusively license several patent families that include 15 issued U.S. patents and additional U.S. and foreign patents and pending applications related to our M4R program from Vanderbilt. These patents and applications cover composition of matter. The last patent expiration date for the issued patents and patents expected to issue that are exclusively licensed from Vanderbilt that cover NMRA-266 is 2041 excluding any patent term adjustment or patent term extension.

Precision Toolbox Patent Portfolio

Our Precision Toolbox is covered by process patents and patent applications relating to multimodal methods of identifying and monitoring targeted patient populations. The process patents and patent applications are directed to (i) the use of tools to detect and capture data from patients using specific modalities, unimodal processing and/or diagnostic techniques for specific modality types; and (ii) multimodal machine learning and AI-based processes for combining different types of data to identify and monitor targeted patient populations. Our Precision Toolbox patent portfolio includes several patent families, comprising seven issued U.S. patents, additional pending U.S. and foreign patent applications. The issued U.S. and foreign patent and future patents that issue from these families are expected to expire between 2038 and 2044, excluding any patent term adjustment.

The Precision Toolbox patent portfolio also includes coverage for multimodal processes that span various modalities including genetic, transcriptomic, proteomic, in vitro cell, MRI, EEG, voice, facial, behavioral, clinical and others.

Biomarker Patent Portfolio

Our Precision Toolbox is also covered by biomarker patents and applications directed to unimodal and multimodal biomarkers that identify patients that respond to specific drugs. These biomarker patents are process patents for identifying and diagnosing patients with selected biomarkers, and methods of treating patients with those biomarkers with neural drugs. We own six patent applications relating to biomarkers. Generally speaking, those selected biomarkers include genetic, proteomic, task-based, clinical assessment-based, and others.

Trade Secrets

In addition to our reliance on patent protection for our inventions, product candidates and precision neuroscience approach, we also rely on trade secrets, know-how, confidentiality agreements and continuing technological innovation to develop and maintain our competitive position. For example, some elements of manufacturing processes, proprietary assays, analytics techniques and processes, knowledge gained through clinical experience such as approaches to dosing and administration and management of patients, as well as related processes and software, are based on unpatented trade secrets and know-how that are not publicly disclosed. It is our policy to require our employees, consultants, outside scientific collaborators, sponsored researchers and other advisors to execute confidentiality agreements upon the commencement of employment or consulting relationships with us. These agreements provide that all confidential information concerning our business or financial affairs developed or made known to the individual or entity during the course of the party's relationship with us is to be kept confidential and not disclosed to third parties except in specific circumstances. In the case of employees, the agreements provide that all inventions conceived of by the individual during the course of employment, and which relate

to or are reasonably capable of being used in our current or planned business or research and development are our exclusive property. In addition, we take other appropriate precautions, such as physical and technological security measures, to guard against misappropriation of our proprietary technologies by third parties.

Trademarks

We also protect our brands through the procurement of trademark rights and have a portfolio of registered and pending trademark applications in the United States and abroad. As of December 31, 2023, the portfolio includes trademark applications for the mark NEUMORA, that are pending in the United States, Canada, China, Mexico, South Korea and International Applications filed under the Madrid Protocol. Trademark applications for NEUMORA have been registered in Australia, Europe, India, Israel, Japan and the United Kingdom.

In-Licensing and Collaboration Agreements

*Exclusive License Agreements with Amgen for CK1*d *and GCase*

In September 2021, we entered into two exclusive license agreements with Amgen (the Amgen Licenses) with one of the agreements covering development of products directed to casein kinase 1 delta (the CK1d License) and the other covering development of products directed to ß- Glucocerebrosidase (the GCase License).

Under each Amgen License, Amgen granted to us a worldwide, exclusive, sublicensable license under certain of its patents and know-how to research, develop, manufacture, use and commercialize specified products containing compounds that, with respect to the CK1d License, are directed to CK1d, including compounds developed by us prior to the effective date of the CK1d License, and with respect to the GCase License, are directed to GCase, collectively referred to as the licensed products, for any and all uses. We have filed one patent application directed to CK1d. The license grants are subject to Amgen's right to use the licensed patents and know-how solely for internal research use. Until a specified period of time following the achievement of the first successful Phase 2 clinical trial for any licensed product, if we choose to sell, transfer, sublicense or divest rights to a licensed product in certain major markets, Amgen has a time-limited, exclusive right of first negotiation to enter into an agreement with us for such rights. Amgen also agreed to transfer to us certain licensed materials and licensed know-how relating to the licensed products.

Under each Amgen License, we are solely responsible for the research, development, manufacturing and commercialization of the licensed products. We are obligated to use commercially reasonable efforts to develop, manufacture, obtain regulatory approval, and commercialize at least one licensed product under each Amgen License. Under each Amgen License, we also agreed, until a specified period of time following the first commercial sale of the first licensed product in the United States, not to clinically develop, commercialize, or manufacture any compounds or products, other than the licensed products, that are directed to CK1d or GCase, unless we treat them as licensed products that are subject to diligence, milestone and royalty obligations under the Amgen Licenses. If we choose not to treat such compounds or products obtained through a transaction with a third party as a licensed product, then we are obligated to divest or terminate the program for such compounds or products.

Under the Amgen Licenses, we agreed to pay Amgen contingent consideration payable in cash up to an aggregate of $360.0 million in commercial milestone payments upon the achievement of certain sales thresholds per licensed product under the CK1d License and up to an aggregate $360.0 million in commercial milestone payments upon the achievement of certain sales thresholds per licensed product under the GCase License. We also agreed to pay tiered royalties at percentages ranging from the low to high-single-digits on annual worldwide net sales of licensed products under the CK1d License, and royalties at a low-single-digit percentage on annual worldwide net sales of licensed products under the GCase License, payable on a licensed product-by-licensed product and country-by-country basis until the later of the expiration of the last to expire licensed patent or Neumora patent claiming the composition of matter of such licensed product and the tenth anniversary of the first commercial sale of such licensed product in such country. Under each Amgen License, the royalty payments are subject to reductions on a country-by-country basis for lack of patent coverage, generic entry and payment obligations for third-party licenses. Additionally, under each of the Amgen Licenses, if we enter into a sublicense agreement prior to the second anniversary of the effective date of the Amgen Licenses, then we are also obligated to pay Amgen a low-double-digit percentage of sublicense income we receive for the CK1d and/or GCase programs. As of December 31, 2023, none of the milestones pursuant to the Amgen Licenses have been achieved and no amounts were recognized related to the contingent consideration milestones.

Each of the Amgen Licenses continues in force until the expiration of all royalty payment obligations to Amgen unless terminated earlier. We may terminate either Amgen License at-will with 30 days' prior written notice to Amgen at any time prior to the initiation of clinical development for any licensed product or 120 days' prior written notice to Amgen at any time thereafter. Either party may terminate either Amgen License upon written notice for the other party's material breach that remains uncured for ninety days (or for one year if an approved plan to remedy such breach is being diligently pursued) or upon the other party's bankruptcy or insolvency. Amgen may also terminate either Amgen License upon written notice if we breach our obligations to not clinically develop,

commercialize or manufacture compounds or products directed to CK1d or GCase, other than licensed products, unless we treat them as licensed products or divest or terminate the program(s) for such compounds or products.

Upon termination of either of the Amgen Licenses, all rights and licenses granted by Amgen to us under that license will terminate, except that, under the CK1d License, we will retain rights to the compounds directed to CK1d that were developed by us prior to the effective date of the CK1d License. In addition, with respect to all other licensed products, at Amgen's election and in return for tiered royalties at percentages ranging from the low to mid-single-digits on annual worldwide net sales under the CK1d License, and royalties at a low-single-digit percentage on annual worldwide net sales under the GCase License, we will grant to Amgen an automatic, worldwide, perpetual, sublicensable, irrevocable and exclusive license to exploit such licensed products, under all patent rights and know-how controlled by us that cover such licensed products and are necessary to exploit any such licensed product as it exists as of the termination date.

Research Collaboration Agreement with Amgen

In September 2021, we entered into a research collaboration and license agreement with Amgen to discover drug targets, biomarkers and other insights associated with CNS diseases that are generated by Amgen's deCODE genetics and human data research capabilities. The term of the Amgen Collaboration Agreement is five years. In return for Amgen performing research and development activities under the Amgen Collaboration Agreement, we are committed to making non-refundable, non-creditable quarterly payments to Amgen over the first two years totaling $50.0 million and for the third year $12.5 million. These payments are due on a quarterly basis. We were obligated to start paying Amgen quarterly payments in September 2021. We will try to mutually agree on the compensation structure for the fourth and fifth years of the Amgen Collaboration Agreement. The Amgen Collaboration Agreement did not require the payment of upfront fees.

The collaboration is governed by a joint research committee comprised of an equal number of representatives from us and from Amgen. Under the Amgen Collaboration Agreement, each party will solely own the patents and know-how it solely generates in the performance of the collaboration activities and the parties will jointly own all patents and know-how they jointly generate in the performance of the collaboration activities. Amgen has granted to us an exclusive, worldwide, sublicensable, fully paid-up, royalty-free license under Amgen's rights in and to the patents and know-how generated in the performance of the collaboration activities that are controlled by Amgen, to exploit therapeutic compounds and diagnostics for use with therapeutics to treat, ameliorate or prevent diseases with effects that manifest primarily in the CNS (the collaboration defined CNS Field). We have granted to Amgen an exclusive, worldwide, sublicensable, fully paid-up, royalty-free license under our rights in and to the patents and know-how generated in the performance of the collaboration activities that are controlled by us, to exploit therapeutic compounds and diagnostics for use with therapeutics outside of the CNS Field.

We also granted to Amgen an exclusive option to negotiate, and the right of first negotiation, to obtain exclusive, worldwide licenses to research, develop, commercialize and otherwise exploit up to two therapeutic products arising from the collaboration, which is exercisable on a product-by-product basis until a specified period of time following the achievement of the first successful Phase 2 clinical trial for such product.

Either party may terminate the Amgen Collaboration Agreement upon material breach of the other party that is not cured within 90 days after written notice is given or for the other party's insolvency or bankruptcy. In addition, the Amgen Collaboration Agreement terminates automatically on the third anniversary of the effective date if the parties are unable to agree on the compensation structure for the fourth and fifth years of the agreement.

As part of the agreements, we issued to Amgen 20.0 million shares of our Series A-2 Preferred Stock. Additionally, Amgen purchased 12.7 million shares of our Series A-2 Preferred Stock at a purchase price of $7.85 per share, for total consideration of $100.0 million. Subject to certain conditions, Amgen was also obligated to provide us additional financing of up to $100.0 million. This obligation terminated upon the completion of our initial public offering.

2015 TSRI License Agreement

In connection with the acquisition of BlackThorn in September 2020, we gained rights to a license agreement between BlackThorn and TSRI entered into in November 2015, as amended in November 2017 and April 2019 (2015 TSRI License Agreement). Pursuant to the 2015 TSRI License Agreement, TSRI granted us a worldwide, exclusive license under certain patent rights and a worldwide, non-exclusive license under certain know-how relating to TSRI's Kappa Opioid Receptor (KOR or navacaprant), V1aR Receptor (V1aR or NMRA-511) Antagonist and oxytocin receptors (OTR) positive allosteric modulator programs (collectively, the TSRI Programs), in each case that is sublicensable under certain conditions, to use, manufacture and commercialize products (i) that are covered by the relevant licensed patents, (ii) that involve the use or incorporation of the licensed know-how or (iii) that are KOR, V1aR or OTR modulators discovered by BlackThorn within two years of the effective date of the 2015 TSRI License Agreement for the diagnostic, prophylactic and/or therapeutic treatment of humans and animals. The last patent expiration date for the patents licensed pursuant to the TSRI 2015 License Agreement is 2038, excluding any patent term adjustment or patent term extension. The licensed patent rights are subject to TSRI's right to use the licensed patents for internal research and educational purposes and to grant non-exclusive licenses to other non-profit or academic institutions to use the licensed patent rights for internal research and educational purposes.

We are subject to certain research and development milestone timeline obligations and have agreed to use commercially reasonable efforts to obtain regulatory approvals and to commercialize the licensed products.

Under the 2015 TSRI License Agreement, BlackThorn issued TSRI shares of its capital stock representing one percent of all outstanding shares of its capital stock calculated on a fully diluted basis. We paid a change of control success fee to TSRI in shares of our Series A-1 convertible preferred stock with a fair value of $0.3 million. In December 2023, as part of the milestone payment under the BlackThorn Merger Agreement that became due upon the dosing of the first patient in the Phase 3 clinical trial for navacaprant, (1) we issued 50,903 shares of stock to TSRI as a success fee under the 2015 TSRI License Agreement and (2) we paid to TSRI $0.3 million as a milestone payment under the 2015 TSRI License Agreement. Beyond the payment of the change in control success fee, the success fee for the BlackThorn Merger Agreement milestone and the navacaprant milestone payment under the 2015 TSRI License Agreement, as of December 31, 2023, no other contingent consideration related to the milestones, royalty or other payments have been made to TSRI pursuant to the TSRI 2015 License Agreement.

We are obligated to pay TSRI a specified nominal annual license fee that is creditable against any royalties due for that calendar year. Upon achieving specified development and regulatory milestone events, we are obligated to pay TSRI milestone payments in the aggregate of up to $1.5 million for each TSRI Program and upon achieving specified commercial milestone events, we are obligated to pay TSRI milestone payments in the aggregate of up to $3.5 million for each occurrence. We are also obligated to pay TSRI a percentage ranging from the mid-single digits to sub-teen double digits of any sublicensing revenues we receive from a sublicensee. We also agreed to pay TSRI, on a product-by-product and country-by-country basis, royalties in the low-single digit percentages on worldwide net sales of products, which are either tiered or not tiered depending on the category of product, until the later of the expiration of the last to expire licensed patent in the world and the tenth anniversary of the first commercial sale of such licensed product in such country, subject to certain reductions for generic entry, lack of patent coverage and payment obligations for third-party licenses.

The 2015 TSRI License Agreement continues in force until the expiration of all royalty payment obligations to TSRI. We may terminate the 2015 TSRI License Agreement for any reason upon 90 days' prior written notice to TSRI. TSRI may immediately terminate the 2015 TSRI License Agreement if we fail to make a payment and do not cure within 20 days after written notice from TSRI, default on our indemnification or insurance obligations, become insolvent or bankrupt, are convicted of a felony relating to the development, manufacture, or commercialization of the licensed products, underpay by a certain percentage within any specified period of time, or default in the performance of any of our other obligations and fail to remedy the default within 60 days after written notice from TSRI. In the event we do not use commercially reasonable efforts to achieve the research and development milestones within the agreed upon time period and do not either meet the milestone or make substantial progress towards achieving the goals of the applicable research and development plan for such Program, in each case, within a specified cure period, TSRI has the right, based on the decision of an arbitrator, to either terminate the 2015 TSRI License Agreement with respect to a particular Program or terminate the 2015 TSRI License Agreement in its entirety. Upon any termination, all rights and licenses granted by TSRI to us will terminate. We also agreed to grant to TSRI, in return for royalties at a low-single-digit percentage of TSRI's net sales of licensed products, an irrevocable, exclusive, worldwide, perpetual, sublicensable license to data, information, or other materials exclusively controlled by us that directly relate to the licensed products, to research, develop, manufacture and commercialize the licensed products for the diagnostic, prophylactic and/or therapeutic treatment of humans and animals.

Vanderbilt License Agreement

Pursuant to the Vanderbilt License Agreement, we obtained an exclusive, worldwide, royalty-bearing, sublicensable (subject to certain restrictions) license under certain patent rights and a non-exclusive, worldwide, royalty-bearing, sub-licensable (subject to certain restrictions) license under certain know-how covering small molecule positive allosteric modulators (PAMs) predominantly of the muscarinic acetylcholine receptor subtype 4 (M4), to develop, manufacture and commercialize products, processes, and services covered by such patent rights or that incorporate or use such know-how, for any and all uses. The last patent expiration date for the licensed patents that are issued or expected to issue, from currently pending or provisional applications, pursuant to the Vanderbilt License Agreement is 2041, excluding any patent term adjustment or patent term extension. The licensed patent rights are subject to Vanderbilt's right to use the patent rights for research, internal non-commercial use and educational purposes.

We have agreed to use commercially reasonable efforts to develop and commercialize licensed products, and to achieve certain development milestones, the first within a specified period following the effective date and the other on or before June 2024. Failure to meet our obligations in accordance with the Vanderbilt License Agreement to achieve such milestones may constitute a material breach of contract that entitles Vanderbilt to terminate the Vanderbilt License Agreement.

Under the Vanderbilt License Agreement, we paid an upfront fee of $13.0 million. We are also obligated to pay Vanderbilt tiered royalties at mid-single-digit percentages on net sales of royalty-bearing products, which are payable on a country-by-country and product-by-product basis until the later of expiration of the last to expire valid claim covering composition of matter in the licensed patents and the tenth anniversary of the first commercial sale of such product in such country. Under the Vanderbilt License Agreement, the royalty payments are subject to reductions on a country-by-country basis for the lack of patent coverage, generic entry and payment obligations for third-party licenses. In addition, we are obligated to pay Vanderbilt a low-double- digit percentage of sublicense income we receive for sublicenses entered into before the achievement of a specified event. We also agreed to pay Vanderbilt payments of up to $42.4 million upon achievement of specified development milestone events for NMRA-266, up to $42.0 million upon achievement of specified development milestone events for products other than NMRA-266, and up to $380.0 million upon achievement of specified commercial milestone events, but in no event will our total milestone payments to Vanderbilt exceed $422.4 million. In November 2023, a $2.0 million development milestone was paid to Vanderbilt under the Vanderbilt License Agreement. Also in November 2023, Neumora and Vanderbilt executed an option exercise notice pursuant to which we agreed to include within the scope of the exclusive license under the Vanderbilt License Agreement certain patent rights conceived or developed by Vanderbilt in the course of carrying out the sponsored research pursuant to a sponsored research agreement between us and Vanderbilt. As consideration for the exercise of this option, Neumora will pay Vanderbilt $0.8 million in the first quarter of 2024. As of December 31, 2023, no other milestone, royalty or other payment (other than the upfront payment and development milestone described above) has become payable to Vanderbilt pursuant to the Vanderbilt License Agreement.

The Vanderbilt License Agreement will remain in force, on a country-by-country basis, until the expiration of all royalty payment obligations to Vanderbilt in such country. If we bring a patent challenge against any licensed patents, in addition to paying certain costs associated with the proceeding, Vanderbilt may convert the exclusive licenses to non-exclusive licenses or terminate the Vanderbilt License Agreement. If the licensed patents survive the patent challenge, all payments under the agreement will be increased by a specified amount. We have the right to terminate the Vanderbilt License Agreement at any time by providing Vanderbilt with 90 days' prior notice. Vanderbilt has the right to terminate the Vanderbilt License Agreement if we file for bankruptcy. The Vanderbilt License Agreement will automatically terminate if our insurance coverage lapses and is not cured within 90 days. Vanderbilt also has the right to terminate if we fail to make payments, breach our diligence obligations or breach any other material term upon 60 days prior notice.

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. 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. A new drug must be approved by the FDA through the New Drug Application (NDA) process before it may be legally marketed in the United States. 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 in accordance with FDA's Good Laboratory Practice (GLP) 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;
- 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.

Once a product candidate is identified for development, it enters the preclinical development stage. The preclinical developmental stage generally involves laboratory evaluations of chemistry, formulation and stability, as well as studies to evaluate the product candidate's toxicity in animals, in an effort to support subsequent clinical testing. The conduct of preclinical studies is subject to federal regulations and requirements, including GLP regulations for certain studies.

Prior to beginning the first clinical trial with a product candidate in the United States, the trial sponsor must submit the results of preclinical testing, together with manufacturing information and analytical data, to the FDA as part of, an IND. An IND is a request for authorization 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 candidate, chemistry, manufacturing and controls information, and any available human data or literature to support the use of the product candidate. 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, places the IND on clinical hold. In such case, the IND sponsor and the FDA must resolve any outstanding concerns or questions before the clinical trial can begin. Submission of an IND therefore may or may not result in FDA authorization to begin a clinical trial.

Clinical trials involve the administration of the investigational product to human subjects under the supervision of qualified investigators, generally physicians not employed by or under the trial sponsor's control, in accordance with GCPs, which include the requirement that all research subjects provide their informed consent in writing for their participation in any clinical trial. Clinical trials must be conducted under protocols detailing, among other things, the objectives of the trial, dosing procedures, subject selection and exclusion criteria and the safety and effectiveness criteria to be evaluated. Each protocol must be submitted to the FDA as part of the IND, and 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 at each institution participating in the clinical trial must review and approve review and approve each protocol before a clinical trial commences at that institution and must also approve the information regarding the trial and the consent form that must be provided to each trial subject or his or her legal representative, monitor the study until completed and otherwise comply with IRB regulations. Regulatory authorities, the IRB or the sponsor may suspend a clinical trial at any time on various grounds, including a finding that the subjects are being exposed to an unacceptable health risk or that the trial is unlikely to meet its stated objectives. In addition, some studies also include oversight by an independent group of qualified experts organized by the clinical trial sponsor, known as a data safety monitoring board or committee. 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. There are also requirements governing the reporting of ongoing clinical studies and clinical trial results to public registries, including clinicaltrials.gov.

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, excretion, and distribution of the investigational product in humans, the side effects associated with increasing doses, and, if possible, to gain early evidence on its effectiveness.
- Phase 2: The product candidate is administered to a limited patient population with a specified disease or condition identify possible adverse side effects and safety risks, to preliminarily evaluate the efficacy of the product candidate for specific targeted diseases and to determine dosage tolerance and appropriate dosage.
- Phase 3: The product candidate is administered to an expanded patient population to further evaluate dosage, to provide substantial evidence of efficacy and to further test for safety, generally at multiple geographically dispersed clinical trial sites. These clinical trials are intended to establish the overall risk-benefit ratio of the product candidate and provide an adequate basis for product labeling.

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. These clinical trials, sometimes referred to as 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.

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 alignment 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

The results of product development, 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. The submission of an NDA is subject to the payment of substantial user fees, unless a waiver or exemption applies.

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, 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 (PDUFA) 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. Additionally, before approving an NDA, the FDA may inspect one or more clinical trial 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 drug with prescribing information for specific indications. A CRL indicates that the review cycle of the application is complete, and the application will not be approved in its present form. A CRL usually describes the specific deficiencies in the NDA identified by the FDA and may require additional clinical data, such as an additional clinical trial 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 or, addressing all of the deficiencies that the FDA has 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 a product receives regulatory approval, the approval may be significantly limited to specific diseases and dosages or the indications for use may otherwise be limited, which could restrict the commercial value of the product. In addition, the FDA may require a sponsor to conduct Phase 4 testing, which involves clinical trials designed to further assess a drug's safety and/or effectiveness after NDA approval, and may require additional testing and surveillance programs to monitor the safety of approved products which have been commercialized. The FDA may also place other conditions on approval including the requirement for a risk evaluation and mitigation strategy (REMS), to assure the safe use of the drug. If the FDA concludes a REMS is needed, the sponsor of the NDA must submit a proposed REMS, which could include medication guides, physician communication plans, or elements to assure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. The FDA will not approve the NDA without an approved REMS, if required. Any of these limitations on approval or marketing could restrict the commercial promotion, distribution, prescription or dispensing of products.

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 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 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.

Expedited Development and Review Programs

The FDA offers a number of programs intended to expedite the development or review of a marketing application for a drug product. For example, the Fast Track program is intended to expedite or facilitate the process for developing and reviewing product candidates 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 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 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, 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 development and review processes, such as priority review. An NDA is eligible for priority review if the product candidate is designed to treat a serious 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, as compared to ten months for review of new-molecular-entity NDAs under its current PDUFA review goals.

Additionally, depending on the design of the applicable clinical trials, product candidates studied for their safety and effectiveness in treating serious or life-threatening diseases or conditions may be eligible for accelerated approval upon a determination that the product candidate has an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit, or on a clinical endpoint that can be measured earlier than irreversible morbidity or mortality, that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefits, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments. As a condition of continued 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 benefits, 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 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, defined as a disease or condition with a patient population of fewer than 200,000 individuals in the United States, or 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. Orphan designation does not convey any advantage in or shorten the duration of the regulatory review and approval process.

If a product that has orphan drug designation subsequently receives the first FDA approval for a particular 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, 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

Any 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, certain manufacturing changes and additional labeling claims, are subject to further 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 cGMPs and other laws and regulations. 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 requirements for 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 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 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 labeling.

Marketing Exclusivity

Market exclusivity provisions 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 alternatively 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 all of the 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 marketing exclusivity attached to another period of exclusivity 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.

Other U.S. Regulatory Requirements

In addition to FDA regulation of pharmaceutical products, pharmaceutical companies are also 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 and may constrain the financial arrangements and relationships through which we research, as well as sell, market and distribute any products for which we obtain marketing authorization. Such laws include, without limitation, state and federal anti-kickback, fraud and abuse, false claims, and transparency laws and regulations related to drug pricing and payments and other transfers of value made to physicians and other healthcare providers. If their operations are found to be in violation of any of such laws or any other governmental regulations that apply, they may be subject to penalties, including, without limitation, administrative, civil and criminal penalties, damages, fines, disgorgement, the curtailment or restructuring of operations, integrity oversight and reporting obligations, exclusion from participation in federal and state healthcare programs and imprisonment.

Foreign Government Regulation

To market any product outside of the United States, we would need to comply with numerous and varying regulatory requirements of other countries regarding safety and efficacy and governing, among other things, clinical trials, marketing authorization, commercial sales and distribution of our products. The foreign regulatory approval process includes all of the risks associated with FDA approval set forth above, as well as additional country-specific regulation.

Whether or not we obtain FDA approval for a product, we must obtain approval of a product by the comparable regulatory authorities of foreign countries before we can commence clinical trials or marketing of the product in those countries. Approval by one regulatory authority does not ensure approval by regulatory authorities in other jurisdictions. The approval process varies from country to country, can involve additional testing beyond that required by FDA, and may be longer or shorter than that required for FDA approval. The requirements governing the conduct of clinical trials, product licensing, pricing, promotion, and reimbursement vary greatly from country to country.

Non-clinical Studies and Clinical Trials

Similarly to the United States, the various phases of non-clinical and clinical research in the European Union (EU) are subject to significant regulatory controls.

Non-clinical studies are performed to demonstrate the health or environmental safety of new chemical or biological substances. Non-clinical (pharmaco-toxicological) studies must be conducted in compliance with the principles of good laboratory practice (GLP) as set forth in EU Directive 2004/10/EC (unless otherwise justified for certain particular medicinal products, e.g., radio-pharmaceutical precursors for radio-labeling purposes). In particular, non-clinical studies, both in vitro and in vivo, must be planned, performed, monitored, recorded, reported and archived in accordance with the GLP principles, which define a set of rules and criteria for a quality system for the organizational process and the conditions for non-clinical studies. These GLP standards reflect the Organization for Economic Co-operation and Development requirements.

Clinical trials of medicinal products in the EU must be conducted in accordance with EU and national regulations and the International Council for Harmonization of Technical Requirements for Pharmaceuticals for Human Use (ICH) guidelines on Good Clinical Practices (GCP) as well as the applicable regulatory requirements and the ethical principles that have their origin in the Declaration of Helsinki. If the sponsor of the clinical trial is not established within the EU, it must appoint an EU entity to act as its legal representative. The sponsor must take out a clinical trial insurance policy, and in most EU member states, the sponsor is liable to provide ‘no fault’ compensation to any study subject injured in the clinical trial.

The regulatory landscape related to clinical trials in the EU has been subject to recent changes. The EU Clinical Trials Regulation (CTR) which was adopted in April 2014 and repeals the EU Clinical Trials Directive, became applicable on January 31, 2022. Unlike directives, the CTR is directly applicable in all EU member states without the need for member states to further implement it into national law. The CTR notably harmonizes the assessment and supervision processes for clinical trials throughout the EU via a Clinical Trials Information System, which contains a centralized EU portal and database.

While the Clinical Trials Directive required a separate clinical trial application (CTA) to be submitted in each member state in which the clinical trial takes place, to both the competent national health authority and an independent ethics committee, much like the FDA and IRB respectively, the CTR introduces a centralized process and only requires the submission of a single application for multi-center trials. The CTR allows sponsors to make a single submission to both the competent authority and an ethics committee in each member state, leading to a single decision per member state. The CTA must include, among other things, a copy of the trial protocol and an investigational medicinal product dossier containing information about the manufacture and quality of the medicinal product under investigation. The assessment procedure of the CTA has been harmonized as well, including a joint assessment by all member states concerned, and a separate assessment by each member state with respect to specific requirements related to its own territory, including ethics rules. Each member state's decision is communicated to the sponsor via the centralized EU portal. Once the CTA is approved, clinical study development may proceed.

The CTR foresees a three-year transition period. The extent to which ongoing and new clinical trials will be governed by the CTR varies. Clinical trials for which an application was submitted (i) prior to January 31, 2022 under the Clinical Trials Directive, or (ii) between January 31, 2022 and January 31, 2023 and for which the sponsor has opted for the application of the EU Clinical Trials Directive remain governed by said Directive until January 31, 2025. After this date, all clinical trials (including those which are ongoing) will become subject to the provisions of the CTR.

Medicines used in clinical trials must be manufactured in accordance with Good Manufacturing Practice (GMP). Other national and EU-wide regulatory requirements may also apply.

Marketing Authorization

In order to market our product candidates in the EU and many other foreign jurisdictions, we must obtain separate regulatory approvals. More concretely, in the EU, medicinal product candidates can only be commercialized after obtaining a marketing authorization (MA). To obtain regulatory approval of a product candidate under EU regulatory systems, we must submit a MA application (MAA). The process for doing this depends, among other things, on the nature of the medicinal product. There are two types of MAs:

- "Centralized MAs" are issued by the European Commission through the centralized procedure based on the opinion of the Committee for Medicinal Products for Human Use (CHMP) of the European Medicines Agency (EMA) and are valid throughout the EU. The centralized procedure is compulsory for certain types of medicinal products such as (i) medicinal products derived from biotechnological processes, (ii) designated orphan medicinal products, (iii) advanced therapy medicinal products (ATMPs) (such as gene therapy, somatic cell therapy and tissue engineered products) and (iv) medicinal products containing a new active substance indicated for the treatment of certain diseases, such as HIV/AIDS, cancer, diabetes, neurodegenerative diseases or autoimmune diseases and other immune dysfunctions, and viral diseases. The centralized procedure is optional for products containing a new active substance not yet authorized in the EU, or for products that constitute a significant therapeutic, scientific or technical innovation or which are in the interest of public health in the EU.
- "National MAs" are issued by the competent authorities of the EU member states, only cover their respective territory, and are available for product candidates not falling within the mandatory scope of the centralized procedure. Where a product has already been authorized for marketing in an EU member state, this national MA can be recognized in another member state through the mutual recognition procedure. If the product has not received a national MA in any member state at the time of application, it can be approved simultaneously in various member states through the decentralized procedure. Under the decentralized procedure an identical dossier is submitted to the competent authorities of each of the member states in which the MA is sought, one of which is selected by the applicant as the reference member state.

Under the centralized procedure the maximum timeframe for the evaluation of an MAA by the European Medicine Agency (EMA) is 210 days, excluding clock stops.

Under the above-described procedures, in order to grant the MA, the EMA or the competent authorities of the EU member states make an assessment of the risk benefit balance of the product on the basis of scientific criteria concerning its quality, safety and efficacy. MAs have an initial duration of five years. After these five years, the authorization may be renewed on the basis of a reevaluation of the risk-benefit balance.

The aforementioned EU rules are generally applicable in the European Economic Area (EEA) which consists of the 27 EU member states plus Norway, Liechtenstein and Iceland.

Failure to comply with EU and member state laws that apply to the conduct of clinical trials, manufacturing approval, MA of medicinal products and marketing of such products, both before and after grant of the MA, manufacturing of pharmaceutical products, statutory health insurance, bribery and anti-corruption or with other applicable regulatory requirements may result in administrative, civil or criminal penalties. These penalties could include delays or refusal to authorize the conduct of clinical trials, or to grant MA, product

withdrawals and recalls, product seizures, suspension, withdrawal or variation of the MA, total or partial suspension of production, distribution, manufacturing or clinical trials, operating restrictions, injunctions, suspension of licenses, fines and criminal penalties.

Brexit and the Regulatory Framework in the United Kingdom

Since the end of the Brexit transition period on January 1, 2021, Great Britain (England, Scotland and Wales) has not been directly subject to EU laws, however under the terms of the Ireland/Northern Ireland Protocol, EU laws generally apply to Northern Ireland. The EU laws that have been transposed into United Kingdom (UK) law through secondary legislation remain applicable in Great Britain. However, under the Retained EU Law (Revocation and Reform) Bill 2022, which is currently before the UK parliament, any retained EU law not expressly preserved and "assimilated" into domestic law or extended by ministerial regulations (to no later than June 23, 2026) will automatically expire and be revoked by December 31, 2023. However, new legislation such as the EU CTR is not applicable in Great Britain.

Under the Medicines and Medical Devices Act 2021, the Secretary of State or an 'appropriate authority' has delegated powers to amend or supplement existing regulations in the area of medicinal products and medical devices. This allows new rules to be introduced in the future by way of secondary legislation, which aims to allow flexibility in addressing regulatory gaps and future changes in the fields of human medicines, clinical trials and medical devices.

Since January 1, 2021, the Medicines and Healthcare products Regulatory Agency (MHRA), has been the UK's standalone medicines and medical devices regulator. As a result of the Northern Ireland protocol, different rules will apply in Northern Ireland than in England, Wales, and Scotland, together, Great Britain (GB); broadly, Northern Ireland will continue to follow the EU regulatory regime, but its national competent authority will remain the MHRA.

The MHRA has introduced changes to national licensing procedures, including procedures to prioritize access to new medicines that will benefit patients, including a 150-day assessment and a rolling review procedure. All existing EU MAs for centrally authorized products were automatically converted or grandfathered into UK MAs, effective in GB (only), free of charge on January 1, 2021, unless the MA holder opted-out. In order to use the centralized procedure to obtain a MA that will be valid throughout the EEA, companies must be established in the EEA. Therefore since Brexit, companies established in the UK can no longer use the EU centralized procedure and instead an EEA entity must hold any centralized MAs. In order to obtain a UK MA to commercialize products in the UK, an applicant must be established in the UK and must follow one of the UK national authorization procedures or one of the remaining post-Brexit international cooperation procedures to obtain an MA to commercialize products in the UK. The MHRA may rely on a decision taken by the European Commission on the approval of a new (centralized procedure) MA when determining an application for a GB authorization; or use the MHRA's decentralized or mutual recognition procedures which enable MAs approved in EU member states (or Iceland, Liechtenstein, Norway) to be granted in GB.

There will be no pre-MA orphan designation. Instead, the MHRA will review applications for orphan designation in parallel to the corresponding MA application. The criteria are essentially the same, but have been tailored for the market, i.e., the prevalence of the condition in GB, rather than the EU, must not be more than five in 10,000. Should an orphan designation be granted, the period or market exclusivity will be set from the date of first approval of the product in GB.

The UK regulatory framework in relation to clinical trials is derived from existing EU legislation (as implemented into UK law, through secondary legislation). On January 17, 2022, the MHRA launched an eight-week consultation on reframing the UK legislation for clinical trials. The consultation closed on March 14, 2022 and aims to streamline clinical trials approvals, enable innovation, enhance clinical trials transparency, enable greater risk proportionality, and promote patient and public involvement in clinical trials. The outcome of the consultation is being closely watched and will determine whether the UK chooses to align with the CTR or diverge from it to maintain regulatory flexibility.

Coverage and Reimbursement

Sales of any 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, and 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. These third-party payors are increasingly reducing reimbursements for medical products, drugs and 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.

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.

Healthcare Reform

In the United States, there have been, and continue to be, legislative and regulatory changes and proposed changes regarding the healthcare system that could prevent or delay marketing approval of product candidates, restrict or regulate post-approval activities, and affect the profitable sale of product candidates, and similar healthcare laws and regulations exist in the EU and other jurisdictions. Among policy makers and payors in the United States, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and/or expanding access. In the United States, the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives.

By way of example, in March 2010, the Patient Protection and Affordable Care Act (the ACA) was passed, which substantially changed the way healthcare is financed by both governmental and private insurers, and significantly affected the pharmaceutical industry. The ACA, among other things, increased the minimum level of Medicaid rebates payable by manufacturers of brand name drugs from 15.1% to 23.1% of the average manufacturer price; required collection of rebates for drugs paid by Medicaid managed care organizations; imposed a non-deductible annual fee on pharmaceutical manufacturers or importers who sell certain "branded prescription drugs" to specified federal government programs; implemented a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for certain drugs that are inhaled, infused, instilled, implanted, or injected; expanded eligibility criteria for Medicaid programs; created 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 the CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug spending.

Since its enactment, there have been judicial, executive and political 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. Prior to the Supreme Court's decision, President Biden issued an Executive Order to initiate a special enrollment period from February 15, 2021, through August 15, 2021, for purposes of obtaining health insurance coverage through the ACA marketplace. The Executive Order also instructed certain governmental agencies to review and reconsider their existing policies and rules that limit access to healthcare, including among others, reexamining Medicaid demonstration projects and waiver programs that include work requirements, and policies that create unnecessary barriers to obtaining access to health insurance coverage through Medicaid or the ACA. On August 16, 2022, President Biden signed the Inflation Reduction Act of 2022 (the IRA) into law, which, among other things, extends enhanced subsidies for individuals purchasing health insurance coverage in ACA marketplaces through plan year 2025. It is unclear how other healthcare reform measures, if any, will impact our business.

In addition, other legislative changes have been proposed and adopted since the ACA was enacted. For example, on March 11, 2021, President Biden signed the American Rescue Plan Act of 2021 into law, which eliminated the statutory Medicaid drug rebate cap, beginning January 1, 2024. The rebate was previously capped at 100% of a drug's average manufacturer price. Further, in August 2011, the Budget Control Act of 2011, among other things, included aggregate 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 until 2032, with the exception of a temporary suspension from May 1, 2020 through March 31, 2022, unless additional Congressional action is taken. On January 2, 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, 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.

Moreover, heightened governmental scrutiny is likely to continue over the manner in which manufacturers set prices for their marketed products, which already 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, the IRA marks the most significant action by Congress with respect to the pharmaceutical industry since the adoption of the ACA in 2010. Among other things, the IRA requires manufacturers of certain drugs to engage in price negotiations with Medicare (beginning in 2026), 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). Manufacturers that fail to comply with the IRA may be subject to various penalties, including civil monetary penalties. 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. 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, and while the impact of the IRA on the pharmaceutical industry cannot yet be fully determined, it is likely to be significant.

Individual states in the United States have also become increasingly active in implementing regulations designed to control pharmaceutical 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.

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

Data Privacy and Security

Numerous state, federal and foreign laws, regulations and standards govern the collection, use, access to, confidentiality and security of health- related and other personal information, including clinical trial data, and could apply now or in the future to our operations or the operations of our partners. 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. Further, to the extent we collect personal data from individuals outside of the United States, through clinical trials or otherwise, we could be subject to foreign laws, such as the GDPR, which govern the privacy and security of personal data, including health-related data. Our use of AI/ML may also be subject to evolving laws and regulations, controlling for data bias and anti-discrimination. 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.

Commercialization

We intend to retain significant development and commercial rights to our product candidates and, if marketing approval is obtained, we may commercialize our product candidates on our own, or potentially with a partner, in the United States and other geographies. We currently have no sales, marketing or commercial product distribution capabilities. We may build the necessary infrastructure and capabilities over time for the United States, and potentially other regions, though like all things we do, we would seek to leverage technology to build these capabilities over time to be significantly more efficient than the industry average. Decisions to create this infrastructure and capability will be made following further advancement of our product candidates and based on our assessment of our ability to build said capabilities and infrastructure with competitive advantage. Clinical data, the size of the addressable patient population, the size of the commercial infrastructure, manufacturing needs and major trends as to how value is accrued in the industry may all influence or alter our commercialization plans.

Manufacturing

We do not own or operate any manufacturing facilities. We currently depend on and expect to continue to depend on third-party CMOs for all of our requirements of raw materials, drug substance and drug product for our preclinical research and clinical trials of our product candidates. Certain of these CMOs, including the drug substance supplier for our navacaprant (Almac) and the drug product suppliers for our navacaprant (Almac) and NMRA-511 (Aptuit) programs, are single-source suppliers. None of these single-source suppliers have the ability to terminate these agreements for convenience and there are no minimum purchase commitments. We intend to continue to rely on CMOs for later-stage development and commercialization of our product candidates, including any additional product candidates that we may identify. Although we rely on CMOs, we have personnel and third-party consultants with extensive manufacturing experience to oversee the relationships with our contract manufacturers.

Competition

Neumora is a clinical-stage biopharmaceutical company founded to confront the global brain disease crisis by taking a fundamentally different approach to the way treatments for brain diseases are developed. Our efforts to date have resulted in a pipeline of seven clinical and preclinical precision neuroscience programs targeting a broad range of underserved neuropsychiatric disorders and neurodegenerative diseases. The foundation of our approach is an integration between our portfolio of therapeutic candidates with novel mechanisms of action and our precision neuroscience approach, supported by our Precision Toolbox of translational neuroscience tools, methods, and data science capabilities. As such, we compete with multiple biopharmaceutical and biotechnology companies that are similarly working to develop therapeutics targeting neuropsychiatric disorders and neurodegenerative diseases. While we believe we have the competitive advantages referred to above, we face competition from major biopharmaceutical and biotechnology companies, academic institutions, governmental agencies, consortiums and public and private research institutions, among others, many of whom have significantly greater resources than us. Notable competitors include traditional biopharmaceutical and biotechnology companies targeting brain diseases such as Cerevel Therapeutics; Sage Therapeutics; Karuna Therapeutics; Prothena; ACADIA Pharmaceuticals; Axsome Therapeutics; Neurocrine Biosciences and Intra-Cellular Therapies.

Facilities

Our corporate headquarters are located in Watertown, Massachusetts, where we sublease approximately 31,000 square feet of office and laboratory space pursuant to a sublease agreement that expires in June 2025.

In March 2021, we entered into a lease agreement for an office facility in South San Francisco, California. The term of the lease commenced in April 2021 and ended in December 2023.

We believe that our existing facilities are sufficient for our near-term needs but expect to need additional space as we grow. We believe that suitable additional alternative spaces will be available in the future on commercially reasonable terms, if required.

Employees and Human Capital Resources

As of December 31, 2023, we had 124 full-time employees, 82 of whom were primarily engaged in research and development activities. A total of 84 employees held an advanced degree. None of our employees are represented by a labor union or party to a collective bargaining agreement. We consider our relationship with our employees to be good.

Our human capital resources objectives include, as applicable, identifying, recruiting, retaining, incentivizing and integrating our existing and additional employees. The principal purposes of our equity incentive plans are to attract, retain and motivate selected employees, consultants and directors through the granting of stock-based compensation awards and cash-based performance bonus awards.

Legal Proceedings

We are not currently a party to any material legal proceedings. From time to time, we may, however, in the ordinary course of business face various claims brought by third parties, and we may, from time to time, make claims or take legal actions to assert our rights, including intellectual property rights as well as claims relating to employment matters and the safety or efficacy of our products. Any of these claims could subject us to costly litigation, and, while we generally believe that we have adequate insurance to cover many different types of liabilities, our insurance carriers may deny coverage, may be inadequately capitalized to pay on valid claims, or our policy limits may be inadequate to fully satisfy any damage awards or settlements. If this were to happen, the payment of any such awards could have a material adverse effect on our operations, cash flows and financial position. Additionally, any such claims, whether or not successful, could damage our reputation and business.

ITEM 1A. Risk Factors.

RISK FACTORS

Investing in shares of our common stock involves a high degree of risk. You should carefully consider the following risks and uncertainties, together with all of the other information contained in this Annual Report on Form 10-K, including our audited consolidated financial statements and related notes and the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations," before making an investment decision. The risks described below are not the only ones facing us. Many of the following risks and uncertainties are, and will be, exacerbated by any worsening of the global business and economic environment. The occurrence of any of the following risks, or of additional risks and uncertainties not presently known to us or that we currently believe to be immaterial, could materially and adversely affect our business, financial condition, reputation, or results of operations. In such case, the trading price of shares of our common stock could decline, and you may lose all or part of your investment.

Summary Risk Factors

- We are a clinical-stage biopharmaceutical company and have incurred significant losses since our inception, and we expect to incur losses for the foreseeable future. We have no products approved for commercial sale and may never achieve or maintain profitability.
- Our substantial contingent consideration and related obligations from our acquisitions of assets and license and collaboration agreements may result in dilution to our stockholders, may be a drain on our cash resources, or may cause us to incur debt obligations to satisfy the payment obligations.
- Our limited operating history may make it difficult to evaluate our prospects and likelihood of success.
- We will require additional funding in order to finance operations. If we are unable to raise capital when needed, or on acceptable terms, we could be forced to delay, reduce or eliminate our product development programs or commercialization efforts.
- If we are unable to successfully identify, develop and commercialize any product candidates, or experience significant delays in doing so, our business, financial condition and results of operations will be materially adversely affected.
- We were founded with a mission to redefine neuroscience drug development, a field that has seen very limited success. The ability to successfully develop drugs in this field is extremely difficult and is subject to a number of unique challenges.
- We have invested and expect to continue to invest in acquiring product candidates, technologies and assets, as well as research and development efforts that further enhance our product pipeline. Such investments may affect our operating results, and, if the return on these investments is lower or develops more slowly than we expect, our revenue and operating results may suffer.
- We have experienced rapid growth since our inception in November 2019, and expect to continue to grow in the future. If we fail to effectively manage our growth, we may not be able to execute on our business objectives.
- We operate in highly competitive and rapidly changing industries, which may result in others discovering, developing or commercializing competing products before or more successfully than we do.
- Clinical and preclinical drug development is a lengthy and expensive process, with an uncertain outcome. Our clinical and preclinical programs have experienced delays and may experience additional delays or may never advance, which would adversely affect our ability to obtain regulatory approvals or commercialize our product candidates on a timely basis or at all, which could have an adverse effect on our business.
- The development and commercialization of drug products is subject to extensive regulation, and the regulatory approval processes of the FDA and comparable foreign authorities are lengthy, time-consuming, and inherently unpredictable. If we are ultimately unable to obtain regulatory approval for our product candidates on a timely basis or at all, our business will be substantially harmed.
- We depend on intellectual property licensed from third parties and we are currently party to in-license agreements under which we acquired rights to use, develop, manufacture and/or commercialize certain of our proprietary technologies and product candidates. If we breach our obligations under these agreements or if any of these agreements is terminated, or otherwise experience disruptions to our business relationships with our licensors, we may be required to pay damages, lose our rights to such intellectual property and technology, or both, which would harm our business.

Risks Related to Our Limited Operating History, Financial Condition and Need for Additional Capital

We are a clinical-stage biopharmaceutical company and have incurred significant losses since our inception, and we expect to incur losses for the foreseeable future. We have no products approved for commercial sale and may never achieve or maintain profitability.

We are a clinical-stage biopharmaceutical company with a limited operating history. Biopharmaceutical product development is a highly speculative undertaking and involves a substantial degree of risk. We have incurred significant losses since our inception in November 2019, have no products approved for commercial sale, have not generated any revenue from product sales, have financed our operations principally through proceeds from sales of common stock, convertible preferred stock and convertible promissory notes and expect to incur significant losses for the foreseeable future. We expect that it will be several years before we have a commercialized product and generate revenue from product sales. Our net loss was $235.9 million and $130.9 million for the years ended December 31, 2023 and 2022, respectively. As of December 31, 2023, we had an accumulated deficit of $703.4 million. Our losses have resulted principally from acquired in-process research and development from our acquisitions of assets, expenses incurred in the research and development of our product candidates, as well as from costs associated with our preclinical studies and clinical trials and management and administrative costs and other expenses that we have incurred while building our business infrastructure.

We expect our expenses and operating losses will continue to increase substantially for the foreseeable future as we expand our research and development efforts, advance our clinical candidates to potentially registrational trials, identify and acquire product candidates, complete preclinical studies and initiate additional clinical trials, seek regulatory approval and commercialization of our product candidates and operate as a public company. We anticipate that our expenses will continue to increase substantially as we:

- continue clinical and preclinical development of our current and future product candidates and initiate additional preclinical studies and clinical trials;
- seek regulatory approval of our current and future product candidates;
- acquire additional product candidates, technologies, multimodal patient datasets and other assets for our business;
- expand our operational, financial and management systems and increase personnel, including personnel to support our clinical and preclinical development, manufacturing and commercialization efforts;
- continue to develop, perfect, maintain and defend our intellectual property portfolio; and
- incur additional legal, accounting or other expenses in operating our business, including the additional costs associated with operating as a public company.

We have devoted a significant portion of our financial resources and efforts to building our organization, acquiring technologies and companies, executing clinical and preclinical studies, conducting research and development, identifying and developing potential product candidates, building our precision neuroscience approach, organizing and staffing our company, business planning, establishing, maintaining and protecting our intellectual property portfolio, raising capital and providing general and administrative support for these operations. We have not completed development and commercialization of any of our product candidates with most still being in relatively early development.

To become and remain profitable, we must succeed in identifying, developing, conducting successful clinical trials, obtaining regulatory approval for, and eventually commercializing, products that generate significant revenue. This will require us to be successful in a range of challenging activities, including completing preclinical studies and clinical trials of our product candidates, continuing to discover and develop additional product candidates, obtaining regulatory and marketing approval for any product candidates that successfully complete clinical trials, accessing manufacturing capacity, establishing marketing capabilities, commercializing and ultimately selling any products. We may never succeed in any or all of these activities and, even if we do, we may never generate revenue that is sufficient to achieve profitability. Even if we do achieve profitability, we may not be able to sustain profitability or meet outside expectations for our profitability. If we are unable to achieve or sustain profitability or to meet outside expectations for our profitability, the price of our common stock could be materially adversely affected.

Because of the numerous risks and uncertainties associated with biopharmaceutical and biotechnology products and drug development, we are unable to accurately predict the timing or amount of increased expenses or when, or if, we will be able to achieve profitability. If we are required by the U.S. Food and Drug Administration (FDA) or comparable foreign regulatory authorities to perform studies in addition to those we currently anticipate, or if there are any delays in commencing or completing our clinical trials or the development of any of our product candidates, our expenses could increase and commercial revenue could be further delayed and become more uncertain, which will have a material adverse impact on our business.

Our substantial contingent consideration and related obligations from our acquisitions of assets and license and collaboration agreements may result in dilution to our stockholders, may be a drain on our cash resources, or may cause us to incur debt obligations to satisfy the payment obligations.

In connection with our acquisitions of assets in late 2020, we entered into arrangements whereby the former stockholders of those companies are entitled to substantial contingent consideration payments upon the occurrence of certain events. For example, in connection with our acquisition of BlackThorn Therapeutics, Inc. (BlackThorn), a privately held company, the former BlackThorn stockholders are entitled to contingent consideration (i) with respect to navacaprant (NMRA-140), in the form of development and regulatory approval milestones of up to an aggregate amount of $365.0 million, which includes a milestone payment that became due in October 2023 upon dosing the first patient in the Phase 3 clinical trial for navacaprant, which was primarily settled by issuing unregistered shares of our common stock in December 2023, and sales-based milestones of up to an aggregate amount of $450.0 million and (ii) with respect to NMRA-511, in the form of development and regulatory approval milestones of up to an aggregate amount of $100.0 million and sales-based milestones of up to an aggregate amount of $100.0 million (BlackThorn Milestone Payments). With the exception of one development milestone in the amount of $10.0 million that is required to be settled in cash, the remaining BlackThorn Milestone Payments may be settled in cash or shares of our equity, or a combination of both, at our sole discretion. In connection with the BlackThorn acquisition, we also became obligated under its license agreement with TSRI for, among other obligations, development and regulatory milestone payments of up to $1.5 million in aggregate for the first product from each of the TSRI programs and commercial milestone payments of up to $3.5 million in aggregate for each occurrence.

Under the terms of our September 2021 license agreements with Amgen, we are obligated to pay Amgen up to an aggregate of $720.0 million in commercial milestone payments upon the achievement of certain sales thresholds and single digit royalties on potential annual worldwide net sales related to the CK1δ or GCase programs. In addition, under the collaboration agreement with Amgen, we committed to making quarterly payments to Amgen for their collaboration activities over three years totaling $62.5 million.

Under the terms of our license agreement, as amended, with Vanderbilt University (Vanderbilt), we are obligated to pay Vanderbilt up to an aggregate of $422.4 million in development and commercial milestone payments upon the achievement of certain development milestones, which includes a milestone payment of $2.0 million that became due in October 2023, and sales thresholds, and mid-single digit royalties on potential future net sales.

In order to satisfy our obligations to make these payments, if and when they are triggered, we may need to issue equity or convertible debt securities that may cause dilution to our stockholders, or we may use our existing cash or incur debt obligations to satisfy the payment obligations in cash, which may adversely affect our financial position. In addition, these obligations may impede our ability to raise money in future public offerings of debt or equity securities or to obtain a third-party line of credit.

See the sections titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Acquisitions of Assets” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Strategic License and Research and Collaboration Agreements” in this Annual Report on Form 10-K for additional information regarding these agreements.

Our limited operating history may make it difficult to evaluate our prospects and likelihood of success.

We are a clinical-stage biopharmaceutical company with a limited operating history upon which you can evaluate our business and prospects. Since our inception in November 2019, we have devoted substantially all of our resources and efforts to building our organization, acquiring technologies and companies, executing preclinical studies and clinical trials, conducting research and development, identifying and developing potential product candidates, building our precision neuroscience tools, organizing and staffing our company, business planning, establishing, maintaining and protecting our intellectual property portfolio, raising capital and providing general and administrative support for these operations. All of our product candidates are in either clinical development or in preclinical stages of development, and we have not yet demonstrated our ability to successfully complete any late-stage or registrational/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. Additionally, we expect our financial condition and operating results to continue to fluctuate significantly from period to period due to a variety of factors, many of which are beyond our control. Consequently, any predictions you may make about our future success or viability may not be as accurate as they could be if we had a longer operating history.

In addition, we may encounter unforeseen expenses, difficulties, complications, delays and other known and unknown factors and risks frequently experienced by clinical-stage biotechnology and biopharmaceutical companies in rapidly evolving fields. We also may need to transition from a company with a research focus to a company capable of supporting commercial activities. If we do not adequately address these risks and difficulties or successfully make such a transition, it could have a material adverse effect on our business.

We will require additional funding in order to finance operations. If we are unable to raise capital when needed, or on acceptable terms, we could be forced to delay, reduce or eliminate our product development programs or commercialization efforts.

Developing biopharmaceutical products, including conducting preclinical studies and clinical trials, is a very time-consuming, expensive and uncertain process that takes years to complete. We expect our expenses to continue to increase in connection with our ongoing activities, particularly as we conduct clinical trials of, and seek regulatory and marketing approval for, our product candidates. Even if one or more of our product candidates is approved for commercial sale, we anticipate incurring significant costs associated with commercializing any approved product candidate. To date, we have funded our operations principally through private financings. We expect our expenses to increase in connection with our ongoing activities, particularly as we continue the clinical and preclinical development of our product candidates, continue to develop and deploy our precision neuroscience approach, commence additional preclinical studies and clinical trials, and continue to identify and develop additional product candidates either through internal development or through acquisitions or in-licensing product candidates.

In addition, 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. Accordingly, we will need to obtain substantial additional funding in order to support 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 regulatory approval or commercialization efforts.

We expect to continue to expend significant resources for the foreseeable future. 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. Our future capital requirements will depend on many factors, including but not limited to:

- the scope, timing, progress, costs and results of discovery, preclinical development and clinical trials for our current or future product candidates;
- the number of clinical trials required for regulatory approval of our current or future product candidates;
- the costs, timing and outcome of regulatory review of any of our current or future product candidates;
- the costs associated with acquiring or licensing additional product candidates, technologies or assets, including the timing and amount of any milestones, royalties or other payments due in connection with our acquisitions and licenses;
- the cost of manufacturing clinical and commercial supplies of our current or future product candidates;
- the costs and timing of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending any intellectual property-related claims, including any claims by third parties that we are infringing upon their intellectual property rights;
- the effectiveness of our precision neuroscience approach at identifying target patient populations and utilizing our approach to enrich our patient population in our clinical trials;
- our ability to maintain existing, and establish new, strategic collaborations or other arrangements and the financial terms of any such agreements, including the timing and amount of any future milestone, royalty or other payments due under any such agreement;
- our ability to access additional multimodal patient datasets;
- the costs and timing of future commercialization activities, including manufacturing, marketing, sales and distribution, for any of our product candidates for which we receive marketing approval;
- the revenue, if any, received from commercial sales of our product candidates for which we receive marketing approval;
- expenses to attract, hire and retain skilled personnel;
- the costs of operating as a public company;
- our ability to establish a commercially viable pricing structure and obtain approval for coverage and adequate reimbursement from third-party and government payers;
- the effect of macroeconomic trends including inflation and rising interest rates;
- addressing any potential supply chain interruptions or delays;
- the effect of competing technological and market developments; and
- the extent to which we acquire or invest in business, products and technologies.

Our ability to raise additional funds will depend on financial, economic, political and market conditions and other factors, over which we may have no or limited control. Additional funds may not be available when we need them, on terms that are acceptable to us, or at all. If we fail to obtain necessary capital when needed on acceptable terms, or at all, it could force us to delay, limit, reduce or terminate our product development programs, future commercialization efforts or other operations. Because of the numerous risks and uncertainties associated with research, product development and commercialization of product candidates, we are unable to predict the timing or amount of our working capital requirements or when or if we will be able to achieve or maintain profitability.

Accordingly, we will need to continue to rely on additional financing to achieve our business objectives and 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 operations with our existing cash, cash equivalents and marketable securities, the net proceeds from our initial public offering, any future equity or debt financings and upfront and milestone and royalties payments, if any, received under any future licenses or collaborations. If we raise additional capital through the sale of equity or convertible debt securities, or issue any equity or convertible debt securities in connection with a collaboration agreement or other contractual arrangement, 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 holder of our common stock. In addition, the possibility of such issuance may cause the market price of our common stock to decline. For example, in December 2023, we settled a Phase 3 navacaprant milestone owed to Blackthorn stockholders by primarily issuing shares of our common stock. Debt financing, if available, may result in increased fixed payment obligations and involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures, declaring dividends or acquiring, selling or licensing intellectual property rights or assets, which could adversely impact our ability to conduct our business.

If we raise additional funds through collaborations, strategic alliances or marketing, distribution or licensing arrangements with third parties, we may have to relinquish valuable rights to our intellectual property, technologies, future revenue streams or product candidates or grant licenses on terms that may not be favorable to us. We could also be required to seek funds through arrangements with collaborators or others at an earlier stage than otherwise would be desirable. Any of these occurrences may have a material adverse effect on our business, operating results and prospects.

We maintain the majority of our cash and cash equivalents in accounts with major U.S. and multi-national financial institutions, and our deposits at certain of these institutions exceed insured limits. Market conditions and changes in financial regulations and policies can impact the viability of these institutions. In the event of failure of any of the financial institutions where we maintain our cash and cash equivalents, there can be no assurance that we would be able to access uninsured funds in a timely manner or at all. Any inability to access or delay in accessing these funds could adversely affect our business and financial position. In addition, changes in regulations governing financial institutions are beyond our control and difficult to predict; consequently, the impact of such changes on our business and results of operations is difficult to predict and may have an adverse effect on us.

Risks Related to Our Business

If we are unable to successfully identify, develop and commercialize any product candidates, or experience significant delays in doing so, our business, financial condition and results of operations will be materially adversely affected.

Our ability to generate revenue from sales of any of our approved product candidates, which we do not expect will occur for at least the next several years, depends heavily on the successful identification, development, regulatory approval and eventual commercialization of any product candidates, which may never occur. We have never generated revenue from sales of any products, and we may never be able to develop, obtain regulatory approval for, or commercialize, a marketable product. All of our product candidates will require significant clinical development, regulatory approval, establishment of sufficient manufacturing supply, including commercial manufacturing supply, and may require us to build a commercial organization and make substantial investment and significant marketing efforts before we generate any revenue from product sales. We are not permitted to market or promote any of our product candidates before we receive regulatory approval from the FDA or comparable foreign regulatory authorities, and we may never receive such regulatory approval for any of our product candidates.

The successful development of our product candidates will depend on several factors, including, but not limited to, the following:

- successful and timely completion of preclinical studies and clinical trials for which the FDA, or any comparable foreign regulatory authority, agree with the design, endpoints, or implementation;
- sufficiency of our financial and other resources to complete the necessary preclinical studies and clinical trials;
- receiving regulatory approvals, allowances or authorizations for conducting future clinical trials;
- initiation and successful patient enrollment in, and completion of, clinical trials on a timely basis;
- our ability to demonstrate to the satisfaction of the FDA or any comparable foreign regulatory authority that the applicable product candidate is safe and effective as for its intended uses;
- our ability to demonstrate to the satisfaction of the FDA or any comparable foreign regulatory authority that the applicable product candidate's risk-benefit ratio for its proposed indication is acceptable;
- timely receipt of marketing approvals for our product candidates from applicable regulatory authorities;
- addressing any potential supply chain interruptions or delays;
- the extent of any required post-marketing approval commitments to applicable regulatory authorities; and
- establishing, scaling up and scaling out, either alone or with third-party manufacturers, manufacturing capabilities of clinical supply for our clinical trials and commercial manufacturing, if any of our product candidates are approved.

If we do not achieve one or more of these factors in a timely manner or at all, we could experience significant delays or an inability to successfully develop and commercialize our product candidates, which would materially adversely affect our business, financial condition, and results of operations.

Additionally, clinical or regulatory setbacks to other companies developing similar products or within adjacent fields may impact the clinical development of and regulatory pathway for our current or future product candidates, or may negatively impact the perceptions of value or risk of our technologies.

We were founded with a mission to redefine neuroscience drug development, a field that has seen very limited success. The ability to successfully develop drugs in this field is extremely difficult and is subject to a number of unique challenges.

Drug development in the field of brain diseases, and neuropsychiatric disorders and neurodegenerative diseases in particular, has seen very limited success historically. We estimate over $110 billion have been spent on neuroscience research and development since 2019 in the United States alone, representing approximately 33% of all disease-specific spending. However, only approximately 12% of all new therapies approved during this time period have been for the treatment of brain diseases. From 2011 to 2020, clinical development success rates for new drug candidates that employed patient selection biomarkers were approximately 16% compared to approximately 8% for patients without patient selection biomarkers according to the BIO; however, clinical success depends on a number of factors and employing a patient selection biomarker approach does not guarantee that our product candidates will be approved and commercialized. Developing a product candidate for treatment of these brain diseases is extremely difficult and subjects us to a number of unique challenges, including obtaining regulatory approval from the FDA and other regulatory authorities who have only a limited set of precedents to rely on.

We intend to work closely with the FDA and comparable foreign regulatory authorities to perform the requisite scientific analyses and evaluation in an effort to obtain regulatory approval for our product candidates; however, the process of developing our product candidates may be more complex and time-consuming relative to other more well-known approaches to drug development. We cannot be certain that our approach will lead to the development of product candidates that effectively and safely address the underlying brain diseases.

Moreover, given the history of clinical failures in this field, future clinical or regulatory failures by us or others may have result in further negative perception of the likelihood of success in this field, which may significantly and adversely affect the market price of our common stock.

We have invested and expect to continue to invest in acquiring product candidates, technologies and assets, as well as research and development efforts that further enhance our product pipeline. Such investments may affect our operating results, and, if the return on these investments is lower or develops more slowly than we expect, our revenue and operating results may suffer.

We have invested and expect to continue to invest in acquiring potential product candidates to enhance our product pipeline, technologies and assets. These activities and investments involve significant time, risks, and uncertainties, including the risk that the associated expenses may affect our operating results, that such investments may not generate products that can be successfully developed or technologies that can be effectively used by us, and cause significant drains on capital resources and commit us to substantial financial

obligations. While we believe that we must continue to invest a significant amount of time and resources in the development of our product pipeline, if we do not achieve the benefits anticipated from these investments, or if the achievement of these benefits is delayed, our business, operating results and prospects may be materially adversely affected.

We have experienced rapid growth since our inception in November 2019, and expect to continue to grow in the future. If we fail to effectively manage our growth, we may not be able to execute on our business objectives.

As of December 31, 2022, we had 112 full-time employees and, as of December 31, 2023, we had grown to 124 full-time employees. We expect continued growth in the number of our employees and the scope of our operations, particularly as we continue our current and future clinical trials and preclinical studies, initiate and conduct investigational new drug application (IND)-enabling studies and build out our clinical operations, regulatory, quality and manufacturing infrastructure. In addition to headcount growth, we have made a number of acquisitions of assets, and entered into a significant strategic collaboration with Amgen and in-licensed programs from Amgen and Vanderbilt. These activities have added significant complexity to our organization, including a number of clinical and preclinical programs that we are now developing. These programs require significant infrastructure and headcount to effectively prosecute.

To manage our anticipated future growth, we will continue to implement and improve our managerial, operational, and financial systems, expand our facilities, and continue to recruit and train additional qualified personnel. Due to the complexity in managing a company that has scaled very quickly and anticipates continued growth, we may not be able to scale our headcount and operations effectively to manage the expansion of our product pipeline or recruit and train the necessary additional personnel. The expansion of our operations may lead to significant costs and may divert our management and business development resources. Any inability to manage growth could delay the execution of our business plans or disrupt our operations.

In addition, future growth imposes significant added responsibilities on members of management, including: identifying, recruiting, integrating, maintaining, and motivating additional employees; managing our internal development efforts effectively, including the clinical and FDA review process for our product candidates, while complying with our contractual obligations to contractors and other third parties; and improving and scaling our operational, financial and management controls, reporting systems and procedures.

We currently rely on certain independent organizations, advisors, and consultants to provide certain services, including strategic, financial, business development, and research and development services, as well as certain aspects of regulatory approval and manufacturing. There can be no assurance that the services of independent organizations, advisors, and consultants will continue to be available to us on a timely basis when needed, or that we can find qualified replacements. In addition, if we are unable to effectively manage our outsourced activities or if the quality or accuracy of the services provided by consultants or contract manufacturing organizations is compromised for any reason, our clinical trials may be extended, delayed, or terminated, and we may not be able to obtain regulatory approval of our product candidates or otherwise advance our business. There can be no assurance that we will be able to manage our existing consultants or find other competent outside contractors and consultants on reasonable terms, or at all.

Our ability to develop product candidates, leverage our precision neuroscience approach and our future growth depends on attracting, hiring and retaining our key personnel and recruiting additional qualified personnel.

Our success depends upon the continued contributions of our key management and scientific personnel, many of whom have been instrumental for us and have substantial experience with developing therapies, identifying potential product candidates and building the technologies related to the clinical development of our product candidates. Given the specialized nature of brain diseases and our approach, there is an inherent scarcity of experienced personnel in these fields. As we continue developing our product candidates in our pipeline, we will require personnel with medical, scientific, or technical qualifications specific to each program. The loss of key personnel, in particular our neuroscientists, would delay our research and development activities. Despite our efforts to retain valuable employees, members of our team may terminate their employment with us on short notice. The competition for qualified personnel in the biotechnology and biopharmaceutical industries is intense, and our future success depends upon our ability to attract, retain, and motivate highly skilled scientific, technical and managerial employees. We face competition for personnel from other companies, universities, public and private research institutions, and other organizations. If our recruitment and retention efforts are unsuccessful in the future, it may be difficult for us to implement our business strategy, which would have a material adverse effect on our business.

In addition, our clinical operations and research and development programs depend on our ability to attract and retain highly skilled scientists, data scientists, and engineers, particularly in Massachusetts and California.

There is powerful competition for skilled personnel in these geographical markets, and we have from time to time experienced, and we expect to continue to experience, difficulty in hiring and retaining employees with appropriate qualifications on acceptable terms, or at all. Many of the companies with which we compete for experienced personnel have greater resources than we do, and any of our employees may terminate their employment with us at any time. If we hire employees from competitors or other companies, their former employers may attempt to assert that these employees or we have breached legal obligations, resulting in a diversion of our time and resources and, potentially, damages. In addition, job candidates and existing employees often consider the value of the stock awards they receive in connection with their employment. If the perceived benefits of our stock awards decline, it may harm our ability to recruit and retain highly skilled employees. If we fail to attract new personnel or fail to retain and motivate our current personnel, our business and future growth prospects would be harmed.

We may not realize the benefits of assets that we have acquired, or will acquire in the future, or other strategic transactions that we have or will consummate.

Our approach represents an aggregation of innovation and assets from multiple companies and academic institutions, including BlackThorn, Syllable and Alairion as well as Amgen, TSRI and Vanderbilt. Further, a key component of our strategy is to acquire and in-license assets and technologies to support the growth of our product pipeline and to enhance our Precision Toolbox. As such, we actively evaluate various strategic transactions on an ongoing basis. We may acquire other assets, businesses, products or technologies, as well as pursue joint ventures or investments in complementary businesses. The success of our strategic transactions and any future strategic transactions depends on the risks and uncertainties involved including:

- unanticipated liabilities related to acquired companies or joint ventures;
- difficulties integrating acquired personnel, technologies, and operations into our existing business;
- retention of key employees;
- diversion of management time and focus from operating our business to the management of acquisition and integration efforts, strategic alliances or joint ventures challenges;
- increases in our expenses and reductions in our cash available for operations and other uses;
- disruption in our relationships with collaborators or suppliers; and
- possible write-offs or impairment charges relating to acquired businesses or joint ventures.

If any of these risks or uncertainties occur, we may not realize the anticipated benefit of any acquisition or strategic transaction. For example, less than one year following the acquisition of Propellex, we terminated and are no longer developing the program we acquired from Propellex. We have ceased the development of our NMRA-094 product candidate for the treatment of obstructive sleep apnea (OSA) that we acquired from Alairion based on pre-IND feedback we received from the FDA. Additionally, foreign acquisitions and joint ventures are subject to additional risks, including those related to integration of operations across different cultures and languages, currency risks, potentially adverse tax consequences of overseas operations and the particular economic, political and regulatory risks associated with specific countries.

Future acquisitions or dispositions could result in potentially dilutive issuances of our equity securities, the incurrence of debt, contingent liabilities or amortization expenses, impairments or write-offs of goodwill or impairments and write-offs of in-process research and development assets, any of which could harm our financial condition.

We have relied on, and in the future will continue to rely on, third-party datasets and databases to build and enhance our precision neuroscience approach. If we are not able to access additional data sets or develop enhancements to our precision neuroscience approach, our ability to execute on our strategy may be limited.

Our ability to execute on our drug development strategy depends in part on our ability to enhance and improve our precision neuroscience approach. As part of this approach, we interrogate public, partnered and proprietary datasets across neuropsychiatric and neurodegenerative diseases, currently encompassing genetic, imaging, electroencephalogram (EEG), digital and clinical data. We rely on these datasets and data analytics for identifying or validating some of our biomarker-target relationships. The success of our precision neuroscience approach and any enhancement to our approach depends on several factors, including access to and generation of additional multimodal patient datasets, whether public, partnered or proprietary, development of more advanced proprietary machine learning capabilities and increased computational storage and processing capacity. If we are unable to access additional datasets or they are not available on acceptable terms, or if we are otherwise unsuccessful in enhancing our approach, we may be limited in our precision neuroscience capabilities and not be able to fully utilize a precision neuroscience drug development strategy.

In addition, access to public data sets may be limited by governmental or other restrictions, including restrictions on commercial application by government or government sponsored organizations or privacy related restrictions. See the risk factor "We face potential liability related to the privacy of health information we utilize in the development of product candidates, as well as information we obtain from clinical trials sponsored by us from research institutions and directly from individuals" for additional information on privacy related considerations.

We operate in highly competitive and rapidly changing industries, which may result in others discovering, developing or commercializing competing products before or more successfully than we do.

The biotechnology and biopharmaceutical industries are highly competitive and subject to significant and rapid technological change. Our success is highly dependent on our ability to discover, develop and obtain marketing approval for new and innovative products on a cost-effective basis and to market them successfully. In doing so, we face and will continue to face intense competition from a variety of businesses, including large biopharmaceutical and biotechnology companies, academic institutions, government agencies and other public and private research organizations. These organizations may have significantly greater resources than we do and conduct similar research, seek patent protection and establish collaborative arrangements for research, development, manufacturing, and marketing of products that compete with our product candidates. Mergers and acquisitions in the biotechnology and biopharmaceutical industries may result in even more resources being concentrated in our competitors. Competition may increase further as a result of advances in the commercial applicability of technologies and greater availability of capital for investment in these industries.

With the proliferation of new drugs and therapies for our target indications, we expect to face increasingly intense competition as new technologies become available. If we fail to stay at the forefront of technological change, we may be unable to compete effectively. Any product candidates that we successfully develop and commercialize will compete with existing therapies and new therapies that may become available in the future. The highly competitive nature of and rapid technological changes in the biotechnology and biopharmaceutical industries could render our product candidates or our technology obsolete, less competitive or uneconomical. Our competitors may, among other things:

- have significantly greater financial, manufacturing, marketing, drug development, technical, and human resources than we do;
- develop and commercialize products that are safer, more effective, less expensive, more convenient or easier to administer, or have fewer or less severe side effects;
- obtain quicker regulatory approval;
- establish superior proprietary positions covering our products and technologies;
- implement more effective approaches to sales and marketing; or
- form more advantageous strategic alliances.

Should any of these factors occur, our business, financial condition and results of operations could be materially adversely affected.

In addition, any collaborators may decide to market and sell products that compete with the product candidates that we have agreed to license to them, and any competition by our collaborators could also have a material adverse effect on our future business, financial condition, and results of operations.

Smaller and other early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These third parties compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and patient registration for clinical trials, as well as in developing or acquiring technologies complementary to, or necessary for, our programs.

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

Because we have limited financial and managerial resources, we focus on research programs, therapeutic platforms, and product candidates that we identify for specific indications. Additionally, we have contractual commitments under the agreements for various product candidate assets that we acquired from third parties, as well as our license and collaboration agreements, to use commercially reasonable efforts to develop certain programs and, thus, do not have unilateral discretion to vary from such agreed to efforts. In addition, we have contractual commitments to conduct certain development plans, and thus may not have discretion to modify such development plans, including clinical trial designs, without agreement from our collaboration partner. As a result, we may forego or delay pursuit of opportunities with other therapeutic platforms or product candidates or for other indications that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. Our spending on current and future research and development programs, therapeutic platforms, and product candidates

for specific indications may not yield any commercially viable products. If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through collaboration, licensing, or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights.

We rely upon third-party providers of cloud-based infrastructure to host our platforms. Any disruption in the operations of these third-party providers, limitations on capacity, or interference with our use could adversely affect our business, financial condition, and results of operations.

We outsource substantially all of the technological infrastructure relating to our hosted platform to third-party hosting services, such as Amazon Web Services. We have no control over any of these third parties, and while we attempt to reduce risk by minimizing reliance on any single third party or its operations, we cannot guarantee that such third-party providers will not experience system interruptions, outages or delays, or deterioration in their performance. We need to be able to access our computational platform at any time, without interruption or degradation of performance. Our hosted platform depends on protecting the virtual cloud infrastructure hosted by third-party hosting services by maintaining its configuration, architecture, features, and interconnection specifications, as well as protecting the information stored in these virtual data centers, which is transmitted by third-party Internet service providers. We have experienced and expect that in the future we may again experience interruptions, delays and outages in service and availability from time to time due to a variety of factors, including infrastructure changes, human or software errors, website hosting disruptions and capacity constraints. Any limitation on the capacity of our third-party hosting services could adversely affect our business, financial condition, and results of operations. In addition, any incident affecting our third-party hosting services' infrastructure that may be caused by cyber-attacks, natural disasters, fire, flood, severe storm, earthquake, power loss, telecommunications failures, terrorist or other attacks, and other disruptive events beyond our control could negatively affect our cloud-based solutions. A prolonged service disruption affecting our cloud-based solutions could damage our reputation or otherwise harm our business. We may also incur significant costs for using alternative equipment or taking other actions in preparation for, or in reaction to, events that damage the third-party hosting services we use.

In the event that our service agreements with our third-party hosting services are terminated, or there is a lapse of service, elimination of services or features that we utilize, interruption of internet service provider connectivity, or damage to such facilities, we could experience interruptions in access to our platform as well as significant delays and additional expense in arranging or creating new facilities and services and/or re-architecting our hosted software solutions for deployment on a different cloud infrastructure service provider, which could adversely affect our business, financial condition, and results of operations.

If our security measures are breached or unauthorized access to our other data is otherwise obtained, our data may be perceived as not being secure and we may incur significant liabilities.

We use a set of proprietary tools to generate, analyze, and derive novel insights from our data. As a result, unauthorized access to or security breaches of our data, as a result of third-party action, employee or contractor error, malfeasance, or otherwise could require notification to individuals, governmental authorities, supervisory bodies, the media and other parties pursuant to privacy and security laws and result in the loss or corruption of, or other damage to information, claims and litigation, indemnity obligations, damage to our reputation, and other liability. Our collaborators and other third parties we work with may also suffer similar security breaches of data that we rely on. Because the techniques used to obtain unauthorized access or sabotage systems change frequently and generally are not identified until they are launched against a target, we and those we collaborate with may be unable to anticipate these techniques or implement adequate preventative measures. 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. In addition, if our employees or contractors fail to adhere to practices we have established to maintain a firewall between our internal drug discovery team and our teams that work with external individuals, including our collaborators, or if the technical solutions we have adopted to maintain the firewall malfunction, our collaborators may lose confidence in our ability to maintain the confidentiality of their intellectual property, we may have trouble attracting new collaborators, we may be subject to breach of contract claims by our collaborators, and we may suffer reputational and other harm as a result. Federal, state and foreign laws and regulations may also expose us to enforcement actions and investigations by regulatory authorities, and potentially result in regulatory penalties, fines and significant legal liability, if our information technology security efforts fail. Any or all of these issues could result in reputational damage or subject us to third-party lawsuits or other action or liability, which could adversely affect our operating results and the further development and commercialization of our products. Our insurance may not be adequate to cover losses associated with such events, and in any case, such insurance may not cover all of the types of costs, expenses, and losses we could incur to respond to and remediate a security breach.

Our precision neuroscience tools utilize third-party open source software, and any failure to comply with the terms of one or more of these open source software licenses could adversely affect our business, subject us to litigation, or create potential liability.

Our precision neuroscience tools include software licensed by third parties under any one or more open source licenses, and we expect to continue to incorporate open source software in our precision neuroscience tools in the future. While we have a process in place for monitoring the use of open source software by our employees, we cannot ensure we are aware of every instance of such use or have validated the quality or source of such software, or that we are in compliance with the terms of the applicable open source licenses or our current policies and procedures. There have been claims against companies that use open source software in their products and services asserting that the use of such open source software infringes the claimants' intellectual property rights. As a result, we could be subject to suits by third parties claiming that what we believe to be licensed open source software infringes such third parties' intellectual property rights. Additionally, if an author or other third party that distributes such open source software were to allege that we had not complied with the conditions of one or more of these licenses, we could be required to incur significant legal expenses defending against such allegations and could be subject to significant damages and required to comply with onerous conditions or restrictions on these solutions, which could disrupt the distribution and sale of these solutions. Litigation could be costly for us to defend, have a negative effect on our business, financial condition, and results of operations, or require us to devote additional research and development resources to change our precision neuroscience tools. Furthermore, these third-party open source providers could experience service outages, data loss, privacy breaches, cyber-attacks, and other events relating to the applications and services they provide that could diminish the utility of these services and which could harm our business as a result.

Use of open source software may entail greater risks than use of third-party commercial software, as open source licensors generally do not provide warranties or other contractual protections regarding infringement claims or the quality of the code, including with respect to security vulnerabilities where open source software may be more susceptible. In addition, certain open source licenses require that source code for software programs that interact with such open source software be made available to the public at no cost and that any modifications or derivative works to such open source software continue to be licensed under the same terms as the open source software license. The terms of various open source licenses to which we are subject have not been interpreted by courts in the relevant jurisdictions, and there is a risk that such licenses could be construed in a manner that imposes unanticipated conditions or restrictions on our ability to market or provide our software and data. By the terms of certain open source licenses, we could be required to release the source code of our proprietary software, and to make our proprietary software available under open source licenses, if we combine our proprietary software with open source software in a certain manner. In the event that portions of our proprietary software are determined to be subject to an open source license, we could be required to publicly release the affected portions of our source code, re-engineer all or a portion of our precision neuroscience tools, or otherwise be limited in the licensing of our precision neuroscience tools, each of which could reduce or eliminate the value of our precision neuroscience tools. Disclosing our proprietary source code could allow our competitors to create similar products with lower development effort and time and ultimately could result in a loss of sales. Furthermore, any such re-engineering or other remedial efforts could require significant additional research and development resources, and we may not be able to successfully complete any such re-engineering or other remedial efforts. Any of these events could create liability for us and damage our reputation, which could have a material adverse effect on our revenue, business, results of operations, and financial condition and the market price of our shares.

Risks Related to the Development and Clinical Testing of Our Product Candidates

Clinical and preclinical drug development is a lengthy and expensive process, with an uncertain outcome. Our clinical and preclinical programs have experienced delays and may experience additional delays or may never advance, which would adversely affect our ability to obtain regulatory approvals or commercialize our product candidates on a timely basis or at all, which could have an adverse effect on our business.

In order to obtain FDA approval to market our product candidates, 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. Conducting preclinical testing and clinical trials represents a lengthy, time-consuming and expensive process. The length of time may vary substantially according to the type, complexity and novelty of the program, and often can be several years or more per program. Delays associated with programs for which we are directly conducting preclinical studies may cause us to incur additional operating expenses. The commencement and rate of completion of preclinical studies and clinical trials for a product candidate may be delayed by many factors, including, but not limited to:

- inability to generate sufficient preclinical or other *in vivo* or *in vitro* data to support the initiation of clinical studies;
- timely completion of preclinical laboratory tests, animal studies and formulation studies in accordance with FDA's Good Laboratory Practice (GLP) requirements and other applicable regulations;
- approval by an independent Institutional Review Board (IRB) or ethics committee at each clinical site before each trial may be initiated;

- delays in reaching a consensus with regulatory agencies on study design and obtaining regulatory authorization to commence clinical trials; delays in reaching agreement on acceptable terms with prospective contract research organizations (CROs), and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and clinical trial sites;
- delays in identifying, recruiting and training suitable clinical investigators;
- delays in recruiting suitable patients to participate in our clinical trials;
- delays in manufacturing, testing, releasing, validating or importing/exporting sufficient stable quantities of our product candidates for use in clinical trials or the inability to do any of the foregoing;
- insufficient or inadequate supply or quality of product candidates or other materials necessary for use in clinical trials, or delays in sufficiently developing, characterizing or controlling a manufacturing process suitable for clinical trials;
- imposition of a temporary or permanent clinical hold by regulatory authorities;
- developments on trials conducted by competitors for related technology that raises FDA or foreign regulatory authority concerns about risk to patients of the technology broadly, or if the FDA or a foreign regulatory authority finds that the investigational protocol or plan is clearly deficient to meet its stated objectives;
- delays in recruiting, screening and enrolling patients and delays caused by patients withdrawing from clinical trials or failing to return for post-treatment follow-up;
- difficulty collaborating with patient groups and investigators;
- failure by our CROs, other third parties or us to adhere to clinical trial protocols; failure to perform in accordance with the FDA's or any other regulatory authority's good clinical practice (GCP) requirements, or applicable regulatory guidelines in other countries;
- occurrence of adverse events associated with the product candidate that are viewed to outweigh its potential benefits, or occurrence of adverse events in trial of the same class of agents conducted by other companies;
- changes to the clinical trial protocols;
- clinical sites deviating from trial protocol or dropping out of a trial;
- changes in regulatory requirements and guidance that require amending or submitting new clinical protocols;
- changes in the standard of care on which a clinical development plan was based, which may require new or additional trials;
- selection of clinical endpoints that require prolonged periods of observation or analyses of resulting data;
- the cost of clinical trials of our product candidates being greater than we anticipate;
- clinical trials of our product candidates producing negative or inconclusive results, which may result in our deciding, or regulators requiring us, to conduct additional clinical trials or abandon development of such product candidates;
- transfer of manufacturing processes to larger-scale facilities operated by a contract manufacturing organization (CMO) and delays or failure by our CMOs or us to make any necessary changes to such manufacturing process; and
- third parties being unwilling or unable to satisfy their contractual obligations to us.

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. For example, nonclinical safety pharmacology studies of NMRA-511 indicate that the dose limiting toxicities were CNS observations including tremor and convulsions, which led to a partial clinical hold on our IND that was removed when we amended the protocol to include tremors as a stopping criterion. 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, conducting clinical trials in foreign countries, as we may do for our product candidates, 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 relevant to such foreign countries.

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

Delays in the completion of any preclinical studies or clinical trials of our product candidates will increase our costs, slow down our product candidate development and approval process and delay or potentially jeopardize our ability to commence product sales and generate product revenue. In addition, many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of our product candidates. Any delays to our preclinical studies or 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.

In addition, the FDA's and other regulatory authorities' policies with respect to clinical trials may change and additional government regulations may be enacted. For instance, the regulatory landscape related to clinical trials in the EU recently evolved. The EU Clinical Trials Regulation (CTR) which was adopted in April 2014 and repeals the EU Clinical Trials Directive, became applicable on January 31, 2022. While the Clinical Trials Directive required a separate clinical trial application (CTA), to be submitted in each member state in which the clinical trial takes place, to both the competent national health authority and an independent ethics committee, the CTR introduces a centralized process and only requires the submission of a single application for multi-center trials. The CTR allows sponsors to make a single submission to both the competent authority and an ethics committee in each member state, leading to a single decision per member state. The assessment procedure of the CTA has been harmonized as well, including a joint assessment by all member states concerned, and a separate assessment by each member state with respect to specific requirements related to its own territory, including ethics rules. Each member state's decision is communicated to the sponsor via the centralized EU portal. Once the CTA is approved, clinical study development may proceed. The CTR foresees a three-year transition period. The extent to which ongoing and new clinical trials will be governed by the CTR varies. Clinical trials for which an application was submitted (i) prior to January 31, 2022 under the Clinical Trials Directive, or (ii) between January 31, 2022 and January 31, 2023 and for which the sponsor has opted for the application of the EU Clinical Trials Directive remain governed by said Directive until January 31, 2025. After this date, all clinical trials (including those which are ongoing) will become subject to the provisions of the CTR. Compliance with the CTR requirements by us and our third-party service providers, such as Contract research organizations (CRO), may impact our developments plans.

It is currently unclear to what extent the UK will seek to align its regulations with the EU. The UK regulatory framework in relation to clinical trials is derived from existing EU legislation (as implemented into UK law, through secondary legislation).

On January 17, 2022, the UK Medicines and Healthcare products Regulatory Agency (MHRA), launched an eight-week consultation on reframing the UK legislation for clinical trials. The UK Government published its response to the consultation on March 21, 2023 confirming that it would bring forward changes to the legislation. These resulting legislative amendments will determine how closely the UK regulations are aligned with the CTR. A decision by the UK not to closely align its regulations with the new approach adopted in the EU may have an effect on the cost of conducting clinical trials in the UK as opposed to other countries.

If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies governing clinical trials, our development plans may be impacted.

Results of preclinical studies or clinical trials of any product candidates may not be predictive of the results of future preclinical studies or clinical trials.

To obtain the requisite regulatory approvals to market and sell any of our product candidates, we or any collaborator for such product candidate must demonstrate through extensive preclinical studies and clinical trials that the product candidate is safe and effective in humans. Before an IND can be submitted to the FDA and become effective, which is a prerequisite for conducting clinical trials on human subjects in the United States, a product candidate must successfully progress through extensive preclinical studies, which include

preclinical laboratory testing, animal studies, and formulation studies, certain of which must be conducted in accordance with GLP. We cannot be certain of the timely completion or outcome of any preclinical studies. We also cannot predict if the FDA or comparable regulatory authorities will allow our proposed clinical programs to proceed or if the outcome of our preclinical studies will ultimately support further development of our programs. Additionally, we cannot be sure that we will be able to submit INDs or similar applications with respect to our product candidates on the timelines we expect, if at all, and we cannot be sure that submission of IND or similar applications will result in the FDA or other regulatory authorities allowing clinical trials to begin.

Moreover, success in preclinical studies or early clinical trials does not ensure that later preclinical studies or clinical trials will be successful. A number of companies in the biotechnology and biopharmaceutical industries have suffered significant setbacks in clinical trials, even after positive results in earlier preclinical studies. These setbacks have been caused by, among other things, preclinical findings made while clinical trials were underway and safety or efficacy observations made in clinical trials, including previously unreported adverse events. The design of a clinical trial can determine whether its results will support approval of a product, and flaws in the design of a clinical trial may not become apparent until the clinical trial is well advanced. In addition, clinical and preclinical data are often susceptible to varying interpretations and analyses. Notwithstanding any potential promising results in earlier studies, we cannot be certain that we will not face similar setbacks. In addition, the results of our preclinical animal studies, including our non-human primate studies, may not be predictive of the results of outcomes in subsequent clinical trials on human subjects. Product candidates in clinical trials may fail to show the desired pharmacological properties or safety and efficacy traits despite having progressed through preclinical studies.

If we fail to receive positive results in preclinical studies or clinical trials of any product candidate, the development timeline and regulatory approval and commercialization prospects for that product candidate, and, correspondingly, our business and financial prospects, would be negatively impacted.

Our product candidates may have serious adverse, undesirable, or unacceptable side effects or other properties that may delay or prevent marketing approval. If such side effects are identified following approval, if any, the commercial profile of any approved label may be limited, or we may be subject to other significant negative consequences following marketing approval, if any.

Results of our clinical trials could reveal a high and unacceptable severity and prevalence of side effects or unexpected characteristics. Undesirable side effects that may be caused by our product candidates could cause us or regulatory authorities to interrupt, delay, or halt clinical trials and could result in a more restrictive label or the delay or denial of regulatory approval by the FDA or comparable foreign 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 preclinical studies or clinical trials. For example, in a rat study, at its highest dose (100 mg/kg/day) navacaprant was observed to have skin-related phototoxicity of erythema, edema and flaking additionally ocular phototoxicity (corneal edema). While no phototoxicity has been observed in our Phase 1 clinical trials, we monitored visual acuity and corneal integrity in our Phase 2 clinical trial to confirm there was no phototoxicity in humans. Though we did not observe any phototoxicity effects in our Phase 2 clinical trial, if phototoxicity is experienced in our later-stage clinical trials, the labeling implications of such safety warnings may limit any future product sales, if navacaprant is approved.

Further, clinical trials by their nature utilize a sample of the potential patient population. With a limited number of patients and limited duration of exposure, rare and severe side effects of our product candidates may only be uncovered with a significantly larger number of patients exposed to the product candidate. 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 the event that any of our product candidates receives marketing approval and we or others later identify undesirable or unacceptable side effects caused by such products, a number of potentially significant negative consequences could result, including:

- regulatory authorities may withdraw or limit approvals of such products and require us to take our approved product off the market;
- regulatory authorities may require the addition of labeling statements, specific warnings, a contraindication or field alerts to physicians and pharmacies, or issue other communications containing warnings or other safety information about the product;

- regulatory authorities may require a medication guide outlining the risks of such side effects for distribution to patients, or that we implement a risk evaluation and mitigation strategy (REMS), plan to ensure that the benefits of the product outweigh its risks;
- we may be required to change the dose or the way the product is administered, conduct additional clinical trials, or change the labeling of the product;
- we may be subject to limitations on how we may promote or manufacture the product;
- sales of the product may decrease significantly;
- we may be subject to litigation or product liability claims; and
- our reputation may suffer.

Any of these events could prevent us or our potential future partners from achieving or maintaining market acceptance of the affected product or could substantially increase commercialization costs and expenses, which in turn could delay or prevent us from generating significant revenue from the sale of any products.

Interim, topline, or preliminary data from our clinical trials that we announce or publish from time to time may change as more patient data becomes available or as we make changes to our manufacturing processes 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 preliminary or topline data from our preclinical studies and clinical trials, which is based on a preliminary analysis of then-available data, and the results and related findings and conclusions are subject to change following a more comprehensive review of the data related to the particular study or trial. We also make assumptions, estimations, calculations and conclusions as part of our analyses of data, and we may not have received or had the opportunity to fully and carefully evaluate all data. As a result, the topline or preliminary results that we report may differ from future results of the same studies, or different conclusions or considerations may qualify such results, once additional data have been received and fully evaluated. Topline and preliminary data also remain subject to audit and verification procedures that may result in the final data being materially different from the topline or preliminary data we previously published. As a result, topline and preliminary data should be viewed with caution until the final data are available.

From time to time, we may also disclose interim data from our preclinical studies and 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 data and final data could significantly harm our business prospects. Further, disclosure of interim data by us or by our competitors could result in volatility in the price of our common stock.

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 company 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 material or otherwise appropriate information to include in our disclosure. 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 vaccine candidates may be harmed, which could harm our business, prospects, financial condition or results of operations.

We will depend on enrollment and retention of patients in our clinical trials for our product candidates. If we experience delays or difficulties enrolling or retaining patients in our clinical trials, our research and development efforts and business, financial condition and results of operations could be materially adversely affected.

Successful and timely completion of clinical trials will require that we enroll and retain a sufficient number of patient candidates. Any clinical trials we conduct may be subject to delays for a variety of reasons, including as a result of patient enrollment taking longer than anticipated, patient withdrawal or adverse events. These types of developments could cause us to delay the trial or halt further development.

Our clinical trials will compete with other clinical trials that are in the same therapeutic areas as our product candidates, and this competition reduces the number and types of patients available to us, as some patients who might have opted to enroll in our trials may instead opt to enroll in a trial being conducted by one of our competitors.

Because the number of qualified clinical investigators and clinical trial sites is limited, we expect to conduct some of our clinical trials at the same clinical trial sites that some of our competitors use, which will reduce the number of patients who are available for our

clinical trials at such clinical trial sites. The eligibility criteria of our clinical studies, and in particular, any eligibility criteria we may establish using our precision neuroscience approach, may limit the pool of available study participants as we will require that patients have specific characteristics that we can measure or to assure their disease is either severe enough or not too advanced to include them in a study.

Patient enrollment depends on many factors, including:

- the size and nature of the patient population;
- the severity of the disease under investigation;
- eligibility criteria for the trial;
- the proximity of patients to clinical sites;
- the design of the clinical protocol;
- the ability to obtain and maintain patient consents;
- the ability to recruit clinical trial investigators with the appropriate competencies and experience;
- the risk that patients enrolled in clinical trials will drop out of the trials before the administration of our product candidates or trial completion;
- the availability of competing clinical trials;
- the availability of new drugs approved for the indication the clinical trial is investigating; and
- clinicians' and patients' perceptions as to the potential advantages of the drug being studied in relation to other available therapies.

These factors may make it difficult for us to enroll enough patients to complete our clinical trials in a timely and cost-effective manner. Delays in the completion of any clinical trial of our product candidates will increase our costs, slow down our product candidate development and approval process, and delay or potentially jeopardize our ability to commence product sales and generate revenue. In addition, some of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of our product candidates.

The estimates of market opportunity and forecasts of market growth included in our public disclosures may prove to be smaller than we believe, and even if the markets in which we compete achieve the forecasted growth, our business may not grow at similar rates, or at all.

We intend to initially focus our product candidate development on treatments for various neuropsychiatric disorders and neurodegenerative diseases. Our projections of addressable patient populations within any particular disease state that may benefit from treatment with our product candidates are based on our estimates. Market opportunity estimates and growth forecasts included in our public disclosures are subject to significant uncertainty and are based on assumptions and estimates. These estimates, which have been derived from a variety of sources, including scientific literature, surveys of clinics, patient foundations, and market research, may prove to be incorrect. Further, new studies may change the estimated incidence or prevalence of these diseases. Additionally, the potentially addressable patient population for our product candidates may not ultimately be amenable to treatment with our product candidates. Our market opportunity may also be limited by future competitor treatments that enter the market. If any of our estimates prove to be inaccurate, the market opportunity for any product candidate that we or our strategic partners develop could be significantly diminished and have an adverse material impact on our business.

Even if approved, our products may not gain market acceptance, in which case we may not be able to generate product revenues, which will materially adversely affect our business, financial condition, and results of operations.

Even if the FDA or any comparable foreign regulatory authority approves the marketing of any product candidates that we develop, physicians, healthcare providers, patients, or the medical community may not accept or use them. Additionally, the product candidates that we are developing are based on our proprietary approach, which are new technologies. If these products do not achieve an adequate level of acceptance, we may not generate significant product revenues or any profits from operations. The degree of market acceptance of any of our product candidates will depend on a variety of factors, including:

- the timing of market introduction of the product candidate as well as competitive products;
- the clinical indications for which a product candidate is approved;
- the terms of any approvals and the countries in which approvals are obtained;

- the number and clinical profile of competing products;
- the potential and perceived advantages of our product candidates over alternative treatments;
- our ability to provide acceptable evidence of safety and efficacy;
- the prevalence and severity of any side effects;
- the availability of an approved product candidate for use as a combination therapy;
- relative convenience and ease of administration;
- cost-effectiveness;
- patient diagnostics and screening infrastructure in each market;
- the effectiveness of sales and marketing efforts;
- approval of other new therapies for the same indications;
- marketing and distribution support;
- adverse publicity about our product candidates;
- availability of coverage, adequate reimbursement and sufficient payment from health maintenance organizations and other insurers, both public and private, for our product candidates, or the procedures utilizing our product candidates, if approved;
- the willingness of patients to pay out-of-pocket in the absence of coverage by third-party payors and government authorities; and
- other potential advantages over alternative treatment methods.

If our product candidates fail to gain market acceptance, this will have a material adverse impact on our ability to generate revenues to provide a satisfactory, or any, return on our investments. Even if some products achieve market acceptance, the market may prove not to be large enough to allow us to generate significant revenues.

We currently have no marketing, sales, or distribution infrastructure and we intend to either establish a sales and marketing infrastructure or outsource this function to a third party. Either of these commercialization strategies carries substantial risks to us.

Given our stage of development, we currently have no marketing, sale, and distribution capabilities. If any of our product candidates complete clinical development and are approved, we intend to either establish a sales and marketing organization with technical expertise and supporting distribution capabilities to commercialize our product candidates in a legally compliant manner, or to outsource this function to a third party. There are risks involved if we decide to establish our own sales and marketing capabilities or enter into arrangements with third parties to perform these services. To the extent that we enter into collaboration agreements with respect to marketing, sales or distribution, our product revenue may be lower than if we directly marketed or sold any approved products. Such collaborative arrangements with partners may place the commercialization of our products outside of our control and would make us subject to a number of risks including that we may not be able to control the amount or timing of resources that our collaborative partner devotes to our products or that our collaborator's willingness or ability to complete its obligations, and our obligations under our arrangements may be adversely affected by business combinations or significant changes in our collaborator's business strategy.

If we are unable to enter into these arrangements on acceptable terms or at all, we may not be able to successfully commercialize any approved products. If we are not successful in commercializing any approved products, either on our own or through collaborations with one or more third parties, our future product revenue will suffer and we may incur significant additional losses, which would have a material adverse effect on our business, financial condition, and results of operations.

We may become exposed to costly and damaging liability claims, either when testing our product candidates in the clinic or at the commercial stage, and our product liability insurance may not cover all damages from such claims.

We are exposed to potential product liability and professional indemnity risks that are inherent in the research, development, manufacturing, marketing, and use of biopharmaceutical products. While we currently have no products that have been approved for commercial sale, the future use of product candidates by us in clinical trials, and the sale of any approved products in the future, may expose us to liability claims. These claims might be made by patients that use the product, healthcare providers, pharmaceutical companies, or others selling such products. Any claims against us, regardless of their merit, could be difficult and costly to defend and could materially adversely affect the market for our product candidates or any prospects for commercialization of our product candidates.

Although the clinical trial process is designed to identify and assess potential side effects, it is always possible that a drug, even after regulatory approval, may exhibit unforeseen side effects. If any of our product candidates were to cause adverse side effects during clinical trials or after approval of the product candidate, we may be exposed to substantial liabilities. Physicians and patients may not comply with any warnings that identify known potential adverse effects and patients who should not use our product candidates.

Even successful defense against product liability claims would require significant financial and management resources. Regardless of the merits or eventual outcome, liability claims may result in: decreased demand for our product candidates; injury to our reputation; withdrawal of clinical trial participants; initiation of investigations by regulators; costs to defend the related litigation; a diversion of management's time and our resources; substantial monetary awards to trial participants or patients; product recalls, withdrawals or labeling, marketing or promotional restrictions; loss of revenue; exhaustion of any available insurance and our capital resources; the inability to commercialize any product candidate; and a decline in our share price.

Although we maintain adequate product liability insurance for our product candidates, it is possible that our liabilities could exceed our insurance coverage. We intend to expand our insurance coverage to include the sale of commercial products if we obtain marketing approval for any of our product candidates. However, we may be unable to maintain insurance coverage at a reasonable cost or obtain insurance coverage that will be adequate to satisfy any liability that may arise. If a successful product liability claim or series of claims is brought against us for uninsured liabilities or in excess of insured liabilities, our assets may not be sufficient to cover such claims, and our business operations could be impaired.

Risks Related to Our Regulatory Environment

The development and commercialization of drug products is subject to extensive regulation, and the regulatory approval processes of the FDA and comparable foreign authorities are lengthy, time-consuming, and inherently unpredictable. If we are ultimately unable to obtain regulatory approval for our product candidates on a timely basis if at all, our business will be substantially harmed.

The clinical development, manufacturing, labeling, packaging, storage, recordkeeping, advertising, promotion, export, import, marketing, distribution, adverse event reporting, including the submission of safety and other post-marketing information and reports, and other possible activities relating to our product candidates are subject to extensive regulation. In the United States, obtaining marketing approval for a new drug requires the submission of a New Drug Application (NDA) to the FDA, and we are not permitted to market any product candidate in the United States until we obtain approval from the FDA of the NDA for that product candidate. An NDA must be supported by extensive clinical and preclinical data, as well as extensive information regarding pharmacology, chemistry, manufacturing, and controls. Outside the United States, many comparable foreign regulatory authorities employ similar approval processes.

We have not previously submitted an NDA to the FDA or similar marketing application to comparable foreign authorities, for any product candidate, and we cannot be certain that any of our product candidates will receive regulatory approval. Obtaining approval of an NDA can be a lengthy, expensive, and uncertain process, and as a company we have no experience with the preparation of an NDA submission or any other marketing application. In addition, the FDA has the authority to require a REMS as part of an NDA or after approval, which may impose further requirements or restrictions on the distribution or use of an approved drug, such as limiting prescribing to certain physicians or medical centers that have undergone specialized training, limiting treatment to patients who meet certain safe-use criteria and requiring treated patients to enroll in a registry.

Our product candidates could fail to receive regulatory approval for many reasons, including the following:

- the FDA or comparable foreign regulatory authorities may disagree with the design or implementation of our clinical trials;
- we may be unable to demonstrate to the satisfaction of the FDA or comparable foreign regulatory authorities that a product candidate is safe and effective for its proposed indication;
- the results of clinical trials may not meet the level of statistical significance required by the FDA or comparable foreign regulatory authorities for approval;
- we may be unable to demonstrate that a product candidate's clinical and other benefits outweigh its safety risks;
- the FDA or comparable foreign regulatory authorities may disagree with our interpretation of data from preclinical studies or clinical trials;
- the data collected from clinical trials of our product candidates may not be sufficient to support the submission of an NDA or other submission or to obtain regulatory approval in the United States or elsewhere, or regulatory authorities may not accept a submission due to, among other reasons, the content or formatting of the submission;
- the FDA or comparable foreign regulatory authorities may fail to approve our manufacturing processes or facilities or those of third-party manufacturers with which we contract for clinical and commercial supplies; and

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

This lengthy approval process, as well as the unpredictability of future clinical trial results, may result in our failing to obtain regulatory approval to market any of our product candidates, which would significantly harm our business, results of operations, and prospects. The FDA and comparable foreign regulatory authorities have substantial discretion in the approval process, and determining when or whether regulatory approval will be obtained for any of our product candidates. For example, regulatory authorities in various jurisdictions have in the past had, and may in the future have, differing requirements for, interpretations of and opinions on our clinical and preclinical data. As a result, we may be required to conduct additional preclinical studies, alter our proposed clinical trial designs, or conduct additional clinical trials to satisfy the regulatory authorities in each of the jurisdictions in which we hope to conduct clinical trials and develop and market our products, if approved. Further, even if we believe the data collected from clinical trials of our product candidates are promising, such data may not be sufficient to support approval by the FDA or any comparable foreign regulatory authority.

In addition, even if we were to obtain approval, regulatory authorities may approve any of our product candidates for fewer or more limited indications than we request, may not approve the price we intend to charge for our products, may grant approval contingent on the performance of costly post-marketing clinical trials, or may approve a product candidate with a label that does not include the labeling claims necessary or desirable for the successful commercialization of that product candidate. Any of the foregoing scenarios could materially harm the commercial prospects for our product candidates.

Furthermore, FDA and foreign regulatory authorities may change their approval policies and new regulations may be enacted. For instance, the EU pharmaceutical legislation is currently undergoing a complete review process, in the context of the Pharmaceutical Strategy for Europe initiative, launched by the European Commission in November 2020. The European Commission's proposal for revision of several legislative instruments related to medicinal products (potentially reducing the duration of regulatory data protection, revising the eligibility for expedited pathways, etc.) was published on April 26, 2023. The proposed revisions remain to be agreed and adopted by the European Parliament and European Council and the proposals may therefore be substantially revised before adoption, which is not anticipated before early 2026. The revisions may, however, have a significant impact on the pharmaceutical industry and our business in the long term.

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

If the FDA or a comparable foreign regulatory authority approves any of our product candidates, the manufacturing processes, testing, safety, efficacy, labeling, packaging, distribution, import, export, adverse event reporting, storage, advertising, promotion, and recordkeeping for the product will be subject to extensive and ongoing regulatory requirements. These requirements include submissions of safety and other post-marketing information and reports, registration, as well as continued compliance with current good manufacturing practices (cGMPs) and similar foreign requirements, and GCPs for any clinical trials that we conduct post-approval, all of which may result in significant expense and limit our ability to commercialize such products. In addition, any regulatory approvals that we receive for our product candidates may also be subject to limitations on the approved indicated uses for which the product may be marketed or to the conditions of approval, or contain requirements for potentially costly post-marketing testing, including Phase 4 clinical trials, and additional surveillance to monitor the safety and efficacy of the product candidate.

Manufacturers and manufacturers' facilities are required to comply with extensive FDA and comparable foreign regulatory authority requirements, including ensuring that quality control and manufacturing procedures conform to cGMP and similar foreign regulations. As such, we and our contract manufacturers will be subject to continual review and inspections to assess compliance with cGMP and adherence to commitments made in any approved marketing application. Accordingly, we and others with whom we work must continue to expend time, money, and effort in all areas of regulatory compliance, including manufacturing, quality control, and distribution.

If a regulatory agency discovers previously unknown problems with a product, such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, or disagrees with the promotion, marketing or labeling of a product, such regulatory agency may impose restrictions on that product or us, including requiring withdrawal of the product from the market. If we fail to comply with applicable regulatory requirements, a regulatory agency or enforcement authority may, among other things:

- issue warning letters or untitled letters;
- issue, or require us to issue, safety-related communications, such as safety alerts, field alerts, "Dear Doctor" letters to healthcare professionals, or import alerts;

- impose civil or criminal penalties;
- suspend, limit, or withdraw regulatory approval;
- suspend any of our preclinical studies and clinical trials;
- refuse to approve pending applications or supplements to approved applications;
- impose restrictions on our operations, including closing our and our contract manufacturers' facilities; or
- seize or detain products, refuse to permit the import or export of products, or require us to conduct a product recall.

Any government investigation of alleged violations of law could require us to expend significant time and resources in response and could generate adverse publicity. Any failure to comply with ongoing regulatory requirements may significantly and adversely affect our ability to commercialize and generate revenue from our products, if approved. If regulatory sanctions are applied or if regulatory approval is withdrawn, the value of our company and our operating results will be adversely affected.

Moreover, the policies of the FDA and of comparable foreign regulatory authorities may change and additional government regulations may be enacted that could prevent, limit, or delay regulatory approval of our product candidates. We cannot predict the likelihood, nature, or extent of government regulation that may arise from future legislation or administrative or executive 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 we are found or alleged to have improperly promoted off-label uses, we may become subject to significant liability.

The FDA and other regulatory agencies strictly regulate the promotional claims that may be made about drug products. These regulations include standards and restrictions for direct-to-consumer advertising, industry-sponsored scientific and educational activities, promotional activities involving the internet and off-label promotion. For example, any regulatory approval that the FDA grants is limited to those indications and patient populations for which a drug is deemed to be safe and effective by the FDA.

While physicians in the United States may choose, and are generally permitted, to prescribe products in their independent medical judgment for uses that are not described in the product's labeling and for uses that differ from those tested in clinical trials and approved by the regulatory authorities, our ability to promote any of our products candidates, if approved, will be narrowly limited to those indications and populations that are specifically approved by the FDA or such other regulatory agencies, and if we are found to have promoted such off-label uses, we may become subject to significant liability. For example, the federal government has levied large civil and criminal fines against companies for alleged improper promotion and has enjoined several companies from engaging in off-label promotion. The government has also required companies to 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.

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 as a result. 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. In addition, during the COVID-19 pandemic, the FDA postponed most inspections of domestic and foreign manufacturing facilities at various points. Even though the FDA has resumed standard inspection operations of domestic facilities where feasible, and any resurgence of COVID-19 or emergence of new variants may lead to further inspectional or administrative delays. If a prolonged government shutdown occurs, or if global health concerns continue to prevent the FDA or other regulatory authorities from conducting their regular 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 are subject to U.S. and certain foreign export and import controls, sanctions, embargoes, anti-corruption laws, and anti-money laundering laws and regulations. Compliance with these legal standards could impair our ability to compete in domestic and international markets. We can face criminal liability and other serious consequences for violations, which can 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, various economic and trade sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Controls, the U.S. Foreign Corrupt Practices Act of 1977, as amended (FCPA), 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, contractors, and other collaborators from authorizing, promising, offering, or providing, directly or indirectly, improper payments or anything else of value to recipients in the public or private sector. We may engage third parties to sell our products outside the United States, to conduct clinical trials, 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, contractors, and other collaborators, even if we do not explicitly authorize or have actual knowledge of such activities. 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.

Our research and development activities could be affected or delayed as a result of possible restrictions on animal testing.

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

Our business operations and current and future relationships with healthcare professionals, principal investigators, consultants, vendors, customers, and third-party payors in the United States and elsewhere are subject to applicable anti-kickback, fraud and abuse, false claims, physician payment transparency, and other healthcare laws and regulations, which could expose us to substantial penalties, contractual damages, reputation harm, administrative burdens, and diminished profits.

Healthcare providers, healthcare facilities and institutions and third-party payors in the United States and elsewhere will play a primary role in the recommendation and prescription of any product candidates for which we obtain marketing approval. Our current and future arrangements with healthcare professionals, healthcare facilities and institutions, principal investigators, consultants, customers, and third-party payors may expose us to broadly applicable fraud and abuse and other healthcare laws, including, without limitation, the federal Anti-Kickback Statute and the federal False Claims Act, that may constrain the business or financial arrangements and relationships through which we research, sell, market, and distribute any product candidates for which we obtain marketing approval. In addition, we may be subject to physician payment transparency laws and regulation by the federal government and by the states and foreign jurisdictions in which we conduct our business. The applicable federal, state, and foreign healthcare laws that affect our ability to operate include, but are not limited to, the following:

- 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 rebate), directly or indirectly, overtly or covertly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, lease, order or recommendation of, any good, facility, item or service, for which payment may be made, in whole or in part, under any U.S. federal healthcare program, such as Medicare and Medicaid. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;
- the U.S. federal civil and criminal false claims laws, including the civil False Claims Act, which prohibit, among other things, including through civil whistleblower or qui tam actions, individuals or entities from knowingly presenting, or causing to be presented, to the U.S. 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 a false statement to avoid, decrease, or conceal an obligation to pay money to the U.S. federal government. Pharmaceutical manufacturers can cause false claims to be presented to the U.S. federal government by, among other things, engaging in impermissible marketing practices, such as the off-label promotion of a product for an indication for which it has not received FDA approval. In addition, the government may assert that a claim including items and services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the civil False Claims Act;
- the federal Health Insurance Portability and Accountability Act of 1996 (HIPAA), 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 healthcare fraud statute implemented under HIPAA or specific intent to violate it in order to have committed a violation;

- the U.S. Physician Payments Sunshine Act and its implementing regulations, which requires, among other things, certain manufacturers of drugs and devices that are reimbursable under Medicare, Medicaid, or the Children's Health Insurance Program, with specific exceptions, to report annually to the Centers for Medicare and Medicaid Services, or CMS, information related to certain payments and other transfers of value to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors), other healthcare professionals (such as physician assistants and nurse practitioners), and teaching hospitals, as well as ownership and investment interests held by such physicians and their immediate family members;
- analogous U.S. state laws and regulations, including: state anti-kickback and false claims laws, which may apply to our business practices, including but not limited to, research, distribution, sales and marketing arrangements, and claims involving healthcare items or services reimbursed by any third-party payor, including private insurers; state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the U.S. federal government, or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state laws and regulations that require drug manufacturers to file reports relating to pricing and marketing information, which requires tracking gifts and other remuneration and items of value provided to healthcare professionals and entities; and state and local laws requiring the registration of pharmaceutical sales representatives; and
- similar healthcare laws and regulations in foreign jurisdictions, including reporting requirements detailing interactions with and payments to healthcare providers.

Ensuring that our internal operations and future business arrangements with third parties comply with applicable healthcare laws and regulations will involve substantial costs. It is not always possible to identify and deter employee misconduct or business noncompliance, and the precautions we take to detect and prevent inappropriate conduct may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. Efforts to ensure that our business arrangements will comply with applicable healthcare laws may involve substantial costs. We have entered into consulting and scientific advisory board arrangements with physicians and other healthcare providers, including some who could influence the use of our product candidates, if approved. Compensation under some of these arrangements includes the provision of stock or stock options in addition to cash consideration. Because of the complex and far-reaching nature of these laws, it is possible that governmental authorities could conclude that our payments to physicians may not be fair market value for *bona fide* services or that our business practices do not comply with current or future statutes, regulations, agency guidance 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 the laws described above or any other governmental laws and regulations that may apply to us, we may be subject to significant penalties, including civil, criminal, and administrative penalties, damages, fines, exclusion from government-funded healthcare programs, such as Medicare and Medicaid, or similar programs in other countries or jurisdictions, integrity oversight and reporting obligations to resolve allegations of noncompliance, disgorgement, individual imprisonment, contractual damages, reputational harm, diminished profits, and the curtailment or restructuring of our operations. If any of the physicians or other providers or entities with whom we expect to do business are found to not be in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs and imprisonment, which could affect our ability to operate our business. Further, defending against any such actions can be costly, time-consuming and may require significant 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.

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

We are exposed to the risk of employee fraud or other misconduct. We cannot ensure that our compliance controls, policies, and procedures will in every instance protect us from acts committed by our employees, agents, contractors, or collaborators that would violate the laws or regulations of the jurisdictions in which we operate, including, without limitation, employment, foreign corrupt practices, trade restrictions and sanctions, environmental, competition, and patient privacy and other privacy laws and regulations. Misconduct by employees could include failures to comply with FDA regulations, provide accurate information to the FDA, comply with manufacturing standards we may establish, comply with federal and state healthcare fraud and abuse laws and regulations, report financial information or data accurately, or disclose unauthorized activities to us. In particular, sales, marketing, and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, kickbacks, self-dealing, and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, labeling, marketing and promotion, sales commission, customer incentive programs, and other business arrangements. Employee misconduct could also involve the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. It is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations.

If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a material and adverse effect on our business, financial condition, results of operations and prospects, including the imposition of significant civil, criminal and administrative penalties, damages, monetary fines, individual imprisonment, disgorgement of profits, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, contractual damages, reputational harm, diminished profits and future earnings, additional reporting or oversight obligations if we become subject to a corporate integrity agreement or other agreement to resolve allegations of noncompliance with the law, and curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and pursue our strategy.

Current and future legislation may increase the difficulty and cost for us and any future collaborators to obtain marketing approval of and commercialize our product candidates and affect the prices we, or they, may obtain.

In the United States and other jurisdictions, there have been, and we expect there will continue to be, a number of legislative and regulatory changes and proposed changes to the healthcare system that could affect our future results of operations. 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 (collectively, the ACA), was enacted, which substantially changed the way healthcare is financed by both governmental and private payors. Among the provisions of the ACA of importance to the biopharmaceutical and biotechnology industries are the following:

- manufacturers and importers of certain branded prescription drugs are required to pay an annual, nondeductible fee according to their market share of all such sales;
- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program, to 23.1% of the average manufacturer price for most branded drugs, and to 13.0% for generic drug;
- a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for certain drugs, including our product candidates, that are inhaled, infused, instilled, implanted, or injected;
- extension of manufacturers' Medicaid rebate liability to covered outpatient drugs dispensed to individuals who are enrolled in Medicaid managed care organizations;
- expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals and by adding new mandatory eligibility categories for individuals with income at or below 133% of the federal poverty level, thereby potentially increasing manufacturers' Medicaid rebate liability;
- expansion of the entities eligible for discounts under the 340B drug pricing program;
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research; and
- establishment of a Center for Medicare and Medicaid Innovation at CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug spending.

Since its enactment, there have been 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. Thus, the ACA remains in effect in its current form. Prior to the Supreme Court's decision, President Biden issued an Executive Order to initiate a special enrollment period from February 15, 2021 through August 15, 2021 for purposes of obtaining health insurance coverage through the ACA marketplace. The Executive Order also instructed certain governmental agencies to review and reconsider their existing policies and rules that limit access to healthcare, including among others, reexamining Medicaid demonstration projects and waiver programs that include work requirements, and policies that create unnecessary barriers to obtaining access to health insurance coverage through Medicaid or the ACA. On August 16, 2022, President Biden signed the Inflation Reduction Act of 2022 (the IRA) into law, which, among other things, extends enhanced subsidies for individuals purchasing health insurance coverage in ACA marketplaces through plan year 2025. It is unclear how other healthcare reform measures of the Biden administration or other efforts, if any, to challenge, repeal or replace the ACA, will impact our business.

In addition, other legislative changes have been proposed and adopted in the United States since the ACA was enacted. For example, on March 11, 2021, President Biden signed the American Rescue Plan Act of 2021 into law, which eliminated the statutory Medicaid drug rebate cap, beginning January 1, 2024. The rebate was previously capped at 100% of a drug's average manufacturer price. Further, in August 2011, the Budget Control Act of 2011, among other things, included aggregate reductions of Medicare payments to providers. These reductions went into effect in April 2013 and, due to subsequent legislative amendments to the statute, will remain in effect until 2032, with the exception of a temporary suspension from May 1, 2020 through March 31, 2022, unless additional action is taken by Congress.

Moreover, heightened governmental scrutiny is likely to continue over the manner in which manufacturers set prices for their marketed products, which already has resulted in several Congressional inquiries, proposed and enacted legislation and executive orders issued by the President designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drug products. Most recently, the IRA marks the most significant action by Congress with respect to the biopharmaceutical industry since adoption of the ACA in 2010. Among other things, the IRA requires manufacturers of certain drugs to engage in price negotiations with Medicare (beginning in 2026), 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). Manufacturers that fail to comply with the IRA may be subject to various penalties, including civil monetary penalties. 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. 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, and while the impact of the IRA on the biopharmaceutical industry cannot yet be fully determined, it is likely to be significant.

Additionally, individual states in the United States have passed legislation and implemented regulations designed to control biopharmaceutical product pricing and costs. Similar developments have occurred outside of the United States, including in the European Union where healthcare budgetary constraints have resulted in restrictions on the pricing and reimbursement of medicines by relevant health service providers. To obtain reimbursement or pricing approval in some European Union member states, we may be required to conduct studies that compare the cost-effectiveness of our product candidates to other therapies that are considered the local standard of care.

We cannot predict the likelihood, nature, or extent of government regulation that may arise from the IRA or future legislation or administrative action in the United States or any other jurisdiction. If we or any third parties we may engage are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we or such third parties are not able to maintain regulatory compliance, our product candidates may lose any regulatory approval that may have been obtained and we may not achieve or sustain profitability.

Even if we are able to commercialize any product candidate, coverage and adequate reimbursement may not be available or such product candidate may become subject to unfavorable pricing regulations or third-party coverage and reimbursement policies, which would harm our business.

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

Our ability to commercialize any products successfully also will depend in part on the extent to which coverage and adequate reimbursement for these products and related treatments will be available from third-party payors, such as government authorities, private health insurers, and other organizations. Even if we succeed in bringing one or more products to the market, these products may not be considered cost-effective, and the amount reimbursed for any products may be insufficient to allow us to sell our products on a competitive basis. Because our programs are in the relatively early stages of development, we are unable at this time to determine their cost effectiveness or the likely level or method of coverage and reimbursement. Increasingly, the third-party payors who reimburse patients or healthcare providers are requiring that drug companies provide them with predetermined discounts from list prices, and are seeking to reduce the prices charged or the amounts reimbursed for drug products. If the price we are able to charge for any products we develop, or the coverage and reimbursement provided for such products, is inadequate in light of our development and other costs, our return on investment could be affected adversely.

There may be significant delays in obtaining reimbursement for newly-approved drug products, and coverage may be more limited than the purposes for which the drug product is approved by the FDA or comparable foreign regulatory authorities. Moreover, eligibility for reimbursement does not imply that any drugs product will be reimbursed in all cases or at a rate that covers our costs, including research, development, manufacture, sale, and distribution.

Interim reimbursement levels for new drug products, if applicable, may also be insufficient to cover our costs and may not be made permanent. Reimbursement rates may be based on payments allowed for lower cost drug products that are already reimbursed, may be incorporated into existing payments for other services and may reflect budgetary constraints or imperfections in Medicare data. Net prices for drug products may be reduced by mandatory discounts or rebates required by third-party payors and by any future relaxation of laws that presently restrict imports of drug products from countries where they may be sold at lower prices than in the United States. Obtaining coverage and adequate reimbursement for our product candidates may be particularly difficult because of the higher prices often associated with drugs administered under the supervision of a physician.

Further, no uniform policy for coverage and reimbursement exists in the United States, and coverage and reimbursement can differ significantly from payor to payor. Third-party payors often follow Medicare coverage policy and payment limitations in setting their own reimbursement rates, but also have their own methods and approval process apart from Medicare determinations. 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 product candidates to each payor separately, with no assurance that coverage and adequate reimbursement will be applied consistently or obtained in the first instance. Decisions regarding the extent of coverage and amount of reimbursement to be provided for any product candidates that we develop will be made on a payor-by-payor basis. One payor's determination to provide coverage for a drug does not assure that other payors will also provide coverage and adequate reimbursement for the drug. Additionally, a third-party payor's decision to provide coverage for a therapy does not imply that an adequate reimbursement rate will be approved.

There have been, and likely will continue to be, legislative and regulatory proposals at the foreign, federal, and state levels directed at broadening the availability of healthcare and containing or lowering the cost of healthcare. The continuing efforts of the government, insurance companies, managed care organizations, and other payors of healthcare services to contain or reduce costs of healthcare and/or impose price controls may adversely affect:

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

Our inability to promptly obtain coverage and adequate reimbursement from both third-party payors for the product candidates that we may develop and for which we obtain regulatory approval could have a material and adverse effect on our business, financial condition, results of operations, and prospects.

We face potential liability related to the privacy of health information we utilize in the development of product candidates, as well as information we obtain from clinical trials sponsored by us from research institutions and directly from individuals.

The global data protection landscape is rapidly evolving and we and our partners and vendors are, or may become, subject to various federal, state, and foreign data protection laws and regulations (i.e., laws and regulations that address personal information, data privacy and security). 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. The cost of compliance with these laws, regulations and standards is high and is likely to increase in the future. If we fail to comply with these laws and regulations, we may be subject to litigation, regulatory investigations, enforcement notices, enforcement actions, fines, and criminal or civil penalties, as well as adverse publicity and a potential loss of business.

In the United States, numerous federal and state laws and regulations, including state data breach notification laws, state health information privacy laws, and federal and state consumer protection laws and regulations that govern the collection, use, disclosure, and protection of health-related and other personal information could apply to our operations or the operations of our partners. For example, most healthcare providers, including research institutions from which we obtain patient health information, are subject to privacy and security regulations promulgated under HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009. HIPAA imposes obligations on "covered entities," including certain healthcare providers, health plans and healthcare clearinghouses, as well as their respective "business associates" that create, receive, maintain or transmit individually identifiable health information for or on behalf of a covered entity, with respect to safeguarding the privacy, security and transmission of individually identifiable health information. We could potentially face substantial criminal or civil penalties if we violate HIPAA. For example, we could be subject to significant penalties if we knowingly receive individually identifiable health information from a HIPAA-covered

healthcare provider or research institution that has not satisfied HIPAA's requirements for disclosure of individually identifiable health information, or otherwise violate applicable HIPAA requirements related to the protection of such information.

Furthermore, the Federal Trade Commission (FTC) also has authority to initiate enforcement actions against entities that mislead customers about HIPAA compliance, make deceptive statements about privacy and data sharing in privacy policies, fail to limit third-party use of personal health information, fail to implement policies to protect personal health information or engage in other unfair practices that harm customers or that may violate Section 5 of the FTC Act. Even when HIPAA does not apply, according to the Federal Trade Commission (FTC) violating consumers' privacy rights or failing to take appropriate steps to keep consumers' personal information secure may constitute a violation of the FTC Act. The FTC expects a company's data security measures to be reasonable and appropriate in light of the sensitivity and volume of consumer information it holds, the size and complexity of its business, and the cost of available tools to improve security and reduce vulnerabilities. Additionally, federal and state consumer protection laws are increasingly being applied by FTC and states' attorneys general to regulate the collection, use, storage, and disclosure of personal or personally identifiable information, through websites or otherwise, and to regulate the presentation of website content.

For our clinical trials, we may maintain sensitive personal information, including health information, that we receive throughout the clinical trial process, in the course of our research collaborations, and directly from individuals (or their healthcare providers) who enroll in our patient assistance programs. As such, we may be subject to state laws and regulations governing the privacy and security of personal information or requiring notification of affected individuals and state regulators in the event of a breach of personal information. Such laws and regulations will be subject to interpretation by various courts and other governmental authorities, thus creating potentially complex compliance issues for us and our future customers and strategic partners. For example, the California Consumer Privacy Act (CCPA) went into effect on January 1, 2020, which establishes additional data privacy rights for residents of the State of California. The CCPA gives California residents expanded rights to access and delete their personal information, opt out of certain personal information sharing, and receive detailed information about how their personal information is used. The CCPA provides for civil penalties for violations, as well as a private right of action for data breaches that has increased the likelihood of, and risks associated with, data breach litigation. Although there are limited exemptions for health-related information, including clinical trial data, the CCPA may increase our compliance costs and potential liability. Further, the California Privacy Rights Act (CPRA) generally went into effect on January 1, 2023, and significantly amends the CCPA. The CPRA imposes additional data protection obligations on covered businesses, including additional consumer rights processes, limitations on data uses, new audit requirements for higher risk data, and opt outs for certain uses of sensitive data.

It also creates a new California data protection agency authorized to issue substantive regulations and could result in increased privacy and information security enforcement. Additional compliance investment and potential business process changes may also be required. Similar laws have been passed in other states, and are continuing to be proposed at the state and federal level, reflecting a trend toward more stringent privacy legislation in the United States. The enactment of such laws could have potentially conflicting requirements that would make compliance challenging.

Complying with U.S. federal and state data privacy and security laws, regulations, amendments to or re-interpretations of existing data privacy and security laws and regulations and contractual or other obligations relating to privacy, data protection, data transfers, data localization or information security may require us to make changes to our processes, incur substantial operational costs, modify our data practices and policies and restrict our business operations. Any actual or perceived failure by us to comply with these laws, regulations or other obligations may lead to significant fines, penalties, regulatory investigations, lawsuits, significant costs for remediation, damage to our reputation or other liabilities.

We are also or may become subject to rapidly evolving data protection laws, rules and regulations in foreign jurisdictions. Any clinical trial programs and research collaborations that we engage in outside the United States may implicate international data protection laws, including, in the European Economic Area (EEA), the General Data Protection Regulation (GDPR), which became effective in 2018. The GDPR imposes stringent operational requirements for processors and controllers of the personal data of individuals within the EEA. Among other things, the GDPR requires detailed notices for clinical trial subjects and investigators, as well as requirements regarding the security of personal data and notification of data processing obligations or security incidents to appropriate data protection authorities or data subjects. If our privacy or data security measures fail to comply with the GDPR requirements, we may be subject to litigation, regulatory investigations, enforcement notices, and/or enforcement actions requiring us to change the way we use personal data and/or fines. In addition to statutory enforcement, a personal data breach can lead to adverse publicity and a potential loss of business. Further, from January 1, 2021, companies have had to comply with both the GDPR and the United Kingdom GDPR (UK GDPR), which, together with the amended UK Data Protection Act 2018, imposes separate but similar obligations to those under the GDPR. The UK GDPR mirrors the fines under the GDPR, imposing fines up to the greater of €20 million (£17.5 million) or 4% of global turnover.

Among other requirements, the GDPR regulates transfers of personal data subject to the GDPR to third countries that have not been found to provide adequate protection to such personal data, including the United States, and the efficacy and longevity of current transfer mechanisms between the EEA and the United States remains uncertain. Case law from the Court of Justice of the European Union (CJEU) states that reliance on the standard contractual clauses - a standard form of contract approved by the European Commission as an adequate personal data transfer mechanism - alone may not necessarily be sufficient in all circumstances and that transfers must be assessed on a case-by-case basis. President Biden signed an Executive Order on October 7, 2022 on 'Enhancing Safeguards for United States Signals Intelligence Activities' which introduced new redress mechanisms and binding safeguards to address the concerns raised by the CJEU in relation to data transfers from the EEA to the United States and which formed the basis of the new EU-US Data Privacy Framework (DPF), as released on December 13, 2022. The European Commission adopted its Adequacy Decision in relation to the DPF on July 10, 2023, rendering the DPF effective as an EU GDPR transfer mechanism to U.S. entities self-certified under the DPF. On October 12, 2023, the UK Extension to the DPF also came into effect (as approved by the UK Government), as a UK GDPR data transfer mechanism to U.S. entities self-certified under the UK Extension to the DPF. We expect the existing legal complexity and uncertainty regarding international personal data transfers to continue. In particular, we expect the DPF Adequacy Decision to be challenged and international transfers to the United States and to other jurisdictions more generally to continue to be subject to enhanced scrutiny by regulators. As the regulatory guidance and enforcement landscape in relation to data transfers continue to develop, we could suffer additional costs, complaints, and/or regulatory investigations or fines, and/ or if we are otherwise unable to transfer personal data between and among countries and regions in which we operate, it could affect the manner in which we provide our services, the geographical location or segregation of our relevant systems and operations, and could adversely affect our financial results. These laws and regulations may apply, not only to us, but also to vendors that store or otherwise process data on our behalf, such as information technology vendors. If such a vendor misuses data we have provided to it, or fails to safeguard such data, we may be subject to litigation, regulatory investigations, enforcement notices, and/or enforcement actions, as well as adverse publicity and a potential loss of business.

We are likely to be required to expend significant capital and other resources to ensure ongoing compliance with applicable privacy and data security laws. Claims that we have violated individuals' privacy rights or breached our contractual obligations, even if we are not found liable, could be expensive and time-consuming to defend, and could result in adverse publicity that could harm our business. Moreover, even if we take all necessary action to comply with regulatory requirements, we could be subject to a hack or data breach, which could subject us to fines and penalties, as well as reputational damage.

Although we work to comply with applicable laws, regulations and standards, our contractual obligations and other legal obligations, these requirements are evolving and may be modified, interpreted and applied in an inconsistent manner from one jurisdiction to another, and may conflict with one another or other legal obligations with which we must comply. If we fail to comply with applicable federal, state, local, or foreign regulatory requirements, we could be subject to a range of regulatory actions, including penalties and fines, that may also impact our compliance with contracts entered into with our partners, and that could affect our or any collaborators' ability to seek to commercialize our clinical candidates. Any threatened or actual government enforcement action could also generate adverse publicity and require that we devote substantial resources that could otherwise be used in other aspects of our business.

Further, the regulatory framework for AI/ML automated decision making is evolving, and we may not always be able to anticipate how to respond to these laws or regulations given they are still rapidly evolving. There is an increase in litigation in a number of jurisdictions, including the United States, relating to the use of AI. New laws regulating AI are at an advanced stage of the legislative process in the EU, and it is possible that new laws and regulations will be adopted in the United States and in other non-U.S. jurisdictions, or that existing laws and regulations may be interpreted in ways that would affect the way in which we use AI/ML. Further, the cost to comply with such laws or regulations, or decisions and/or guidance interpreting existing laws, could be significant and would increase our operating expenses, which could adversely affect our business, financial condition and results of operations.

In Europe, on April 21, 2021, the European Commission proposed a regulation seeking to establish a comprehensive, risk-based governance framework for AI in the EU market (EU AI Act). The proposal is intended to apply to companies that develop, use and/or provide AI in the EU and includes requirements around transparency, conformity assessments and monitoring, risk assessments, human oversight, security and accuracy, and proposes fines for breach of up to 6% of worldwide annual turnover. In addition, on September 28, 2022, the European Commission proposed two Directives seeking to establish a harmonized civil liability regime for AI in the EU. These regulatory proposals are at varying stages of the legislative process and are not yet finalized; the EU AI Act is at an advanced stage and the text is currently expected to be finalized in 2024. Once finalized and in force, this regulatory framework is expected to have a material impact on the way AI is regulated in the EU, and together with developing guidance and/or decisions in this area, may affect our use of AI and our ability to provide, improve or commercialize our services, require additional compliance measures and changes to our operations and processes, result in increased compliance costs and potential increases in civil claims against us, and could adversely affect our business, operations and financial condition.

Risks Related to Our Dependence on Third Parties

We contract with third parties for the manufacture of our product candidates. This reliance on third parties increases the risk that we will not have sufficient quantities of our product candidates or drugs or such quantities at an acceptable cost, which could delay, prevent or impair our development or commercialization efforts.

We do not currently have the infrastructure or internal capability to manufacture supplies of our product candidates for use in development and commercialization. We rely, and expect to continue to rely, on third-party manufacturers for the production of our product candidates for preclinical studies and clinical trials under the guidance of members of our organization. We do not have long-term supply agreements. Furthermore, while the raw materials for our product candidates are sourced from multiple suppliers, in some cases, the drug product is sourced from a single-source supplier. If we were to experience an unexpected loss of supply of any of our product candidates or any of our future product candidates for any reason, whether as a result of manufacturing, supply or storage issues or otherwise, we could experience delays, disruptions, suspensions or terminations of, or be required to restart or repeat, any pending or ongoing clinical trials.

We expect to continue to rely on third-party manufacturers for the commercial supply of any of our product candidates for which we obtain marketing approval. We may be unable to maintain or establish required agreements with third-party manufacturers or to do so on acceptable terms. Even if we are able to establish agreements with third-party manufacturers, reliance on third-party manufacturers entails additional risks, including:

- the failure of the third party to manufacture our product candidates according to our schedule, or at all, including if our third-party contractors give greater priority to the supply of other products over our product candidates or otherwise do not satisfactorily perform according to the terms of the agreements between us and them;
- the reduction or termination of production or deliveries by suppliers, or the raising of prices or renegotiation of terms;
- the termination or nonrenewal of arrangements or agreements by our third-party contractors at a time that is costly or inconvenient for us;
- the breach by the third-party contractors of our agreements with them;
- the failure of third-party contractors to comply with applicable regulatory requirements;
- the failure of the third party to manufacture our product candidates according to our specifications;
- the mislabeling of clinical supplies, potentially resulting in the wrong dose amounts being supplied or study drug or placebo not being properly identified;
- clinical supplies not being delivered to clinical sites on time, leading to clinical trial interruptions, or of drug supplies not being distributed to commercial vendors in a timely manner, resulting in lost sales; and
- the misappropriation of our proprietary information, including our trade secrets and know-how.

We do not have complete control over all aspects of the manufacturing process of, and are dependent on, our contract manufacturing partners for compliance with cGMP or similar foreign regulations for manufacturing both active drug substances and finished drug products. Third-party manufacturers may not be able to comply with cGMP regulations or similar regulatory requirements outside of the United States. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or a comparable foreign regulatory authority, they will not be able to secure and/or maintain marketing approval for their manufacturing facilities. In addition, we do not have control over the ability of our contract manufacturers to maintain adequate quality control, quality assurance and qualified personnel. If the FDA or a 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 marketing 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 fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of product candidates or drugs, operating restrictions and criminal prosecutions, any of which could significantly and adversely affect supplies of our product candidates or drugs and harm our business and results of operations.

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

Supply sources could be interrupted from time to time and, if interrupted, there is no guarantee that supplies could be resumed within a reasonable time frame and at an acceptable cost or at all.

We rely on our manufacturers to purchase from third-party suppliers the materials necessary to produce our product candidates for our preclinical studies and intend to continue to rely on these third parties for any clinical trials that we undertake. There are a limited number of suppliers for raw materials that we use to manufacture our drugs and there may be a need to assess alternate suppliers to prevent a possible disruption of the manufacture of the materials necessary to produce our product candidates for our preclinical studies, clinical trials, and if approved, ultimately for commercial sale. We do not have any control over the process or timing of the acquisition of these raw materials by our manufacturers. Moreover, we currently do not have any agreements for the commercial production of these raw materials. We cannot be sure that these suppliers will remain in business, or that they will not be purchased by one of our competitors or another company that is not interested in continuing to produce these materials for our intended purpose. In addition, the lead time needed to establish a relationship with a new supplier can be lengthy, and we may experience delays in meeting demand in the event a new supplier must be used. The time and effort to qualify a new supplier could result in additional costs, diversion of resources, or reduced manufacturing yields, any of which would negatively impact our operating results. Although we generally do not begin a clinical trial unless we believe we have a sufficient supply of a product candidate to complete the clinical trial, any significant delay in the supply of a product candidate, or the raw material components thereof, for an ongoing clinical trial due to the need to replace a third-party manufacturer could considerably delay completion of our clinical trials, product testing, and potential regulatory approval of our product candidates. If our manufacturers or we are unable to purchase these raw materials after regulatory approval has been obtained for our product candidates, the commercial launch of our product candidates would be delayed or there would be a shortage in supply, which would impair our ability to generate revenues from the sale of our product candidates.

We rely, and expect to continue to rely, on third parties, including independent clinical investigators and CROs, to conduct our preclinical studies and clinical trials. If these third parties do not successfully carry out their contractual duties, comply with applicable regulatory requirements, or meet expected deadlines, we may not be able to obtain regulatory approval for or commercialize our product candidates and our business could be substantially harmed.

We do not currently have the ability to independently conduct any clinical trials. We have relied upon and plan to continue to rely upon third parties, including independent clinical investigators and third-party CROs, to conduct our preclinical studies and clinical trials and to monitor and manage data for our clinical and preclinical programs. We rely on these parties for execution of our preclinical studies and clinical trials, and control only certain aspects of their activities. Nevertheless, we are responsible for ensuring that each of our studies and trials is conducted in accordance with the applicable protocol, legal, regulatory, and scientific standards, and our reliance on these third parties does not relieve us of our regulatory responsibilities. We and our third-party contractors and 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 products 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 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. We cannot assure you that upon inspection by a given regulatory authority, such regulatory authority will determine that any of our clinical trials comply with GCP regulations. In addition, our clinical trials must be conducted with product produced under cGMP regulations (or similar regulatory requirements outside of the United States). Our failure to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process.

Further, these investigators and CROs are not our employees and we will not be able to control, other than by contract, the amount of resources, including time, that they devote to our product candidates and clinical trials. If independent investigators or CROs fail to devote sufficient resources to the development of our product candidates, or if their performance is substandard, it may delay or compromise the prospects for approval and commercialization of any product candidates that we develop. In addition, the use of third-party service providers may require us to disclose our proprietary information to these parties, which could increase the risk that this information will be misappropriated.

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. Further, some of these agreements may also be terminated by such third parties on short notice, or under certain circumstances, including our insolvency.

There is a limited number of third-party service providers that specialize or have the expertise required to achieve our business objectives. 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 drug development activities that could harm our competitive position. If any of our relationships with these third-party laboratories, CROs or clinical investigators terminate, we may not be able to enter into arrangements with alternative laboratories, CROs, or investigators or to do so in a timely manner or on commercially reasonable terms.

If laboratories, CROs, or clinical investigators do not successfully carry out their contractual duties or obligations or meet expected deadlines, if they need to be replaced or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our preclinical or clinical protocols, regulatory requirements or for other reasons, our preclinical or clinical trials may be extended, delayed, or terminated and we may not be able to obtain regulatory approval for or successfully commercialize our product candidates. As a result, our results of operations and the commercial prospects for our product candidates would be harmed, our costs could increase, and our ability to generate revenues could be delayed. Switching or adding additional laboratories or CROs (or investigators) involves additional cost and requires management time and focus. In addition, there is a natural transition period when a new laboratory or CRO commences work. As a result, delays occur, which can materially impact our ability to meet our desired clinical development timelines. Additionally, CROs may lack the capacity to absorb higher workloads or take on additional capacity to support our needs. Though we carefully manage our relationships with our contracted laboratories and CROs, there can be no assurance that we will not encounter similar 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 may not realize the benefits of any collaborative or licensing arrangement, and if we fail to enter into new strategic relationships our business, financial condition, commercialization prospects, and results of operations may be materially adversely affected.

Our product development programs and the potential commercialization of our product candidates will require substantial additional cash to fund expenses. Therefore, for some of our product candidates, we may in the future decide to enter into collaborations with pharmaceutical or biopharmaceutical companies for the development and potential commercialization of those product candidates.

We face significant competition in seeking appropriate collaborators. Collaborations are complex and time-consuming to negotiate and document. We may also be restricted under existing and future collaboration agreements from entering into agreements on certain terms with other potential collaborators. We may not be able to negotiate collaborations on acceptable terms, or at all. If our strategic collaborations do not result in the successful development and commercialization of product candidates, or if one of our collaborators terminates its agreement with us, we may not receive any future research funding or milestone or royalty payments under the collaboration. Moreover, our estimates of the potential revenue we are eligible to receive under any strategic collaborations we may enter into may include potential payments related to therapeutic programs for which our collaborators may discontinue development in the future. If that were to occur, we may have to curtail the development of a particular product candidate, reduce or delay its development program or one or more of our other development programs, delay its potential commercialization or reduce the scope of our sales or marketing activities, or increase our expenditures and undertake development or commercialization activities at our own expense. If we elect to increase our expenditures to fund development or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all. If we do not have sufficient funds, we will not be able to bring our product candidates to market and generate product revenue.

In instances where we have or do enter into collaborations, we could be subject to the following risks, each of which may materially harm our business, commercialization prospects, and financial condition:

- we may not be able to control the amount and timing of resources that is required of us to complete our development obligations or that the collaboration partner devotes to the product development or marketing programs;
- the collaboration partner may experience financial difficulties;
- collaborators may delay clinical trials, provide insufficient funding for a clinical trial program, stop a clinical trial or abandon a product candidate, repeat or conduct new clinical trials, or require a new formulation of a product candidate for clinical testing;
- we may be required to relinquish important rights such as marketing, distribution, and intellectual property rights;
- collaborators may infringe the intellectual property rights of third parties, which may expose us to litigation and potential liability;
- a collaborator could move forward with a competing product developed either independently or in collaboration with third parties, including our competitors;
- we and our collaboration partner may disagree regarding the development plan for research and development projects or product candidates on which we are collaborating (for example, we may disagree with a collaboration partner regarding target indications or inclusion or exclusion criteria for a clinical trial); or
- business combinations or significant changes in a collaborator’s business strategy may adversely affect our willingness to complete our obligations under any arrangement.

If we license products or businesses, we may not be able to realize the benefit of such transactions if we are unable to successfully integrate them with our existing operations and company culture. We cannot be certain that, following a strategic transaction or license, we will achieve the results, revenue, or specific net income that justifies such transaction.

Risks Related to Intellectual Property

We depend on intellectual property licensed or acquired from third parties and we are currently party to in-license agreements under which we acquired rights to use, develop, manufacture and/or commercialize certain of our proprietary technologies and product candidates. If we breach our obligations under these agreements or if any of these agreements is terminated, or otherwise experience disruptions to our business relationships with our licensors, we may be required to pay damages, lose our rights to such intellectual property and technology, or both, which would harm our business.

We are dependent on patents, know-how, and proprietary technology, both our own and licensed from others. We are a party to intellectual property license agreements and in the future, we may enter into additional license agreements. For example, with respect to developing our product candidates, we have licensed or acquired, as the case may be, certain intellectual property from Amgen, Blackthorn, TSRI and Vanderbilt. These license and acquisition agreements impose, and we expect that future license and acquisition agreements will impose, various diligence, milestone payment, royalty and other obligations on us. If we fail to comply with our obligations under these agreements, we may be required to pay damages and the licensor may have the right to terminate the license. Any termination of these licenses could result in the loss of significant rights and could harm our ability to develop, manufacture and/or commercialize our product candidates. See the section titled "Business—Intellectual Property—In-Licensing and Collaboration Agreements" in this Annual Report on Form 10-K for additional information regarding these key agreements.

In addition, the agreements under which we license or acquire intellectual property or technology to or from third parties are complex, and certain provisions in such agreements may be susceptible to multiple interpretations. The resolution of any contract interpretation disagreement that may arise could narrow what we believe to be the scope of our rights to the relevant intellectual property or technology or increase what we believe to be our financial or other obligations under the relevant agreement, either of which could have a material adverse effect on our business, financial condition, results of operations and prospects. Moreover, if disputes over intellectual property that we have licensed or acquired prevent or impair our ability to maintain our current licensing arrangements on commercially acceptable terms, we may be unable to successfully develop and commercialize the affected product candidates. Our business also would suffer if any current or future licensors fail to abide by the terms of the license, if the licensors fail to enforce licensed patents against infringing third parties, if the licensed patents or other rights are found to be invalid or unenforceable, or if we are unable to enter into necessary licenses on acceptable terms. Moreover, our licensors may own or control intellectual property that has not been licensed to us and, as a result, we may be subject to claims, regardless of their merit, that we are infringing or otherwise violating the licensor's rights.

In addition, while we cannot currently determine the amount of the royalty obligations we would be required to pay on sales of future products, if any, the amounts may be significant. The amount of our future royalty obligations will depend on the technology and intellectual property we use in products that we successfully develop and commercialize, if any. Therefore, even if we successfully develop and commercialize products, we may be unable to achieve or maintain profitability.

If we are unable to successfully obtain rights to required third-party intellectual property rights or maintain the existing intellectual property rights we have, we may have to abandon development of the relevant research programs or product candidates and our business, financial condition, results of operations and prospects could suffer.

Licensing of intellectual property is of critical importance to our business and involves complex legal, business and scientific issues and is complicated by the rapid pace of scientific discovery in our industry.

Disputes may also arise between us and our current and future licensors regarding intellectual property subject to a license or collaboration agreement, including those relating to:

- the scope of rights granted under the license or collaboration agreement and other interpretation-related issues;
- whether and the extent to which our technology and processes infringe on intellectual property of the licensor that is not subject to the license agreement;
- our right to sublicense patent and other rights to third parties under collaborative development relationships;
- whether we are complying with our diligence obligations with respect to the use of the licensed technology in relation to our development and commercialization of our product candidates, and what activities satisfy those diligence obligations;
- the priority of invention of patented technology;
- rights upon termination of the license agreements;

- the scope and duration of exclusivity obligations of each party to the license agreements;
- the amount and timing of payments owed under license agreements; and
- the allocation of ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors or collaborators and by us and our partners.

The resolution of any contractual interpretation dispute that may arise, if unfavorable to us, could have a material adverse effect on our business, financial condition, results of operations and prospects. Such resolution could narrow what we believe to be the scope of our rights to the relevant intellectual property or technology, increase what we believe to be our financial or other obligations under the relevant agreement or decrease the third party's financial or other obligations under the relevant agreement. Furthermore, if disputes over intellectual property that we have licensed 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. We are generally also subject to all of the same risks with respect to protection of intellectual property that we license as we are for intellectual property that we own, which are described below. If we or our licensors fail to adequately protect this intellectual property, our ability to commercialize our products could suffer.

We depend, in part, on our licensors to file, prosecute, maintain, defend, and enforce certain patents and patent applications that are material to our business.

Certain patents and patent applications relating to our product candidates are owned or controlled by certain of our licensors. In some circumstances, we may not have the right to control the preparation, filing, prosecution, maintenance, and defense of patent applications or patents covering technology that we license from third parties. In such circumstances, our licensors generally have rights to file, prosecute, maintain, and defend the licensed patents in their name, generally with our right to comment on such filing, prosecution, maintenance, and defense, with some obligation for the licensor to consider or incorporate our comments. We generally have the first right to enforce our exclusively licensed patent rights against third parties, although our ability to settle such claims often requires the consent of the licensor. If our licensors or any future licensees having rights to file, prosecute, maintain, and defend our patent rights fail to conduct these activities for patents or patent applications covering any of our 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, or selling competing products. We cannot be certain that such activities by our licensors 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. Pursuant to the terms of the license agreements with some of our licensors, 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 in the circumstances where we have the right to pursue such enforcement or defense, we cannot ensure 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. In addition, even when we have the right to control patent prosecution of licensed patents and patent applications, enforcement of licensed patents, or defense of claims asserting the invalidity of those patents, we may still be adversely affected or prejudiced by actions or inactions of our licensors and their counsel that took place prior to or after our assuming control. 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 product candidates may be adversely affected and we may be unable to prevent competitors from making, using and selling competing products.

Given the breadth of the application of our precision neuroscience approach, in order to increase our ability to exploit our technologies, we may enter into collaborations and/or strategic partnerships in the future, and we may not realize the anticipated benefits of such collaborations or partnerships. We may not be able to do so or to realize the potential benefits of such transactions, which may cause us to alter or delay our development and commercialization plans.

Research and development collaborations and strategic partnerships are prevalent in the biopharmaceutical industry. The breadth of the application of our precision neuroscience approach is an attractive technology for potential collaborations and/or strategic partnerships. These transactions are subject to numerous risks, which may include the following:

- collaborators have significant discretion in determining the efforts and resources that they will apply to a collaboration, and may not commit sufficient efforts and resources, or may misapply those efforts and resources;
- collaborators may not pursue development and commercialization of collaboration product candidates or may elect not to continue or renew development or commercialization programs based on clinical trial results or changes in their strategic focus;
- collaborators may delay, provide insufficient resources to, or modify or stop clinical trials for collaboration product candidates;
- collaborators could develop or acquire products outside of the collaboration that compete directly or indirectly with our products or product candidates;

- collaborators may not properly maintain or defend our intellectual property rights or may use our intellectual property or proprietary information in a way that gives rise to actual or threatened litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to potential liability;
- disputes may arise between us and a collaborator that cause the delay or termination of the research, development or commercialization of our product candidates, or that result in costly litigation or arbitration that diverts management attention and resources;
- collaborations may be terminated and, if terminated, may result in a need for additional capital and personnel to pursue further development or commercialization of the applicable product candidates; and
- collaborators may own or co-own intellectual property covering our products that results from our collaborating with them, and in such cases, we may not have the exclusive right to commercialize such intellectual property.

The development and potential commercialization of our product candidates will require substantial additional capital to fund expenses. We may form or seek further strategic alliances, create joint ventures or collaborations, or enter into additional licensing arrangements with third parties that we believe will complement or augment our development and commercialization efforts with respect to our product candidates and any future product candidates that we may develop, including in territories outside the United States or for certain indications. These transactions can entail numerous operational and financial risks, including exposure to unknown liabilities, disruption of our business and diversion of our management's time and attention in order to manage a collaboration or develop acquired products, product candidates or technologies, incurrence of substantial debt or dilutive issuances of equity securities to pay transaction consideration or costs, higher than expected collaboration, acquisition or integration costs, write-downs of assets or goodwill or impairment charges, increased amortization expenses, difficulty and cost in facilitating the collaboration or combining the operations and personnel of any acquired business, impairment of relationships with key suppliers, manufacturers or customers of any acquired business due to changes in management and ownership and the inability to retain key employees of any acquired business. As a result, if we enter into acquisition or in-license agreements or strategic partnerships, we may not be able to realize the benefit of such transactions if we are unable to successfully integrate them with our existing operations and company culture, which could delay our timelines or otherwise adversely affect our business. We also cannot be certain that, following a strategic transaction or license, we will achieve the revenue or specific net income that justifies such transaction or such other benefits that led us to enter into the arrangement.

In addition, we face significant competition in seeking appropriate strategic partners and the negotiation process is time-consuming and complex. We may not be successful in our efforts to establish a strategic partnership or other alternative arrangements for our product candidates because they may be deemed to be at too early of a stage of development for collaborative effort and third parties may not view our product candidates as having the requisite potential to demonstrate safety and efficacy. If and when we collaborate with a third party for development and commercialization of a product candidate, we can expect to relinquish some or all of the control over the future success of that product candidate to the third party. Our ability to reach a definitive agreement for a collaboration will depend, among other things, upon our assessment of the collaborator's resources and expertise, the terms and conditions of the proposed collaboration and the proposed collaborator's evaluation of our technologies, product candidates and market opportunities. The collaborator may also consider alternative product candidates or technologies for similar indications that may be available to collaborate on and whether such a collaboration could be more attractive than the one with us for our product candidate. We may also be restricted under any license agreements from entering into agreements on certain terms or at all with potential collaborators.

As a result of these risks, we may not be able to realize the benefit of our existing collaboration or any future collaborations or licensing agreements we may enter into. In addition, there have been a significant number of recent business combinations among large pharmaceutical companies that have resulted in a reduced number of potential future collaborators and changes to the strategies of the combined company. As a result, we may not be able to negotiate collaborations on a timely basis, on acceptable terms, or at all. If we are unable to do so, we may have to curtail the development of such product candidate, reduce or delay one or more of our other development programs, delay the potential commercialization or reduce the scope of any planned sales or marketing activities for such product candidate, or increase our expenditures and undertake development, manufacturing or commercialization activities at our own expense. If we elect to increase our expenditures to fund development, manufacturing or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all. If we do not have sufficient funds, we may not be able to further develop our product candidates or bring them to market and generate product revenue.

Our product candidates may also require specific components to work effectively and efficiently, and rights to those components may be held by others. We may be unable to in-license any compositions, methods of use, processes or other third-party intellectual property rights from third parties that we identify. We may fail to obtain any of these licenses at a reasonable cost or on reasonable terms, which would harm our business. In that event, we may be required to expend significant time and resources to develop or license replacement technology. Even if we are able to obtain a license, it may be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. Any delays in entering into new collaborations or strategic partnership agreements related to our product candidates could delay the development and commercialization of our product candidates in certain geographies, which could harm our business prospects, financial condition and results of operations.

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

We may not be successful in obtaining or maintaining necessary rights for our product pipeline which may cause us to operate our business in a more costly or otherwise adverse manner that was not anticipated.

We own or license from third parties certain intellectual property rights necessary to develop our product candidates. The growth of our business will likely depend in part on our ability to acquire or in-license additional proprietary rights, including to expand our product pipeline. In that event, we may be required to expend considerable time and resources to develop or license replacement technology. For example, our programs may involve additional technologies or product candidates that may require the use of additional proprietary rights held by third parties. Furthermore, other pharmaceutical companies and academic institutions may also have filed or are planning to file patent applications potentially relevant to our business. Our product candidates may also require specific formulations or other technology to work effectively and efficiently. These formulations or technology may be covered by intellectual property rights held by others. From time to time, in order to avoid infringing these third-party rights, we may be required to license technology from additional third parties to further develop or commercialize our product candidates. We may be unable to acquire or in-license any relevant third-party intellectual property rights, including any such intellectual property rights required to manufacture, use or sell our product candidates, that we identify as necessary or important to our business operations. We may fail to obtain any of these licenses at a reasonable cost or on reasonable terms, if at all, and as a result we may be unable to develop or commercialize the affected product candidates, which would harm our business. We may need to cease use of the compositions or methods covered by such third-party intellectual property rights, and may need to seek to develop alternative approaches that do not infringe on such intellectual property rights which may entail additional costs and development delays, even if we were able to develop such alternatives, which may not be feasible. Even if we are able to obtain a license under such intellectual property rights, any such license may be non-exclusive, which may allow our competitors' access to the same technologies licensed to us.

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

The licensing and acquisition of third-party intellectual property rights is a competitive practice, and companies that may be more established, or have greater resources than we do, may also be pursuing strategies to license or acquire third-party intellectual property rights that we may consider necessary or attractive in order to commercialize our product candidates. More established companies may have a competitive advantage over us due to their larger size and cash resources or greater clinical development and commercialization capabilities.

There can be no assurance that we will be able to successfully complete such negotiations and ultimately acquire the rights to the intellectual property surrounding the additional product candidates that we may seek to acquire.

We may be dependent on intellectual property licensed or sublicensed to us from, or for which development was funded or otherwise assisted by, the U.S. government and/or government agencies, such as the National Institutes of Health, for development of our technology and product candidates. Failure to meet our own obligations to our licensors or upstream licensors, including such government agencies, may result in the loss of our rights to such intellectual property, which could harm our business.

The U.S. government and/or government agencies have provided, and in the future may provide, funding, facilities, personnel or other assistance in connection with the development of the intellectual property rights owned by or licensed to us. The U.S. government and/or government agencies may have retained rights in such intellectual property, including the right to grant or require us to grant mandatory licenses or sublicenses to such intellectual property to third parties under certain specified circumstances, including if it is necessary to meet health and safety needs that we are not reasonably satisfying or if it is necessary to meet requirements for public use specified by federal regulations, or to manufacture products in the United States. Any exercise of such rights, including with respect to any such required sublicense of these licenses, could result in the loss of significant rights and could harm our ability to commercialize licensed products. For example, the research resulting in certain of our in-licensed patent rights and technology 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. 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.

If we are unable to obtain and maintain sufficient intellectual property protection for our product candidates and approach, or if the scope of the intellectual property protection is not sufficiently broad, our competitors could develop and commercialize products similar or identical to ours, and our ability to successfully commercialize our products may be adversely affected. We cannot ensure that patent rights relating to inventions described and claimed in our pending patent applications will issue or that patents based on our patent applications will not be challenged and rendered invalid and/or unenforceable.

We or our licensors have filed, and we anticipate that in the future we will file additional patent applications both in the United States and in other countries, as appropriate. However, we cannot predict:

- if and when any patents will issue;
- the degree and range of protection any issued patents will afford us against competitors, including whether third parties will find ways to invalidate or otherwise circumvent our patents;
- whether others will apply for or obtain patents claiming aspects similar to those covered by our patents and patent applications;
- whether we will need to initiate litigation or administrative proceedings to defend our patent rights, which may be costly whether we win or lose; or
- whether the patent applications that we own or in-license will result in issued patents with claims that cover our product candidates or uses thereof in the United States or in other foreign countries.

Our success depends in large part on our ability to obtain and maintain patent protection in the United States and other countries with respect to our product candidates and approach. We seek to protect our proprietary position by filing patent applications in the United States and abroad related to our novel discoveries and technologies that are important to our business.

Obtaining and enforcing patents is expensive and time-consuming, and we may not be able to file and prosecute all necessary or desirable patent applications or maintain and/or enforce patents that may issue based on our patent applications, at a reasonable cost or in a timely manner. It is also possible that we will fail to identify patentable aspects of our research and development results before it is too late to obtain patent protection. 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, contract research organizations, contract manufacturers, consultants, advisors and other third parties, any of these parties may breach these agreements and disclose such results before a patent application is filed, thereby jeopardizing our ability to seek patent protection.

Our ability to enforce 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. Such proceedings could also provoke third parties to assert claims against us, including that some or all of the claims in one or more of our patents are invalid or otherwise unenforceable. 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. If we initiate lawsuits to protect or enforce our patents, or litigate against third-party claims, such proceedings would be expensive and would divert the attention of our management and technical personnel.

Composition of matter patents for biopharmaceutical products often provide a strong form of intellectual property protection for those types of products, as such patents provide protection without regard to any method of use. We cannot be certain, however, that the claims in our pending patent applications covering the composition of matter of our product candidates will be considered patentable by the United States Patent and Trademark Office (USPTO), or by patent offices in foreign countries, or that the claims in any of our issued patents will be considered valid and enforceable by courts in the United States or foreign countries. Method of use patents protect the use of a product for the specified method. This type of patent does not prevent a competitor from making and marketing a product that is identical to our product for an indication that is outside the scope of the patented method. Moreover, even if competitors do not actively promote their product for our targeted indications, physicians may prescribe these products "off-label" for those uses that are covered by our method of use patents. Although off-label prescriptions may infringe or contribute to the infringement of method of use patents, the practice is common and such infringement can be difficult to prevent or prosecute.

The strength of patents in the biotechnology, biopharmaceutical and data science fields can be uncertain, and evaluating the scope of such patents involves complex legal, factual and scientific analyses and has in recent years been the subject of much litigation, resulting in court decisions, including Supreme Court decisions, which have increased uncertainties as to the ability to enforce patent rights in the future. The patent applications that we own or in-license may fail to result in issued patents with claims that cover our product candidates or uses thereof in the United States or in other foreign countries. Even if the patents do successfully issue, third parties may challenge the validity, enforceability, or scope thereof, which may result in such patents being narrowed, invalidated, or held unenforceable. In the event of litigation or administrative proceedings, we cannot be certain that the claims in any of our issued patents will be considered valid by courts in the United States or foreign countries. Furthermore, even if they are unchallenged, our patents and patent applications may not adequately protect our intellectual property or prevent others from designing their products to avoid being covered by our claims. If the breadth or strength of protection provided by the patent applications we hold with respect to our product candidates is threatened, this could dissuade companies from collaborating with us to develop, and could threaten our ability to commercialize, our product candidates. In addition, the laws of foreign countries may not protect our rights to the same extent as the laws of the United States, or vice versa. Further, if we encounter delays in our clinical trials, the period of time during which we could market our product candidates under patent protection would be reduced.

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 our products.

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 application in the United States and abroad that is relevant to or necessary for the commercialization of our 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 application may be incorrect, which may negatively impact our ability to market our products. We may incorrectly determine that our products are not covered by a third-party patent or may incorrectly predict whether a third party's pending application will issue with claims of relevant scope. Our failure to identify and correctly interpret relevant patents may negatively impact our ability to develop and market our products.

One aspect of the determination of patentability of our inventions depends on the scope and content of the "prior art," information that was or is deemed available to a person of skill in the relevant art prior to the priority date of the claimed invention. There may be prior art of which we are not aware that may affect the patentability of our patent claims or, if issued, affect the validity or enforceability of a patent claim. Further, we may not be aware of all third-party intellectual property rights potentially relating to our product candidates or their intended uses, and as a result the impact of such third-party intellectual property rights upon the patentability of our own patents and patent applications, as well as the impact of such third-party intellectual property upon our freedom to operate, is highly uncertain. Because patent applications in the United States and most other countries are confidential for typically a period of 18 months after filing, or may not be published at all, we cannot be certain that we were the first to file any patent application related to our product candidates. As a result, the issuance, scope, validity, enforceability and commercial value of our patent rights are highly uncertain. Furthermore, for U.S. applications in which all claims are entitled to a priority date before March 16, 2013, an interference proceeding can be provoked by a third party or instituted by the USPTO to determine who was the first to invent any of the subject matter covered by the patent claims of our applications. For U.S. applications containing a claim not entitled to priority before March 16, 2013, there is a greater level of uncertainty in the patent law in view of the passage of the America Invents Act, which brought into effect significant changes to the U.S. patent laws, including new procedures for challenging pending patent applications and issued patents.

Our patents or pending patent applications may be challenged in the courts or patent offices in the United States and abroad. For example, we may be subject to a third-party pre-issuance submission of prior art to the USPTO or become involved in post-grant review procedures, oppositions, derivations, reexaminations, or *inter partes* review proceedings, in the United States or elsewhere, challenging our patent rights or the patent rights of others. An adverse determination in any such challenges may result in loss of exclusivity or in patent claims being narrowed, invalidated, or held unenforceable, in whole or in part, which could limit our ability to stop others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of our technology and products. In addition, 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. Any failure to obtain or maintain patent protection with respect to our product candidates could have a material adverse effect on our business, financial condition, results of operations and prospects.

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 make product candidates that are similar to ours but that are not covered by the claims of the patents that we own or have exclusively licensed;
- we or our licensors 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 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;
- we cannot predict the scope of protection of any patent issuing based on our patent applications, including whether the patent applications that we own or in-license will result in issued patents with claims that cover our product candidates or uses thereof in the United States or in other foreign countries;
- the claims of any patent issuing based on our patent applications may not provide protection against competitors or any competitive advantages, or may be challenged by third parties;
- if enforced, a court may not hold that our patents are valid, enforceable and infringed;
- we may need to initiate litigation or administrative proceedings to enforce and/or defend our patent rights which will be costly whether we win or lose;
- we may choose not to file a patent in order to maintain certain trade secrets or know-how, and a third party may subsequently file a patent covering such intellectual property;
- we may fail to adequately protect and police our trademarks and trade secrets; and
- the patents of others may have an adverse effect on our business, including if others obtain patents claiming subject matter similar to or improving that covered by our patents and patent applications.

Should any of these events occur, they could significantly harm our business, results of operations and prospects.

Confidentiality agreements with employees and third parties may not prevent unauthorized disclosure of trade secrets and other proprietary information. If we are unable to protect the confidentiality of our trade secrets, our business and competitive position would be harmed.

In addition to the protection afforded by patents, we rely on trade secret protection and confidentiality agreements to protect proprietary know-how that is not patentable or that we elect not to patent, processes for which patents are difficult to enforce, and any other elements of our product candidates, technology and product discovery and development processes that involve proprietary know-how, information, or technology that is not covered by patents. Any disclosure, either intentional or unintentional, by our employees, the employees of third parties with whom we share our facilities or third-party consultants and vendors that we engage to perform research, clinical trials or manufacturing activities, or misappropriation by third parties (such as through a cybersecurity breach) of our trade secrets or proprietary information could enable competitors to duplicate or surpass our technological achievements, thus eroding our competitive position in our market. Because we expect to rely on third parties in the development and manufacture of our product candidates, we must, at times, share trade secrets with them. 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.

Trade secrets and confidential information, however, may be difficult to protect. We seek to protect our trade secrets, know-how and confidential information, including our proprietary processes, in part, by entering into confidentiality agreements with our employees, consultants, outside scientific advisors, contractors, and collaborators. We require our employees to enter into written employment agreements containing provisions of confidentiality and obligations to assign to us any inventions generated in the course of their employment. With our consultants, contractors, and outside scientific collaborators, these agreements typically include invention assignment obligations. We cannot guarantee that we have entered into such agreements with each party that may have or has had access to our trade secrets or proprietary technology and processes. Although we use reasonable efforts to protect our trade secrets, our employees, consultants, outside scientific advisors, contractors, and collaborators might intentionally or inadvertently disclose our trade secret information to competitors. In addition, competitors may otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. Despite these efforts, 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. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor or other third party, we would have no right to prevent them from using that technology or information to compete with us. Furthermore, the laws of some foreign countries do not protect proprietary rights to the same extent or in the same manner as the laws of the United States. As a result, we may encounter significant problems in protecting and defending our intellectual property both in the United States and abroad. If we are unable to prevent unauthorized material disclosure of our intellectual property to third parties, or misappropriation of our intellectual property by third parties, we will not be able to establish or maintain a competitive advantage in our market, which could materially adversely affect our business, operating results, and financial condition.

Third-party claims of intellectual property infringement against us or our collaborators may prevent or delay our product discovery and development efforts.

Our commercial success depends in part on our avoiding infringement of the patents and proprietary rights of third parties. There is a substantial amount of litigation involving patents and other intellectual property rights in the biotechnology and biopharmaceutical industries, as well as administrative proceedings for challenging patents, including interference, derivation, *inter partes* review, post-grant review and reexamination proceedings before the USPTO or oppositions and other comparable proceedings in foreign jurisdictions. Furthermore, patent reform and changes to patent laws add uncertainty to the possibility of challenge to our patents in the future. We cannot assure you that our product candidates and other proprietary technologies we may develop will not infringe existing or future patents owned by third parties. Litigation or other legal proceedings relating to intellectual property claims, with or without merit, is unpredictable and generally expensive and time consuming and, even if resolved in our favor, is likely to divert significant resources from our core business, including distracting our technical and management personnel from their normal responsibilities. 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 adequately conduct such litigation or proceedings. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources and more mature and developed intellectual property portfolios. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could have a material adverse effect on our ability to compete in the marketplace.

Numerous U.S. and foreign issued patents and pending patent applications owned by third parties exist in the fields in which we are developing our product candidates. We cannot provide any assurances that third-party patents do not exist which might be enforced against our current product candidates or future products, resulting in either an injunction prohibiting our sales, or, with respect to our sales, an obligation on our part to pay royalties and/or other forms of compensation to third parties. As the biotechnology and biopharmaceutical industries expand and more patents are issued, the risk increases that our product candidates may give rise to claims of infringement of the patent rights of others. Third parties may assert that we infringe their patents or other intellectual property, or that we are otherwise employing their proprietary technology without authorization, and may sue us. There may be third-party patents of which we are currently unaware with claims to compositions, formulations, methods of manufacture, or methods of use or treatment that cover our product candidates. It is also possible that patents owned by third parties of which we are aware, but which we do not believe are relevant to our product candidates and other proprietary technologies we may develop, could be found to be infringed by our

product candidate. 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, third parties, our competitors in both the United States and abroad, many of which have substantially greater resources and have made substantial investments in patent portfolios and competing technologies, may obtain patents in the future that may prevent, limit or otherwise interfere with our ability to make, use and sell our product candidates, and may claim that use of our technologies or the manufacture, use, or sale of our product candidates infringes upon these patents. If any such third-party patents were held by a court of competent jurisdiction to cover our technologies or product candidates, or if we are found to otherwise infringe a third party's intellectual property rights, the holders of any such patents may be able to block, including by court order, our ability to develop, manufacture or commercialize the applicable product candidate unless we obtain a license under the applicable patents or other intellectual property, or until such patents expire or are finally determined to be held invalid or unenforceable. Such a license may not be available on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. If we are unable to obtain a necessary license to a third-party patent on commercially reasonable terms, our ability to commercialize our product candidates may be impaired or delayed, which could in turn significantly harm our business.

The biopharmaceutical and biotechnology industries have produced a considerable number of patents, and it may not always be clear to industry participants, including us, which patents cover various types of products or methods of use. The coverage of patents is subject to interpretation by the courts, and the interpretation is not always uniform. If we were sued for patent infringement, we would need to demonstrate that our product candidates, products or methods either do not infringe the patent claims of the relevant patent or that the patent claims are invalid or unenforceable, and we may not be able to do this. Proving invalidity may be difficult. For example, in the United States, proving invalidity in court requires a showing of clear and convincing evidence to overcome the presumption of validity enjoyed by issued patents, and there is no assurance that a court of competent jurisdiction would invalidate the claims of any such U.S. patent. Even if we are successful in these proceedings, we may incur substantial costs and the time and attention of our management and scientific personnel could be diverted in pursuing these proceedings, which could have a material adverse effect on our business and operations. In addition, we may not have sufficient resources to bring these actions to a successful conclusion.

Third parties asserting their patent or other intellectual property rights against us may seek and obtain injunctive or other equitable relief, which could effectively block our ability to further develop and commercialize our product candidates or force us to cease some of our business operations. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of management and other employee resources from our business, cause development delays, and may impact our reputation. In the event of a successful claim of infringement against us, we may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, obtain one or more licenses from third parties, pay royalties, or redesign our infringing products, which may be impossible on a cost-effective basis or require substantial time and monetary expenditure. In that event, we would be unable to further develop and commercialize our product candidates, which could harm our business significantly. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar negative impact on our business.

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

Patents are of national or regional effect, and filing, prosecuting, maintaining and defending patents on 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 have a different scope and strength than do those in the United States. In addition, the laws of some foreign countries, particularly certain developing 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. 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 rights are not as strong as those in the United States. These products may compete with our products and our patents or other intellectual property rights may not be effective or adequate to prevent them from competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets and other intellectual property, particularly those relating to biopharmaceutical products, which could make it difficult in those jurisdictions for us to stop the infringement or misappropriation of our patents or other intellectual property rights, or the marketing of competing products in violation of our proprietary rights. Proceedings to enforce our patent and other intellectual property rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business. Furthermore, such proceedings could put our patents at risk of being invalidated, held unenforceable, or interpreted narrowly, could put our patent applications at risk of not issuing, and could provoke third parties to assert claims of infringement or misappropriation 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. Similarly, if our trade secrets are disclosed in a foreign jurisdiction, competitors worldwide could have access to our proprietary information and we may be without satisfactory recourse. Such disclosure could have a material adverse effect on our business. Moreover, our ability to protect and enforce our intellectual property rights may be adversely affected by unforeseen changes in foreign intellectual property laws. In addition, certain developing countries, including China and India, have compulsory licensing laws under

which a patent owner may be compelled to grant licenses to third parties. In those countries, we and our licensors may have limited remedies if patents are infringed or if we or our licensors are compelled to grant a license to a third party, which could materially diminish the value of those patents. In addition, many countries limit the enforceability of patents against government agencies or government contractors. This could limit our potential revenue opportunities. 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.

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, the ongoing conflict between Israel and Hamas, and other matters may limit or prevent filing, prosecution, and maintenance of patent applications in Russia, Israel and other countries. 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, Israel and other countries. 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.

Finally, Europe's planned Unified Patent Court or the UPC may, in particular, present uncertainties for our ability to protect and enforce our patent rights against competitors in Europe. In 2012, the European Patent Package, or the EU Patent Package, regulations were passed with the goal of providing a single pan-European Unitary Patent system and a new European Unified Patent Court for litigation involving European patents.

The Unitary Patent system and UPC successfully launched on June 1, 2023. Under the UPC, all European patents, including those issued prior to ratification of the European Patent Package, now by default automatically fall under the jurisdiction of the UPC. The UPC provides our competitors with a new forum to centrally revoke our European patents, and allows for the possibility of a competitor to obtain pan-European injunctions. Such a loss of patent protection could have a material adverse impact on our business and our ability to commercialize our technology and product candidates and, resultantly, on our business, financial condition, prospects and results of operations. 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. Under the current EU Patent Package, 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, if we do not meet all of the formalities and requirements for opt-out under the UPC, our future European patents could remain under the jurisdiction of the UPC.

Because of the expense and uncertainty of litigation, we may conclude that even if a third party is infringing our issued patents, any patents that may be issued as a result of our pending or future patent applications or other intellectual property rights, the risk-adjusted cost of bringing and enforcing such a claim or action, which typically last for years before they are concluded, may be too high or not in the best interest of our company or our stockholders, or it may be otherwise impractical or undesirable to enforce our intellectual property against some third parties. Our competitors or other third parties may be able to sustain the costs of complex patent litigation or proceedings more effectively than we can because of their greater financial resources and more mature and developed intellectual property portfolios. In such cases, we may decide that the monetary cost of such litigation and the diversion of the attention of our management and scientific personnel could outweigh any benefit we receive as a result of the proceedings and that the more prudent course of action is to simply monitor the situation or initiate or seek some other non-litigious action or solution. In addition, the uncertainties associated with litigation could compromise our ability to raise the funds necessary to continue our clinical trials, continue our internal research programs, in-license needed technology or other product candidates, or enter into development partnerships that would help us bring our product candidates to market.

We may be involved in lawsuits to protect or enforce our patents or other intellectual property or the intellectual property of our licensors, which could be expensive, time-consuming, and unsuccessful.

Competitors may infringe our patents or other intellectual property or the intellectual property of our licensors. To cease such infringement or unauthorized use, we may be required to file patent infringement claims, which can be expensive and time-consuming and divert the time and attention of our management and scientific personnel. Our pending patent applications cannot be enforced against third parties practicing the technology claimed in such applications unless and until a patent issues from such applications. In addition, in an infringement proceeding or a declaratory judgment action, a court may decide that one or more of our patents is not valid or is unenforceable, or may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question. An adverse result in any litigation or defense proceeding could put one or more of our patents at risk of being invalidated, held unenforceable, or interpreted narrowly and could put our patent applications at risk of not issuing. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of employee resources from our business.

Interference or derivation proceedings provoked by third parties or brought by the USPTO may be necessary to determine the priority of inventions with respect to, or the correct inventorship of, our patents or patent applications or those of our licensors. An unfavorable outcome could result in a loss of our current patent rights and could require us to cease using the related technology or to attempt to license rights to it from the prevailing party. Our business could be harmed if the prevailing party does not offer us a license on commercially\ reasonable terms. Litigation, interference, derivation or other proceedings may result in a decision adverse to our interests and, even if we are successful, may result in substantial costs and distract our management and other employees.

Even if we establish infringement, the court may decide not to grant an injunction against further infringing activity and instead award only monetary damages, which may or may not be an adequate remedy. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock.

Issued patents covering our product candidates could be found invalid or unenforceable if challenged in court or before the USPTO or comparable foreign authority.

If we or one of our licensing partners initiate legal proceedings against a third party to enforce a patent covering one of our product candidates, the defendant could counterclaim we infringe their patents or that the patent covering our product candidate is invalid or unenforceable, or both. In patent litigation in the United States, defendant counterclaims alleging invalidity or unenforceability are commonplace, and there are numerous grounds upon which a third party can assert invalidity or unenforceability of a patent, including lack of novelty, obviousness, non-enablement or insufficient written description or 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 administrative bodies in the United States or abroad, even outside the context of litigation. Such mechanisms include re-examination, *inter partes* review, post-grant review, and equivalent proceedings in foreign jurisdictions, such as opposition or derivation proceedings. Such proceedings could result in revocation or amendment to our patents in such a way that they no longer cover and protect our product candidates. The outcome following legal assertions of invalidity and unenforceability is unpredictable. In any patent infringement proceeding, there is a risk that a court will decide that a patent of ours is invalid or unenforceable, in whole or in part, and that we do not have the right to stop the other party from using the invention at issue. There is also a risk that, even if the validity of such patents is upheld, the court will construe the patent's claims narrowly or decide that we do not have the right to stop the other party from using the invention at issue on the grounds that our patent claims do not cover the invention, or decide that the other party's use of our patented technology falls under the safe harbor to patent infringement under 35 U.S.C. § 271I(1). With respect to the validity of our patents, for example, we cannot be certain that there is no invalidating prior art of which we, our patent counsel, and the patent examiner were unaware during prosecution. 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 our product candidates and such an outcome may limit our ability to assert our patents against those parties or other competitors and may curtail or preclude our ability to exclude third parties from making and selling similar or competitive products. Such a loss of patent protection could have a material adverse impact on our business. Similarly, if we assert trademark infringement claims, a court may determine that the marks we have asserted are invalid or unenforceable, or that the party against whom we have asserted trademark infringement has superior rights to the marks in question. In this case, we could ultimately be forced to cease use of such trademarks.

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

As is the case with other biopharmaceutical companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biopharmaceutical industry involves both technological and legal complexity, and is therefore costly, time-consuming, and inherently uncertain. Changes in either the patent laws or interpretation of the patent laws in the United States could increase the uncertainties and costs, and may diminish our ability to protect our inventions, obtain, maintain, and enforce our intellectual property rights and, more generally, could affect the value of our intellectual property or narrow the scope of our owned and licensed patents. Recent patent reform legislation in the United States and other countries, including the Leahy-Smith America Invents Act, or the Leahy-Smith Act, signed into law on September 16, 2011, could increase those uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents. The Leahy-Smith Act includes a number of significant changes to U.S. patent law. These include provisions that affect the way patent applications are prosecuted, redefine prior art and provide more efficient and cost-effective avenues for competitors to challenge the validity of patents. These include allowing third-party submission of prior art to the USPTO during patent prosecution and additional procedures to attack the validity of a patent by USPTO administered post-grant proceedings, including post-grant review, *inter partes* review, and derivation proceedings. After March 2013, under the Leahy-Smith Act, the United States transitioned to a first inventor to file system in which, assuming that the other statutory requirements are met, the first inventor to file a patent application will be entitled to the patent on an invention regardless of whether a third party was the first to invent the claimed invention. A third party that files a patent application in the USPTO after March 2013, but before we file an application covering the same invention, could therefore be awarded a patent covering an invention of ours even if we had made the invention before it was made by such third party. This will require us to be cognizant going forward of the time from invention to filing of a patent application. Since patent applications in the United States and most other countries are confidential for a period of time after filing or until issuance, we cannot be certain that we or our licensors were the first to either (1) file any patent application related to our product candidates and other proprietary technologies we may develop or (2) invent any of the inventions claimed in our or our licensor's patents or patent applications. Even where we have a valid and enforceable patent, we may not be able to exclude others from practicing the claimed invention where the other party can show that they used the invention in commerce before our filing date or the other party benefits from a compulsory license. However, the Leahy-Smith Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could have a material adverse effect on our business, financial condition, results of operations and prospects.

Recent U.S. Supreme Court rulings have narrowed the scope of patent protection available in certain circumstances and weakened the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents once obtained. Depending on decisions by Congress, the federal courts, the USPTO and the relevant law-making bodies in other countries, 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 that we might obtain in the future. For example, in a series of cases, the U.S. Supreme Court held that certain claims do not present patentable subject matter (*Mayo Collaborative Services v. Prometheus Laboratories, Inc.* (2012); *Assoc. for Molecular Pathology v. Myriad Genetics, Inc.* (2013); *Alice Corp. v. CLS Bank International* (2014)). Although we do not believe that any of the patents owned or licensed by us will be found invalid based on these decisions, we cannot predict how future decisions by Congress, the federal courts or the USPTO may impact the value of our patents.

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

Periodic maintenance fees on any issued patent are due to be paid to the USPTO and foreign patent agencies in several stages over the lifetime of the patent. The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment, and other similar provisions during the patent application process. Although an inadvertent lapse on us or our patent maintenance vendors, can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. Noncompliance events that could result in abandonment or lapse of a patent or patent application include failure to respond to official actions within prescribed time limits, non-payment of fees, and failure to properly legalize and submit formal documents. In any such event, our competitors might be able to enter the market, which would have a material adverse effect on our business.

The lives of our patents may not be sufficient to effectively protect our products and business.

Patents have a limited lifespan. In the United States, if all maintenance fees are paid timely, the natural expiration of a patent is generally 20 years after its first effective filing date. Although various extensions may be available, the life of a patent, and the protection it affords, is limited. Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such product candidates are commercialized. Even if patents covering our product candidates are obtained, once the patent life has expired for a product, we may be open to competition from biosimilar or generic medications. The launch of a generic version of one of our products in particular would be likely to result in an

immediate and substantial reduction in the demand for that product, which could have a material adverse effect on our business, financial condition, results of operations and prospects. As a result, our patent portfolio may not provide us with sufficient rights to exclude others from commercializing product candidates similar or identical to ours. In addition, although upon issuance in the United States a patent's life can be increased based on certain delays caused by the USPTO, this increase can be reduced or eliminated based on certain delays caused by the patent applicant during patent prosecution. A patent term extension based on regulatory delay may be available in the United States. However, only a single patent can be extended for each marketing approval, and any patent can be extended only once, for a single product. Moreover, the scope of protection during the period of the patent term extension does not extend to the full scope of the claim, but instead only to the scope of the product as approved. Laws governing analogous patent term extensions in foreign jurisdictions vary widely, as do laws governing the ability to obtain multiple patents from a single patent family. Additionally, we may not receive an extension if we fail to exercise due diligence during the testing phase or regulatory review process, apply within applicable deadlines, fail to apply prior to expiration of relevant patents or otherwise fail to satisfy applicable requirements. If we are unable to obtain patent term extension or restoration, or the term of any such extension is less than we request, the period during which we will have the right to exclusively market our product will be shortened and our competitors may obtain approval of competing products following our patent expiration and may take advantage of our investment in development and clinical trials by referencing our clinical and preclinical data to launch their product earlier than might otherwise be the case, and our revenue could be reduced, possibly materially. If we do not have sufficient patent life to protect our products, our business and results of operations will be adversely affected.

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

We may be subject to claims that former employees, collaborators, or other third parties have an interest in our patents or other intellectual property as an inventor or co-inventor. The failure to name the proper inventors on a patent application can result in the patents issuing thereon being unenforceable. Inventorship disputes may arise from conflicting views regarding the contributions of different individuals named as inventors, the effects of foreign laws where foreign nationals are involved in the development of the subject matter of the patent, conflicting obligations of third parties involved in developing our product candidates or as a result of questions regarding co-ownership of potential joint inventions. For example, we may have inventorship disputes arise from conflicting obligations of consultants or others who are involved in developing our product candidates. Alternatively, or additionally, we may enter into agreements to clarify the scope of our rights in such intellectual property. Litigation may be necessary to defend against these and other claims challenging inventorship. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, valuable intellectual property. 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 be a distraction to management and other employees.

We or our licensors may have relied on third-party consultants or collaborators or on funds from third parties, such as the U.S. government, such that we or our licensors are not the sole and exclusive owners of the patents we in-licensed. If other third parties have ownership rights or other rights to our patents, including in-licensed patents, they may be able to license such patents to our competitors, and our competitors could market competing products and technology. This could have a material adverse effect on our competitive position, business, financial conditions, results of operations, and prospects.

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.

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 current or future trademarks or trade names may be challenged, infringed, circumvented or declared generic or descriptive, or determined to be infringing on other marks. We may not be able to protect our rights to these trademarks and trade names or may be forced to stop using these names, which we need for name recognition by potential partners or customers in our markets of interest. During trademark registration proceedings, we may receive rejections of our applications by the USPTO or in other foreign jurisdictions. Although we would be given an opportunity to respond to those rejections, we may be unable to overcome such rejections. In addition, in the USPTO and in comparable agencies in many foreign jurisdictions, third parties are given an opportunity to oppose pending trademark applications and to seek to cancel registered trademarks. Opposition or cancellation proceedings may be filed against our trademarks, and our trademarks may not survive such proceedings. If we are unable to establish name recognition based on our trademarks and trade names, we may not be able to compete effectively and our business may be adversely affected. We may license our trademarks and trade names to third parties, such as distributors. Though these license agreements may provide guidelines for how

our trademarks and trade names may be used, a breach of these agreements or misuse of our trademarks and tradenames by our licensees may jeopardize our rights in or diminish the goodwill associated with our trademarks and trade names.

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, it 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. At times, competitors or other third parties 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. If we assert trademark infringement claims, a court may determine that the marks we have asserted are invalid or unenforceable, or that the party against whom we have asserted trademark infringement has superior rights to the marks in question. In this case, we could ultimately be forced to cease use of such trademarks.

Risks Related to Ownership of Our Common Stock

Our stock price may be volatile or may decline regardless of our operating performance, resulting in substantial losses for investors.

The market price of our common stock may be highly volatile and may fluctuate substantially as a result of a variety of factors, some of which are related in complex ways. The market price of our common stock may fluctuate significantly in response to numerous factors, many of which are beyond our control, including the factors listed below and other factors described in this "Risk Factors" section of this Annual Report on Form 10-K:

- the commencement, enrollment, or results of current and future preclinical studies and clinical trials we may conduct, or changes in the development status of our product candidates;
- adverse results or delays in clinical trials;
- unanticipated serious safety concerns related to the use of our product candidates;
- any delay in our regulatory filings for our product candidates and any adverse development or perceived adverse development with respect to the applicable regulatory authority's review of such filings, including, without limitation, the issuance by the FDA of a "refusal to file" letter or a request for additional information;
- changes in laws or regulations, including, but not limited to, preclinical study or clinical trial requirements for approvals;
- negative clinical outcomes or other adverse events related to product candidates being developed by others in the CNS field;
- publication of research reports about us or our industry, or CNS programs in particular, or positive or negative recommendations or withdrawal of research coverage by securities analysts;
- any adverse changes to our relationship with manufacturers or suppliers;
- manufacturing, supply or distribution shortages;
- our failure to commercialize our product candidates;
- general political conditions, including but not limited to, disruptions in U.S. government operations and funding, geopolitical conflicts such as the war between Russia and the Ukraine, the war between Israel and Hamas, and any sanctions or other repercussions that may result therefrom;
- general economic conditions, including but not limited to, rising inflation, recession risk, low consumer confidence and increasing interest rates;
- additions or departures of key scientific or management personnel;
- disputes or other developments relating to proprietary rights, including patents, litigation matters, and our ability to obtain patent protection for our technologies;
- variations in our results of operations;
- our cash position;
- our failure to meet the estimates and projections of the investment community or that we may otherwise provide to the public;

- announcements made by us or our competitors of new product and service offerings, acquisitions, strategic relationships, joint ventures, or capital commitments;
- our inability to establish collaborations, if needed;
- our ability to effectively manage our growth;
- changes in the market valuations of similar companies;
- press reports, whether or not true, about our business;
- sales or perceived potential sales of our common stock by us or our stockholders in the future;
- overall fluctuations in the equity markets;
- ineffectiveness of our internal controls;
- changes or developments in the global regulatory environment;
- litigation involving us, our industry or both, or investigations by regulators into our operations or those of our competitors;
- impact from the COVID-19 pandemic, or any future pandemic, on us or third parties with which we engage; and
- other events or factors, many of which are beyond our control.

In addition, the stock market in general and biotechnology and biopharmaceutical companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these companies. Broad market and industry factors may negatively affect the market price of our common stock, regardless of our actual operating, which may limit or prevent investors from selling their shares at or above the price paid for the shares and may otherwise negatively affect the liquidity of our common stock.

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

We expect our operating results to be subject to quarterly fluctuations, which will make it difficult for us to predict our future results. Our net loss and other operating results will be affected by numerous factors, including:

- timing and variations in the level of expense related to the current or future development of our programs, including but not limited to, the timing of the milestone payments;
- our ability to enroll patients in clinical trials and timing and status of enrollment for our clinical trials;
- results of clinical trials, or the addition or termination of clinical trials or funding support by us or potential future partners;
- the need to conduct unanticipated clinical trials or trials that are larger or more complex than anticipated;
- competition from products that compete with our product candidates, and changes in the competitive landscape of our industry, including consolidation among our competitors or partners;
- any delays in regulatory review or approval of our product candidates;
- stock-based compensation estimates;
- changes in general political conditions, including but not limited to, disruptions in U.S. government operations and funding, geopolitical conflicts such as the war between Russia and the Ukraine, the war between Israel and Hamas, and any sanctions or other repercussions that may result therefrom;
- changes in general economic conditions, including but not limited to, rising inflation, recession risk, low consumer confidence and increasing interest rates;
- our execution of any collaboration, licensing or similar arrangements, and the timing of payments we may make or receive under potential future arrangements or the termination or modification of any such potential future arrangements;
- any intellectual property infringement, misappropriation or violation lawsuit or opposition, interference or cancellation proceeding in which we may become involved;
- additions and departures of key personnel;
- strategic decisions by us or our competitors, such as acquisitions, divestitures, spin-offs, joint ventures, strategic investments or changes in business strategy;

- if any product candidate we may develop receive regulatory approval, the timing and terms of such approval and market acceptance and demand for such product candidates;
- the timing and cost to establish a sales, marketing and distribution infrastructure to commercialize any products for which we may obtain marketing approval and intend to commercialize on our own or jointly with current or future collaborators;
- the risk/benefit profile, cost and reimbursement policies with respect to our product candidates, if approved, and existing and potential future products that compete with any of our product candidates;
- our ability to commercialize our product candidates, if approved, inside and outside of the United States, either independently or working with third parties;
- our ability to establish and maintain collaborations, licensing or other arrangements;
- our ability to adequately support future growth;
- potential unforeseen business disruptions that increase our costs or expenses;
- regulatory developments affecting current or future product candidates or those of our competitors; and
- impact from the COVID-19 pandemic, or any future pandemic, on us or third parties with which we engage.

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

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

As of December 31, 2023, our executive officers, directors, holders of 5% or more of our capital stock and their respective affiliates owned approximately 55.67% of our outstanding voting stock. Therefore, these stockholders will have the ability to influence us through this ownership position. These stockholders may be able to determine all matters requiring stockholder approval. For example, these stockholders may be able to control elections of directors, amendments of our organizational documents, or approval of any merger, sale of assets, or other major corporate transaction. In addition, certain of our principal stockholders, including Amgen, ARCH Venture Partners and Mubadala Capital, have designated certain of our directors for election to the Board. This may prevent or discourage unsolicited acquisition proposals or offers for our common stock that you may feel are in your best interest as one of our stockholders.

Sales of a substantial number of shares of our common stock in the public market could cause our common stock price to fall.

If our existing stockholders sell, or indicate an intention to sell, or if the market perceives that such existing stockholders might sell, substantial amounts of our common stock in the public market after the lock-up and other legal restrictions on resale lapse, the market price of our common stock could decline. As of the completion of our initial public offering (including the partial exercise by the underwriters of their option to purchase additional shares), we had outstanding a total of 152,832,352 shares of common stock. Of these shares, substantially all of the shares of our common stock sold in the initial public offering are freely tradable, without restriction, in the public market.

The lock-up agreements entered into in connection with our IPO will expire at the close of business on March 12, 2024. J.P. Morgan Securities LLC and BofA Securities, Inc., in their sole discretion, may permit our equity holders who are subject to these lock-up agreements to sell shares prior to the expiration of the lock-up agreements. After the lock-up agreements expire, the shares of common stock will be eligible for sale in the public market. Approximately 55.65% of these additional shares are owned by directors, executive officers and other affiliates and will be subject to certain limitations of Rule 144 under the Securities Act of 1933, as amended (the "Securities Act").

In addition, approximately 37,902,417 shares of common stock that are either subject to outstanding options or reserved for future issuance under our equity incentive plans will become eligible for sale in the public market to the extent permitted by the provisions of various vesting schedules, the lock-up agreements and Rule 144 and Rule 701 under the Securities Act. If these additional shares of common stock are sold, or if it is perceived that they will be sold, in the public market, the market price of our common stock could decline.

In addition, the holders of approximately 123.8 million shares, or 86% of our total outstanding common, have rights, subject to some conditions, to require us to file registration statements covering the sale of their shares or to include their shares in registration statements that we may file for ourselves or our other stockholders, subject to the lock-up agreements described above. Registration of these shares under the Securities Act would result in the shares becoming freely tradable without restriction under the Securities Act, except for shares purchased by affiliates. Any sales of securities by these stockholders could have a material adverse effect on the market price of our common stock.

In addition, in the future, we may issue additional shares of common stock, or other equity or debt securities convertible into common stock, in connection with a financing, acquisition, employee arrangement, or otherwise. Any such issuance could result in substantial dilution to our existing stockholders and could cause the price of our common stock to decline.

We do not currently intend to pay dividends on our common stock and, consequently, our stockholders' ability to achieve a return on their investment will depend on appreciation of the value of our common stock.

We have never declared or paid cash dividends on our common stock. We currently intend to retain all available funds and any future earnings to support operations and to finance the growth and development of our business. We do not intend to declare or pay any cash dividends on our capital stock in the foreseeable future. As a result, any investment return on our common stock will depend upon increases in the value for our common stock, which is not certain.

Provisions in our amended and restated certificate of incorporation and our amended and restated bylaws and Delaware law might discourage, delay or prevent a change in control of our company or changes in our management and, therefore, depress the market price of our common stock.

Our amended and restated certificate of incorporation and amended and restated bylaws contain provisions that could depress the market price of our common stock by acting to discourage, delay, or prevent a change in control of our company or changes in our management that the stockholders of our company may deem advantageous. These provisions, among other things:

- establish a staggered board of directors divided into three classes serving staggered three-year terms, such that not all members of the board of directors will be elected at one time;
- authorize our board of directors to issue new series of preferred stock without stockholder approval and create, subject to applicable law, a series of preferred stock with preferential rights to dividends or our assets upon liquidation, or with superior voting rights to our existing common stock;
- eliminate the ability of our stockholders to call special meetings of stockholders;
- eliminate the ability of our stockholders to fill vacancies on our board of directors;
- establish advance notice requirements for nominations for election to our Board or for proposing matters that can be acted upon by stockholders at our annual stockholder meetings;
- permit our board of directors to establish the number of directors;
- provide that our board of directors is expressly authorized to make, alter or repeal our amended and restated bylaws;
- provide that stockholders can remove directors only for cause and only upon the approval of not less than 66-2/3% of all outstanding shares of our voting stock;
- require the approval of not less than 66-2/3% of all outstanding shares of our voting stock to amend our amended and restated bylaws and specific provisions of our certificate of incorporation; and
- the jurisdictions in which certain stockholder litigation may be brought.

As a Delaware corporation, we are subject to the anti-takeover provisions of Section 203 of the Delaware General Corporation Law, which prohibits a Delaware corporation from engaging in a business combination specified in the statute with an interested stockholder (as defined in the statute) for a period of three years after the date of the transaction in which the person first becomes an interested stockholder, unless the business combination is approved in advance by a majority of the independent directors or by the holders of at least two-thirds of the outstanding disinterested shares. The application of Section 203 of the Delaware General Corporation Law could also have the effect of delaying or preventing a change of control of our company.

Our amended and restated certificate of incorporation provides an exclusive forum in the Court of Chancery of the State of Delaware for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.

Our amended and restated certificate of incorporation provides that, unless we consent in writing to the selection of an alternative forum, the sole and exclusive forum, to the fullest extent permitted by law, for (1) any derivative action or proceeding brought on our behalf, (2) any action asserting a breach of a fiduciary duty owed by any director, officer or other employee to us or our stockholders, (3) any action asserting a claim against us or any director, officer, or other employee arising pursuant to the Delaware General Corporation Law, (4) any action to interpret, apply, enforce, or determine the validity of our second amended and restated certificate of incorporation or amended and restated bylaws or (5) any other action asserting a claim that is governed by the internal affairs doctrine, is the Court of Chancery of the State of Delaware (or another state court or the federal court located within the State of Delaware if the Court of Chancery does not have or declines to accept jurisdiction), in all cases subject to the court's having jurisdiction over indispensable parties named as defendants. In addition, our amended and restated certificate of incorporation provides that the federal district courts of the United States are the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act but that the forum selection provision does apply to claims brought to enforce a duty or liability created by the Exchange Act.

Although we believe these provisions benefit us by providing increased consistency in the application of Delaware law for the specified types of actions and proceedings, the provisions may result in increased costs to stockholders to bring a claim for any such dispute and may have the effect of discouraging lawsuits against us or our directors and officers. Alternatively, if a court were to find the choice of forum provision contained in our amended and restated 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 harm our business, financial condition, and operating results. For example, under the Securities Act, federal courts have concurrent jurisdiction over all suits brought to enforce any duty or liability created by the Securities Act, and investors cannot waive compliance with the federal securities laws and the rules and regulations thereunder. Any person or entity purchasing or otherwise acquiring any interest in our shares of capital stock will be deemed to have notice of and consented to this exclusive forum provision, but will not be deemed to have waived our compliance with the federal securities laws and the rules and regulations thereunder.

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

Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended (the Code), if a corporation undergoes an "ownership change," generally defined as a greater than 50 percentage point change (by value) in its equity ownership by certain stockholders over a three-year period, the corporation's ability to use its pre-change net operating loss carryforwards (NOLs) and other pre-change tax attributes (such as research and development tax credits) to offset its post-change income or taxes may be limited. We may have experienced ownership changes in the past and may experience additional ownership changes in the future as a result of subsequent shifts in our stock ownership (some of which are outside our control). As a result, our ability to use our pre-change NOLs and tax credits to offset future taxable income, if any, could be subject to limitations. Similar provisions of state tax law may also apply. As a result, even if we attain profitability, we may be unable to use a material portion of our NOLs and tax credits.

General Risk Factors

If securities or industry analysts either do not publish research about us or publish inaccurate or unfavorable research about us, our business or our market, or if they change their recommendations regarding our common stock adversely, the trading price or trading volume of our common stock could decline.

The trading market for our common stock is influenced in part by the research and reports that securities or industry analysts may publish about us, our business, our market, or our competitors. If one or more of these analysts initiate research with an unfavorable rating or downgrade our common stock, provide a more favorable recommendation about our competitors or publish inaccurate or unfavorable research about our business, our common stock price would likely decline. If any analyst covering us were to cease coverage of us or fail to regularly publish reports on us, we could lose visibility in the financial markets, which in turn could cause the trading price or trading volume of our common stock to decline.

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

As widely reported, global credit and financial markets have experienced extreme volatility and disruptions over the past several months, including concerns about declines in consumer confidence, declines in economic growth, increases in the rate of inflation, increases in borrowing rates and changes in liquidity and credit availability, and uncertainty about economic stability, including most recently in connection with actions undertaken by the U.S. Federal Reserve Board to address inflation, the failure of banks, the military conflict in Ukraine, the war between Israel and Hamas, the continuing effects of the COVID-19 pandemic and supply chain disruptions. There can be no assurance that future deterioration in global 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. If the current equity and credit markets deteriorate, it may make any necessary debt or equity financing more difficult, more costly and more dilutive, if at all possible. 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.

An active trading market for our common stock may not develop or be sustained.

Prior to our initial public offering in September 2023, there was no public market for shares of our common stock. Our common stock is currently listed on the Nasdaq Global Select Market under the symbol "NMRA". The price for our common stock may vary and an active or liquid market in our common stock may not be sustained. The lack of an active market may impair the value of your shares, your ability to sell your shares at the time you wish to sell them and the prices that you may obtain for your shares. An inactive market may also impair our ability to raise capital by selling our common stock and our ability to acquire other companies, products or technologies by using our common stock as consideration.

The continuing impact of "Brexit" may have a negative effect on our business.

Following a national referendum and subsequent legislation, the United Kingdom formally withdrew from the European Union, commonly referred to as "Brexit," and ratified a trade and cooperation agreement governing its future relationship with the European Union. Among other things, the agreement, which became effective in 2021, addresses trade, economic arrangements, law enforcement, judicial cooperation and governance. While the agreement provides a framework for cooperation between the UK and the EU including for example the mutual recognition of Good Manufacturing Practice (GMP) inspections of manufacturing facilities for medicinal products, it does not contain wholesale mutual recognition of pharmaceutical regulations and product standards. There may therefore be divergent local requirements in the UK compared to the EU in the future, which may increase the costs of conducting clinical and development activities in the UK.

We cannot yet predict the full implications of Brexit, including whether it will increase our operational costs or otherwise have a negative effect on our business, financial condition or results of operations, which could reduce the price of our common stock.

We are an emerging growth company and a smaller reporting company, and any decision on our part to comply only with certain reduced reporting and disclosure requirements applicable to emerging growth companies and smaller reporting companies could make our common stock less attractive to investors.

We are an "emerging growth company" as defined in the JOBS Act and a "smaller reporting company," as defined in the Exchange Act. For as long as we continue to be an emerging growth company, we may choose to take advantage of exemptions from various reporting requirements applicable to other public companies but not to emerging growth companies, including:

- not being required to have our independent registered public accounting firm audit our internal control over financial reporting under Section 404 of the Sarbanes-Oxley Act;
- reduced disclosure obligations regarding executive compensation in our periodic reports and annual report on Form 10-K; and
- exemptions from the requirements of holding non-binding advisory votes on executive compensation and stockholder approval of any golden parachute payments not previously approved.

We could be an emerging growth company for up to five years following the completion of our initial public offering. Our status as an emerging growth company will end as soon as any of the following takes place:

- the last day of the fiscal year in which we have more than $1.235 billion in annual revenue;
- the date we qualify as a "large accelerated filer," with at least $700.0 million of equity securities held by non-affiliates;
- the date on which we have issued, in any three-year period, more than $1.0 billion in non-convertible debt securities; or
- the last day of the fiscal year ending after the fifth anniversary of the completion of our initial public offering.

Under the JOBS Act, emerging growth companies can also delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have elected to use this extended transition period for any new or revised accounting standards during the period in which we remain an emerging growth company; however, we may adopt certain new or revised accounting standards early. As a result, these financial statements may not be comparable to companies that comply with the new or revised accounting pronouncements as of public company effective dates.

Even after we no longer qualify as an emerging growth company, we may continue to qualify as a smaller reporting company, which would allow us to rely on certain reduced disclosure requirements, such as an exemption from providing selected financial data and executive compensation information. We are also exempt from the requirement to obtain an external audit on the effectiveness of internal control over financial reporting provided in Section 404(b) of the Sarbanes-Oxley Act. These exemptions and reduced disclosures due to our status as a smaller reporting company mean that our auditors do not review our internal controls over financial reporting and may make it harder for investors to analyze our results of operations and financial prospects.

We cannot predict if investors will find our common stock less attractive if we choose to rely on any of the exemptions afforded to emerging growth companies and smaller reporting companies. If some investors find our common stock less attractive because we rely on any of these exemptions, there may be a less active trading market for our common stock and the market price of our common stock may be more volatile.

The requirements of being a public company may strain our resources, result in more litigation, and divert management's attention.

We are subject to the reporting requirements of the Exchange Act, the Sarbanes-Oxley Act, the Dodd-Frank Wall Street Reform and Consumer Protection Act, or the Dodd-Frank Act, the listing requirements of Nasdaq, and other applicable securities rules and regulations. Complying with these rules and regulations has increased and will increase our legal and financial compliance costs, make some activities more difficult, time consuming or costly and increase demand on our systems and resources. The Exchange Act requires, among other things, that we file annual, quarterly, and current reports with respect to our business and operating results. The Sarbanes-Oxley Act requires, among other things, that we maintain effective disclosure controls and procedures and internal control over financial reporting. We are required to disclose changes made in our internal control and procedures on a quarterly basis. In order to maintain and, if required, improve our disclosure controls and procedures and internal control over financial reporting to meet this standard, significant resources and management oversight may be required. As a result, management's attention may be diverted from other business concerns, which could adversely affect our business and operating results. We may also need to hire additional employees or engage outside consultants to comply with these requirements, which will increase our costs and expenses.

In addition, changing laws, regulations, and standards relating to corporate governance and public disclosure are creating uncertainty for public companies, increasing legal and financial compliance costs, and making some activities more time consuming. These laws, regulations, and standards are subject to varying interpretations, in many cases due to their lack of specificity and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices. We intend to invest resources to comply with evolving laws, regulations, and standards, and this investment may result in increased general and administrative expenses and a diversion of management's time and attention from revenue-generating activities to compliance activities. If our efforts to comply with new laws, regulations, and standards differ from the activities intended by regulatory or governing bodies due to ambiguities related to their application and practice, regulatory authorities may initiate legal proceedings against us and our business may be adversely affected.

These new rules and regulations may make it more expensive for us to obtain director and officer liability insurance and, in the future, we may be required to accept reduced coverage or incur substantially higher costs to obtain coverage. These factors could also make it more difficult for us to attract and retain qualified members of our board of directors, particularly to serve on our audit committee and compensation committee, and qualified executive officers.

By disclosing information in filings required by us as a public company, our business and financial condition will continue to become more visible, which we believe may result in threatened or actual litigation, including by competitors and other third parties. If those claims are successful, our business could be seriously harmed. Even if the claims do not result in litigation or are resolved in our favor, the time and resources needed to resolve them could divert our management's resources and seriously harm our business.

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, 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. The occurrence of any of these business disruptions could seriously harm our operations and financial condition and increase our costs and expenses.

If we fail to maintain proper and effective internal controls over financial reporting our ability to produce accurate and timely financial statements could be impaired.

Pursuant to Section 404 of the Sarbanes-Oxley Act, 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 become an "accelerated filer" or a "large accelerated filer." At that point, we will be required to have an independent registered public accounting firm attest to the effectiveness of our internal control over financial reporting. The rules governing the standards that must be met for management to assess our internal control over financial reporting are complex, judgmental and require significant documentation, testing and possible remediation. To comply with the requirements of being a reporting company under the Exchange Act, we will need to implement additional financial and management controls, reporting systems and procedures and hire additional accounting and finance staff.

We cannot assure you that there will not be material weaknesses or significant deficiencies in our internal control over financial reporting in the future. Any failure to maintain internal control over financial reporting could severely inhibit our ability to accurately report our financial condition, results of operations, or cash flows. If we are unable to conclude that our internal control over financial reporting is effective, or if we and/or our independent registered public accounting firm determines we have a material weakness or significant deficiency in our internal control over financial reporting, investors may lose confidence in the accuracy and completeness of our consolidated financial statements, the market price of our common stock could decline, and we could be subject to sanctions or investigations by Nasdaq, the SEC, or other regulatory authorities. Failure to remedy any material weakness in our internal control over financial reporting, or to implement or maintain other effective control systems required of public companies, could also restrict our future access to the capital markets.

Our disclosure controls and procedures may not prevent or detect all errors or acts of fraud.

We are subject to the periodic reporting requirements of the Exchange Act. We must design our disclosure controls and procedures to reasonably assure that information we must disclose in reports we file or submit under the Exchange Act is accumulated and communicated to management, and recorded, processed, summarized, and reported within the time periods specified in the rules and forms of the SEC. We believe that any disclosure controls and procedures or internal controls and procedures, no matter how well-conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. For example, our directors or executive officers could inadvertently fail to disclose a new relationship or arrangement causing us to fail to make a required related party transaction disclosure. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by an unauthorized override of the controls. Accordingly, because of the inherent limitations in our control system, misstatements due to error or fraud may occur and not be detected.

If our estimates or judgments relating to our critical accounting policies prove to be incorrect or financial reporting standards or interpretations change, our results of operations could be adversely affected.

The preparation of financial statements in conformity with generally accepted accounting principles in the United States (U.S. GAAP), requires management to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. We base our estimates on historical experience, known trends and events, and various other factors that we believe to be reasonable under the circumstances, as provided in "Management's Discussion and Analysis of Financial Condition and Results of Operations—Critical Accounting Policies and Estimates." The results of these estimates form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Significant assumptions and estimates used in preparing our consolidated financial statements include but are not limited to stock-based compensation and evaluation of acquisitions of assets and other similar transactions as well as clinical trial accruals. Our results of operations may be adversely affected if our assumptions change or if actual circumstances differ from those in our assumptions, which could cause our results of operations to fall below the expectations of securities analysts and investors, resulting in a decline in the trading price of our common stock.

Additionally, we regularly monitor our compliance with applicable financial reporting standards and review new pronouncements and drafts thereof that are relevant to us. As a result of new standards, changes to existing standards and changes in their interpretation, we might be required to change our accounting policies, alter our operational policies, and implement new or enhance existing systems so that they reflect new or amended financial reporting standards, or we may be required to restate our audited consolidated financial statements, unaudited condensed consolidated financial statements and related notes. Such changes to existing standards or changes in their interpretation may also have an adverse effect on our reputation, business, financial position, and profit.

Our information technology systems, or those used by our third-party research institution collaborators, CROs, CDMOs, or other contractors or consultants, may fail or suffer cyberattacks or security breaches.

We are increasingly dependent upon information technology systems, infrastructure and data to operate our business. In the ordinary course of business, we collect, store and transmit confidential information (including but not limited to intellectual property, proprietary business information and personal information of our customers, employees, and contractors). It is critical that we do so in a secure manner to maintain the confidentiality and integrity of such confidential information. We also have outsourced elements of our operations to third parties, and as a result we manage a number of third-party contractors who have access to our confidential information.

Despite the implementation of security measures, our information technology systems and those of our future CROs and CDMOs, and other contractors and consultants are vulnerable to attack, damage, or interruption from hacking, cyberattacks, "phishing" attacks and other social engineering schemes, computer viruses and malware (e.g., ransomware), malicious code, denial or degradation of service attacks, sophisticated nation-state and nation-state supported actors, unauthorized access or use by persons within our organization, natural disasters, terrorism, war and telecommunication and electrical failures, employee theft or misuse, human error, and fraud. Attacks upon information technology systems are increasing in their frequency, levels of persistence, sophistication and intensity, and are being conducted by sophisticated and organized groups and individuals with a wide range of motives and expertise. As a result of 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.

We and certain of our service providers are from time to time subject to cyberattacks and security incidents, including social engineering and phishing attacks. Furthermore, because the techniques used to obtain unauthorized access to, or to sabotage, systems change frequently and often are not recognized until launched against a target, we may be unable to anticipate these techniques or implement adequate preventative measures. We may also experience security breaches that may remain undetected for an extended period. 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. Although to our knowledge we have not experienced any such material system failure, accident, or security breach to date, if such an event were to occur and negatively affect, our operations, it could result in a material disruption of our development programs and our business operations. For example, the loss of clinical trial data from completed or future clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. Further, we cannot assure that our data protection efforts and our investment in information technology will prevent significant breakdowns, data leakages, breaches in our systems or other cyber incidents that could have a material adverse effect upon our reputation, business, operations or financial condition.

Likewise, we rely on our third-party research institution collaborators for research and development of our product candidates and other third parties for the manufacture of our product candidates and to conduct clinical trials, and similar events relating to their information technology systems could also have a material adverse effect on our business. To the extent that any disruption or security incident were to result in an actual or perceived loss of, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information or patient information, we could incur liability and the further development and commercialization of our product candidates could be delayed. Furthermore, significant disruptions of our internal information technology systems or security breaches could result in the loss, misappropriation, and/or unauthorized access, use, or disclosure of, or the prevention of access to, confidential information (including trade secrets or other intellectual property, proprietary business information, and personal information), which could result in financial, legal, business, and reputational harm to us. For example, any such event that leads to unauthorized access, use, or disclosure of personal information, including personal information regarding our clinical trial subjects or employees, could harm our reputation directly, compel us to comply with federal and/or state breach notification laws and foreign law equivalents, subject us to mandatory corrective action, and otherwise subject us to liability under laws and regulations that protect the privacy and security of personal information, which could result in significant legal and financial exposure and reputational damages that could potentially have an adverse effect on our business. Further, our insurance coverage may not be sufficient to cover the financial, legal, business or reputational losses that may result from an interruption or breach of our systems.

We have and will enter into collaboration, license, contract research and/or manufacturing relationships with organizations that operate in certain countries that are at heightened risk of theft of technology, data and intellectual property through direct intrusion by private parties or foreign actors, including those affiliated with or controlled by state actors. Accordingly, our efforts to protect and 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, and we may be at heightened risk of losing our proprietary intellectual property rights around the world, including outside of such countries, to the extent such theft or intrusion destroy the proprietary nature of our intellectual property.

We may be subject to claims that our employees, consultants, or independent contractors have wrongfully used or disclosed confidential information of third parties.

We have received confidential and proprietary information from third parties. In addition, we employ individuals who were previously employed at other biotechnology or biopharmaceutical companies. Although we try to ensure that individuals working for or collaborating with us do not use the proprietary information or know-how of others in their work for us, we may be subject to claims

that we or our employees, consultants, or independent contractors have inadvertently or otherwise used or disclosed confidential information proprietary to these third parties or our employees' former employers, or that we caused an employee to breach the terms of his or her non-competition or non-solicitation agreement. We may be subject to claims that patents and applications we have filed to protect inventions of our employees, consultants, advisors or other third parties, even those related to one or more of our product candidates, are rightfully owned by their former or concurrent employer. Litigation may be necessary to defend against these claims. Even if we are successful in defending against these claims, litigation could result in substantial cost and be a distraction to our management and employees. If our defenses to these claims fail, in addition to requiring us to pay monetary damages, a court could prohibit us from using technologies or features that are essential to our product candidates, if such technologies or features are found to incorporate or be derived from the trade secrets or other proprietary information of the former employers. Moreover, any such litigation or the threat thereof may adversely affect our reputation, our ability to form strategic alliances or sublicense our rights to collaborators, engage with scientific advisors or hire employees or consultants, each of which would have an adverse effect on our business, results of operations and financial condition. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management.

We could be subject to securities class action litigation.

In the past, securities class action litigation has often been instituted against companies following periods of volatility in the market price of a company's securities. This type of litigation, if instituted, could result in substantial costs and a diversion of management's attention and resources, which would harm our business, operating results, or financial condition. Additionally, the dramatic increase in the cost of directors' and officers' liability insurance may cause us to opt for lower overall policy limits or to forgo insurance that we may otherwise rely on to cover significant defense costs, settlements, and damages awarded to plaintiff.

ITEM 1B. Unresolved Staff Comments.

None.

ITEM 1C. Cybersecurity.

Management of Cybersecurity Risks and Cybersecurity Strategy

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

We design and assess our program based on the National Institute of Standards and Technology Cybersecurity Framework (NIST CSF). This does not imply that we meet any particular technical standards, specifications, or requirements, only that we use the NIST CSF as a guide to help us identify, assess, and manage cybersecurity risks relevant to our business.

Our cybersecurity program shares common methodologies, reporting channels and governance processes as the risk management programs of other departments within our company, including the legal, compliance, strategic, operational, and financial departments.

Our cybersecurity program includes:

- risk assessments designed to help identify material cybersecurity risks to our critical systems, information, products, services, and our broader enterprise information technology environment;
- a security team principally responsible for managing (i) our cybersecurity risk assessment processes, (ii) our security controls, and (iii) our response to cybersecurity incidents;
- the use of external service providers, where appropriate, to assess, test or otherwise assist with aspects of our security controls;
- cybersecurity awareness training of our employees, incident response personnel, and senior management;
- a cybersecurity incident response plan that includes procedures for responding to cybersecurity incidents; and
- ad hoc internal review of the cybersecurity practices of service providers, suppliers, and vendors who have access to our critical systems and information.

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. For more information, see the section titled “Risk Factor— Our information technology systems, or those used by our third-party research institution collaborators, CROs, CDMOs, or other contractors or consultants, may fail or suffer cyberattacks or security breaches.”

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 management’s implementation of our cybersecurity program.

The Committee receives annual reports 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 reports to the full Board regarding its activities, including those related to cybersecurity. The full Board also receives briefings from management on our cybersecurity program. Board members receive presentations on cybersecurity topics from our Director of Infrastructure and Cybersecurity, internal security staff or external experts as part of the Board’s continuing education on topics that impact public companies.

Our management team, including our Director of Infrastructure and Cybersecurity, Senior Vice President of Business Technology, and Chief Operating Officer, is responsible for assessing and managing our material risks from cybersecurity threats. The team has primary responsibility for our overall cybersecurity program and supervises both our internal cybersecurity personnel and our retained external cybersecurity consultants. Our management team’s experience includes demonstrated expertise in cybersecurity, life sciences, and security industry certifications such as CISM and CISSP.

Our management team supervises efforts to prevent, detect, mitigate, and remediate cybersecurity risks and incidents through various means, which may include briefings from internal security 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 are located in Watertown, Massachusetts, where we sublease approximately 31,000 square feet of office and laboratory space pursuant to a sublease agreement that expires in June 2025.

In March 2021, we entered into a lease agreement for an office facility in South San Francisco, California. The term of the lease commenced in April 2021 and ended in December 2023.

ITEM 3. Legal Proceedings.

We are not currently a party to any material legal proceedings. From time to time, we may, however, in the ordinary course of business become involved in legal proceedings. Regardless of outcome, litigation could have a material adverse effect on our us due to defense and settlement costs, diversion of management resources, negative publicity, reputational harm 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 trades under the symbol "NMRA" on the Nasdaq Global Select Market and began trading on September 15, 2023. Prior to that date, there was no public trading market for our common stock.

Holders of Our Common Stock

As of March 1, 2024, there were approximately 209 holders of record of shares of our common stock. The actual number of stockholders is greater than this number of record holders, and includes stockholders who are beneficial owners, but whose shares are held in street name by brokers and other nominees.

Dividend Policy

We have never declared or paid, and do not anticipate declaring or paying in the foreseeable future, any cash dividends on our capital stock. We currently intend to retain all available funds and any future earnings to support our operations and finance the growth and development of our business. Any future determination related to our dividend policy will be made at the discretion of our board of directors and will depend upon, among other factors, our results of operations, financial condition, capital requirements, contractual restrictions, business prospects and other factors our board of directors may deem relevant.

Securities Authorized for Issuance under Equity Compensation Plans

The information required by this item is incorporated by reference to the definitive Proxy Statement for our 2024 Annual Meeting of Stockholders, which will be filed with the SEC no later than 120 days after December 31, 2023.

Recent Sales of Unregistered Equity Securities

From January 1, 2023 through December 31, 2023, we sold and issued the following unregistered securities:

1. In December 2023, we issued 6,072,445 shares of our common stock to the former stockholders of BlackThorn in satisfaction of the Phase 3 navacaprant milestone payment.
2. We granted stock options and stock awards to employees, directors and consultants covering an aggregate of 7,798,056 shares of common stock, at a weighted-average exercise price of $7.23 per share. Of these, stock options covering an aggregate of 591,498 shares were cancelled or forfeited without being exercised.
3. We issued an aggregate of 14,460 shares of common stock upon the exercise of equity awards under our 2015 Plan for aggregate proceeds of approximately $0.1 million.
4. We issued an aggregate of 903,120 shares of common stock upon the exercise of equity awards under our 2020 Plan for aggregate proceeds of approximately $3.0 million.

Use of Proceeds from our Public Offering of Common Stock

On September 19, 2023, our registration statement on Form S-1 (File No. 333- 274229) relating to our IPO of common stock became effective, at which time the IPO was completed and we issued 14,710,000 shares of common stock at a public offering price of $17.00 per share. We received net proceeds from the IPO of $226.5 million, after deducting the underwriting discounts and commissions of $17.5 million and other offering expenses of $6.0 million. None of the expenses associated with the IPO were paid to directors, officers, persons owning 10% or more of any class of equity securities, or to our affiliates. J.P. Morgan Securities LLC, BofA Securities, Inc., Stifel, Nicolaus & Company, Incorporated, Guggenheim Securities, LLC, RBC Capital Markets, LLC and William Blair & Company, L.L.C. acted as joint book-running managers for the offering.

There has been no material change in the planned use of proceeds from the IPO from that described in the prospectus filed with the SEC pursuant to Rule 424(b)(4) under the Securities Act on September 18, 2023.

Issuer Purchases of Equity Securities

None.

ITEM 6. Reserved.

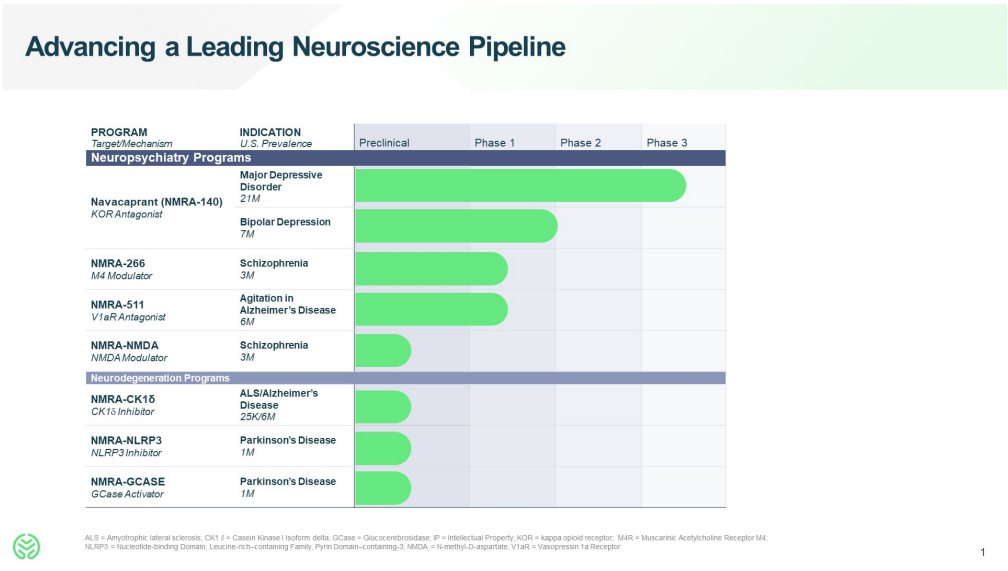
ITEM 7. Management's Discussion and Analysis of Financial Condition and Results of Operations.

The following discussion and analysis of our financial condition and results of operations should be read together with the consolidated financial statements and related notes included elsewhere in this Annual Report on Form 10-K. This discussion and analysis contains forward-looking statements based upon current beliefs, plans, and expectations related to future events and our future performance that involves risks, uncertainties, and assumptions, such as statements regarding our intentions, plans, objectives, and expectations for our business. Our actual results and the timing of selected events could differ materially from those discussed in the forward-looking statements as a result of several factors including those set forth in the section titled "Risk Factors." See also the section titled "Special Note Regarding Forward-Looking Statements".

Overview

We are a clinical-stage biopharmaceutical company founded to confront the global brain disease crisis by taking a fundamentally different approach to the way treatments for brain diseases are developed. We have rapidly scaled our therapeutic pipeline, which currently consists of seven clinical and preclinical neuroscience programs that target novel mechanisms of action for a broad range of underserved neuropsychiatric disorders and neurodegenerative diseases. Our most advanced product candidate, navacaprant (NMRA-140), is a novel once-daily oral kappa opioid receptor (KOR) antagonist that is being developed for the treatment of major depressive disorder (MDD), which we believe has the potential to provide significant advantages relative to the standard of care, if approved. In 2023, we initiated a pivotal Phase 3 program called the KOASTAL program evaluating navacaprant monotherapy in patients with moderate to severe MDD. The KOASTAL program includes three replicate Phase 3 studies, KOASTAL-1, KOASTAL-2 and KOASTAL-3 as well as an open-label extension study, KOASTAL-LT, designed to evaluate the long-term safety of navacaprant which were all initiated in 2023. We anticipate releasing topline results from the KOASTAL-1 study in the second half of 2024 and topline results from the KOASTAL-2 and KOASTAL-3 studies in the first half of 2025. We also expect to initiate a Phase 2 study for navacaprant in bipolar depression in the first half of 2024 and anticipate releasing results from that study in 2025. In addition to Navacaprant, NMRA-266 is a positive allosteric modulator program of the M4 muscarinic receptor (M4R) for the treatment of schizophrenia. NMRA-266 is designed to be selective for the M4 receptor subtype of the muscarinic receptor family. In 2023 we initiated a Phase 1 single ascending dose / multiple ascending dose (SAD/MAD) study in healthy adult participants. We expect data from the SAD/MAD study to be available in mid-2024 and we expect to initiate a Phase 1b study with NMRA-266 in adults with SCZ in the second half of 2024.

As shown in the table below, our current pipeline comprises seven programs, three of which are in clinical development and four of which are in preclinical development.



We were incorporated in November 2019 and commenced operations thereafter. To date, we have focused primarily on building our organization, acquiring technologies and companies, developing our precision neuroscience approach, identifying and developing potential product candidates, executing clinical and preclinical studies, organizing and staffing our company, business planning, establishing our intellectual property portfolio, raising capital and providing general and administrative support for these operations. We do not have any products approved for sale, we have not generated any revenue from the sale of products, and we do not expect to generate revenue from the sale of our product candidates until we complete clinical development, submit regulatory filings, and receive approvals from the applicable regulatory bodies for such product candidates, if ever.

In September 2023, we completed our initial public offering (IPO) pursuant to which we issued and sold an aggregate of 14,710,000 shares of our common stock at a price to the public of $17.00 per share. We received aggregate net proceeds of $226.5 million after deducting underwriting discounts and commissions of $17.5 million and other offering expenses of $6.0 million. As of December 31, 2023, we had $463.8 million in cash, cash equivalents and marketable securities. Based upon our current operating plan, we believe that our existing cash, cash equivalents and marketable securities, will enable us to fund our operating expenses and capital expenditure requirements through at least the next 12 months following the issuance of the consolidated financial statements.

Since our inception, we have incurred significant net losses, which are primarily attributable to acquired intangible in-process research and development intangible asset (IPR&D) costs pursuant to our acquisitions, which occurred in 2020 and were accounted for as an acquisition of assets. We expect to continue to incur significant losses for the foreseeable future as we continue to advance the development of our product candidates and approach, and incur additional costs associated with being a public company. Our net losses were $235.9 million and $130.9 million for the years ended December 31, 2023 and 2022, respectively. As of December 31, 2023, we had an accumulated deficit of $703.4 million. Our primary use of our capital resources is to fund our operating expenses, which consist primarily of expenditures related to identifying, acquiring, developing, and in-licensing our precision neuroscience approach and product candidates, and conducting preclinical studies and clinical trials, and to a lesser extent, general and administrative expenditures. Our net losses may fluctuate significantly from period to period, depending on the timing of our clinical trials and our expenditures on research and development activities.

We will need substantial additional funding to support our continuing operations and pursue our long-term business plan, including to complete the development and commercialization of our product candidates, if approved. Until such time as we can generate significant revenue from sales of our product candidates, if ever, we expect to finance our operations through public or private equity offerings or debt financings or other capital sources, which may include strategic collaborations or other arrangements with third parties, or other sources of financing. We may not be able to raise additional capital on terms acceptable to us or at all. If we are unable to raise additional capital on acceptable terms when needed, our business, results of operations, and financial condition would be adversely affected. The amount and timing of our future funding requirements will depend on many factors including the successful advancement of our precision neuroscience approach, programs, and product candidates. Our ability to raise additional funds may also be adversely impacted by potential worsening global economic conditions and disruptions to, and volatility in, the credit and financial markets in the United States and worldwide.

Acquisitions of Assets

We have completed various acquisitions. For details regarding our acquisitions, see Note 6 – Acquisitions of Assets to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Strategic License and Research and Collaboration Agreements

We have assumed license arrangements with certain third parties as a result of our acquisitions and have entered into several additional agreements with various parties. For details regarding these agreements, see Note 8 –Strategic License and Research and Collaboration Agreements to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Contingent Consideration

BlackThorn Contingent Consideration

Pursuant to the terms of the BlackThorn Merger Agreement, we are required to pay the former stockholders of BlackThorn contingent consideration (i) with respect to navacaprant, in the form of development and regulatory approval milestones of up to an aggregate amount of $365.0 million, which includes a milestone payment that became due in October 2023 upon dosing the first patient in the Phase 3 clinical trial for navacaprant, and sales-based milestones of up to an aggregate amount of $450.0 million and (ii) with respect to NMRA-511, in the form of development and regulatory approval milestones of up to an aggregate amount of $100.0 million, and sales-based milestones of up to an aggregate amount of $100.0 million (BlackThorn Milestones). At the Company's sole discretion, the BlackThorn Milestone payments may be settled in cash or shares of the Company, or a combination of both, subject to the provisions

of the BlackThorn Merger Agreement, other than one development milestone in the amount of $10.0 million, which must be settled in cash. In December 2023, we issued 6,072,445 shares of common stock based on the volume weighted average price per share prior to the date the milestone was met and paid $2.3 million in cash in satisfaction of the Phase 3 navacaprant milestone to the former stockholders of BlackThorn and participants in the carveout plan. As of December 31, 2023, none of the other BlackThorn Milestones have been achieved and no such related amounts were deemed due or payable.

Vanderbilt Contingent Consideration

Pursuant to the terms of the Vanderbilt License Agreement, we are required to pay Vanderbilt contingent consideration payable in cash up to an aggregate of $42.4 million upon the achievement of specified development milestones and up to an aggregate of $380.0 million upon the achievement of commercial milestone events as well as tiered royalties at mid-single digit percentages on potential future net sales. We achieved a $2.0 million development milestone in October 2023, which was paid in cash in November 2023. As of December 31, 2023, none of the other Vanderbilt milestones have been achieved and no such related amounts were deemed due or payable.

COVID-19 Impact

Although the World Health Organization has declared that COVID-19 no longer represents a global health emergency, the actual and perceived impact of COVID-19 and any effect on our business cannot be predicted. As a result, there can be no assurance that we will not experience additional negative impacts associated with COVID-19, which could be significant and may delay our initiation of preclinical studies and clinical trials, interrupt our supply chain, disrupt regulatory activities or have other adverse effects on our business and operations. Our focus remains on promoting measures intended to help minimize our risk of exposure to the virus for our employees, including policies that allow our employees to work remotely.

Components of Operating Results

Operating Expenses

Research and Development

Research and development expenses consist of external and internal expenses, and primarily relate to our discovery efforts and development of our precision neuroscience approach, programs, and product candidates. We account for acquired in-process research and development (IPR&D) expenses from our strategic acquisitions, which account for a significant portion of our operating expenses, separately from research and development expenses.

External research and development expenses include, among others, amounts incurred with contract research organizations (CROs), contract manufacturing organizations (CMOs), preclinical testing organizations and other vendors that conduct research and development activities on our behalf. Internal research and development expenses include, among others, personnel-related costs, including salaries, benefits and stock-based compensation for employees engaged in research and development functions, laboratory supplies and other non-capital equipment utilized for in-house research, software development costs and allocated expenses including facilities costs and depreciation and amortization.

Because we are working on multiple research and development programs at any one time, we track our external expenses by the stage of program, clinical or preclinical. However, our internal expenses, including unallocated costs, employees and infrastructure are not directly tied to any one program and are deployed across multiple programs. As such, we do not track internal expenses on a specific program basis.

We expense research and development costs as incurred. Amounts recorded for external goods or services incurred for research and development activities that have not yet been invoiced are included in accrued liabilities in our consolidated balance sheets and often represent estimates. We estimate accrued expenses and the related research and development expense based on the level of services performed but not yet invoiced pursuant to agreements established with our service providers, according to the progress of preclinical studies, clinical trials or related activities, and discussions with applicable personnel and service providers as to the progress or state of consummation of goods and service. Payments for these activities are based on the terms of the individual agreements, which may differ from the pattern of costs incurred, and are reflected in our consolidated financial statements as prepaid expenses or other current assets or accrued liabilities. Nonrefundable advance payments that we make for goods or services to be received in the future for use in research and development activities are recorded as prepaid expenses. Such amounts are recognized as an expense as the goods are delivered or the related services are performed, or until it is no longer expected that the goods will be delivered, or the services rendered.

We expect our research and development expenses to increase substantially for the foreseeable future as we incur costs to further develop our precision neuroscience approach and advance our programs and product candidates through clinical development and pursue regulatory approval of our product candidates. The process of conducting the necessary clinical and preclinical research to obtain regulatory approval is costly and time-consuming, and the successful development of our product candidates is highly uncertain. As a result of the uncertainties discussed below, we are unable to determine the duration and completion costs of our research and development projects or when and to what extent we will generate revenue from the commercialization and sale of our product candidates.

Our research and development expenses may vary significantly based on factors such as:

- per patient trial costs;
- the number of trials required for approval;
- the number of sites included in the trials;
- the countries in which the trials are conducted;
- the length of time required to enroll eligible patients;
- the number of patients that participate in the trials;
- the drop-out or discontinuation rates of patients;
- potential additional safety monitoring requested by regulatory agencies;
- the duration of patient participation in the trials and follow-up;
- the cost and timing of manufacturing our product candidates;
- the phase of development of our product candidates;
- the efficacy and safety profile of our product candidates;
- the number and scope of preclinical and IND-enabling studies;
- the effectiveness of our precision neuroscience approach at identifying target patient populations and utilizing the approach to enrich our patient population in our clinical trials;
- employee-related costs for personnel engaged in the design, development, testing and enhancement of our precision neuroscience related technology;
- the extent to which we establish additional collaboration or license agreements;
- whether we choose to partner any of our product candidates and the terms of such partnership; and
    - the impact of general economic conditions, such as rising inflation and increasing interest rates.

A change in the outcome of any of these variables with respect to the development of any of our product candidates could significantly change the costs and timing associated with the development of that product candidate. We may never succeed in obtaining regulatory approval for any of our product candidates. We may obtain unexpected results from our preclinical studies and future clinical trials.

Acquired In-Process Research and Development

Acquired in-process research and development expenses consist of existing research and development projects at the time of the acquisition. Projects that qualify as IPR&D assets represent those that have not yet reached technological feasibility and have no alternative future use. Our acquisitions of assets have all included IPR&D assets that had not yet reached technological feasibility and had no alternative future use, which resulted in a write-off of these IPR&D assets to acquired in-process research and development expenses in our consolidated statement of operations and comprehensive loss.

General and Administrative

General and administrative expenses include, among others, personnel-related costs, including salaries, benefits, and stock-based compensation for our employees in executive, finance, and other administrative functions, legal fees, professional fees incurred for accounting, audit, and tax services, recruiting costs, and other allocated expenses, including facilities costs and depreciation and amortization not included in research and development expenses. Legal fees are included within general and administrative expenses and are related to corporate and intellectual property related matters.

We expect our general and administrative expenses to increase substantially in the foreseeable future as we continue to support our research and development activities, grow our business and, if any of our product candidates receive marketing approval, commence commercialization activities. We will also continue to incur additional expenses associated with operating as a public company, including increased expenses related to audit, legal, regulatory, and tax-related services associated with maintaining compliance with the rules and regulations of the SEC and standards applicable to public companies, additional insurance expenses, investor relations activities and other administrative and professional services.

Other Income (Expense)

Interest Income

Interest income consists of interest earned on our cash equivalents and marketable securities.

Other Income (Expense), Net

Other income (expense), net consists primarily of changes in the fair value of our convertible preferred stock warrant liability prior to settlement in 2022.

Results of Operations

For the Years Ended December 31, 2023 and 2022

The following table summarizes our result of operations for the periods presented:

	Year Ended December 31,		
	2023	2022	Change
	(in thousands)		
Operating expenses:			
Research and development	$ 142,719	$ 91,749	$ 50,970
Acquired in-process research and development	63,904	13,000	50,904
General and administrative	45,475	31,121	14,354
Total operating expenses	252,098	135,870	116,228
Loss from operations	(252,098)	(135,870)	(116,228)
Other income (expense):			
Interest income	16,611	4,561	12,050
Other income (expense), net	(170)	405	(575)
Total other income (expense)	16,441	4,966	11,475
Net loss before income taxes	(235,657)	(130,904)	(104,753)
Provision for income taxes	268	—	268
Net loss	$ (235,925)	$ (130,904)	$ (105,021)

Research and Development Expenses

The following table summarizes our research and development expenses by program for the periods presented:

	Year Ended December 31,		
	2023	2022	Change
	(in thousands)		
Direct external program expenses:			
Navacaprant (NMRA-140) program	$ 37,929	$ 9,685	$ 28,244
NMRA-511 program	6,588	860	5,728
NMRA-266 program	9,512	4,601	4,911
Preclinical programs	12,617	11,597	1,020
Internal and unallocated expenses:			
Personnel-related costs	36,789	27,445	9,344
Other costs	39,284	37,561	1,723
Total research and development expenses	$ 142,719	$ 91,749	$ 50,970

Research and development expenses increased by $51.0 million, or 56%, to $142.7 million for the year ended December 31, 2023 from $91.7 million for the year ended December 31, 2022 as we ramped up our clinical and preclinical programs and related activities. Direct external program expenses increased by $39.9 million, of which $28.2 million was related to the initiation of our pivotal phase 3 clinical trials for navacaprant, $5.7 million was attributable to NMRA-511 primarily driven by our Phase 1 multiple ascending dose clinical trial and $4.9 million was attributable to NMRA-266 primarily due to activities related to our IND application and the initiation of a phase 1 single ascending dose / multiple ascending dose study in the fourth quarter of 2023. Internal and unallocated expenses increased by $11.1 million, which were primarily due to $9.3 million related to personnel related costs as we grew our headcount, including $3.8 million related to stock-based compensation, $1.0 million related to an increase in facilities expenses due the sublease of additional premises and $0.7 million related to software and related technology costs.

Acquired In-Process Research and Development Expenses

Acquired in-process research and development expenses increased by $50.9 million, or 392%, to $63.9 million for the year ended December 31, 2023 from $13.0 million for the year ended December 31, 2022. For the year ended December 31, 2023, acquired in-process research and development expenses consisted of $61.1 million related to achievement of the Phase 3 navacaprant development milestone and $2.8 million related to our in-license from Vanderbilt, as these assets had not yet reached technological feasibility and had no alternative future use. For the year ended December 31, 2022, acquired in-process research and development expenses consisted of costs to acquire rights to IPR&D assets upon the execution of our in-license from Vanderbilt.

General and Administrative Expenses

General and administrative expenses increased by $14.4 million, or 46%, to $45.5 million for the year ended December 31, 2023 from $31.1 million for the year ended December 31, 2022 as we continued to expand our administrative functions to support our business. The increase was primarily attributable to $10.1 million higher personnel-related costs, including $5.1 million related to stock-based compensation, as we grew our headcount, a $2.8 million increase in professional services mainly related to recruiting, strategic planning and research, accounting and advisory, a $0.7 million increase in external services mainly related to program branding and other initiatives and a $0.5 million increase in business insurance.

Interest Income

Interest income increased by $12.1 million to $16.6 million for the year ended December 31, 2023 from $4.6 million for the year ended December 31, 2022, which was attributable to interest earned on our higher balances in cash equivalents and marketable securities.

Other Income (Expense), Net

Other income (expense), net changed by $0.6 million to $0.2 million expense for the year ended December 31, 2023 from $0.4 million income for the year ended December 31, 2022, primarily due to the change in fair value of our convertible preferred stock warrant liability in 2022 prior to settlement.

Liquidity and Capital Resources

Sources of Liquidity

As of December 31, 2023, we had $463.8 million of cash, cash equivalents and marketable securities. Prior to our IPO we primarily funded our operations with the net proceeds from the sale and issuance of our convertible preferred stock and convertible promissory notes and raised gross cash proceeds of over $600 million including from the sale of convertible preferred stock, borrowings pursuant to convertible promissory notes and cash acquired in our acquisitions of assets. On September 19, 2023, we completed our IPO pursuant to which we issued and sold an aggregate of 14,710,000 shares of common stock at a price to the public of $17.00 per share. We received aggregate net proceeds of $226.5 million after deducting underwriting discounts and commissions of $17.5 million and other offering expenses of $6.0 million.

Since our inception, we have not generated any revenue from the sale of products and we have incurred significant net losses and negative cash flows from operations. Our primary use of our capital resources is to fund our operating expenses, which consist primarily of expenditures related to identifying, acquiring, developing, and in-licensing our precision neuroscience approach, programs, and product candidates, and conducting preclinical studies and clinical trials, and to a lesser extent, general and administrative expenditures. We have not yet commercialized any products and we do not expect to generate revenue from sales of any product candidates for a number of years, if ever. As of December 31, 2023, we had an accumulated deficit of $703.4 million.

Future Funding Requirements

We expect our expenses and operating losses will increase substantially over the foreseeable future as we continue our research and development efforts, advance our product candidates through clinical and preclinical development, enhance our precision neuroscience approach and programs, expand our product pipeline, seek regulatory approval, prepare for commercialization, as well as hire additional personnel and protect our intellectual property, Furthermore, as a result of the completion of our IPO on September 19, 2023, we have incurred and will continue to incur additional costs associated with being a public company. We also expect to increase the size of our administrative function to support the growth of our business. Our net losses may fluctuate significantly from period to period, depending on the factors described below. We are subject to the risks typically related to the development of new products, and we may encounter unforeseen expenses, difficulties, complications, delays, and other unknown factors that may adversely affect our business. The expected increase in expenses will be driven in large part by our ongoing activities, and our future capital requirements will depend on many factors, including:

- the scope, timing, progress, costs and results of discovery, preclinical development and clinical trials for our current or future product candidates;
- the number of clinical trials required for regulatory approval of our current or future product candidates;
- the costs, timing and outcome of regulatory review of any of our current or future product candidates;
- the costs associated with acquiring or licensing additional product candidates, technologies or assets, including the timing and amount of any milestones, royalties or other payments due in connection with our acquisitions and licenses;
- the cost of manufacturing clinical and commercial supplies of our current or future product candidates;
- the costs and timing of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending any intellectual property-related claims, including any claims by third parties that we are infringing upon their intellectual property rights;
- the effectiveness of our precision neuroscience approach at identifying target patient populations and utilizing our approach to enrich our patient population in our clinical trials;
- our ability to maintain existing, and establish new, strategic collaborations or other arrangements and the financial terms of any such agreements, including the timing and amount of any future milestone, royalty or other payments due under any such agreement;
- our ability to access additional multimodal patient datasets;
- the costs and timing of future commercialization activities, including manufacturing, marketing, sales and distribution, for any of our product candidates for which we receive marketing approval;
- the revenue, if any, received from commercial sales of our product candidates for which we receive marketing approval;
- expenses to attract, hire and retain skilled personnel;
- the costs of operating as a public company;

- our ability to establish a commercially viable pricing structure and obtain approval for coverage and adequate reimbursement from third-party and government payers;
- the effect of macroeconomic trends including inflation and rising interest rates;
- addressing any potential supply chain interruptions or delays, including those related to geopolitical issues or the COVID-19 pandemic;
- the effect of competing technological and market developments; and
- the extent to which we acquire or invest in business, products and technologies.

Based upon our current operating plan, we believe that our existing cash, cash equivalents and marketable securities will enable us to fund our operating expenses and capital expenditure requirements through at least the next 12 months following the issuance of the consolidated financial statements. However, we anticipate that we will need to raise additional financing in the future to fund our operations, including the commercialization of any approved product candidates. We have based this estimate on assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we expect. We may also raise additional financing on an opportunistic basis in the future. We expect to continue to expend significant resources for the foreseeable future.

To complete the development and commercialization of our product candidates, if approved, we will require substantial additional funding. Until such time as we can generate significant revenue from sales of our product candidates, if ever, we expect to finance our operations through public or private equity offerings or debt financings or other capital sources, which may include strategic collaborations or other arrangements with third parties, or other sources of financing.

Cash Flows

The following table summarizes our cash flows for the periods presented:

	Year Ended December 31,	
	2023	2022
	(in thousands)	
Net cash (used in) provided by:		
Operating activities	$ (163,278)	$ (114,896)
Investing activities	64,387	(168,013)
Financing activities	231,936	115,743
Net change in cash and cash equivalents and restricted cash	$ 133,045	$ (167,166)

Operating Activities

Net cash used in operating activities for the year ended December 31, 2023 was $163.3 million, which consisted of a net loss of $235.9 million and a change in our net operating assets and liabilities of $8.9 million, which was partially offset by $17.6 million in noncash charges and $63.9 million IPR&D expense related to achievement of the Phase 3 navacaprant development milestone and a milestone payment under our Vanderbilt in-license agreement. The change in our net operating assets and liabilities primarily resulted from and an increase of $11.4 million in prepaid expenses and other current assets related to our clinical programs and a decrease of $3.4 million in operating lease liabilities, partially offset by an increase of $5.9 million in accounts payable and accrued liabilities due to increased activities and the timing of our accounts payable. The noncash charges primarily consisted of $17.2 million of stock-based compensation, $3.4 million of noncash operating lease expense and $0.7 million of depreciation and amortization, partially offset by $3.7 million of net accretion of discounts on marketable securities.

Net cash used in operating activities for the year ended December 31, 2022 was $114.9 million, which consisted of a net loss of $130.9 million and a change in our net operating assets and liabilities of $6.9 million, partially offset by $10.0 million in noncash charges and $13.0 million IPR&D assets acquired from Vanderbilt that were expensed to acquired in-process research and development upon acquisition because the assets had not yet reached technological feasibility and had no alternative future use. The change in our net operating assets and liabilities primarily resulted from a decrease of $2.9 million in accounts payable and accrued liabilities due to the timing of our accounts payable, an increase of $2.3 million in prepaid expenses and other current assets and other assets primarily related to our collaboration with Amgen and a decrease of $1.8 million in operating lease liabilities. The noncash charges primarily consisted of $8.3 million of stock-based compensation, $2.1 million of noncash operating lease expense and $0.6 million of depreciation and amortization, partially offset by $0.7 million of net accretion of discounts on marketable securities and $0.6 million in change in fair value of convertible preferred stock warrants.

Investing Activities

Net cash provided by investing activities for the year ended December 31, 2023 was $64.4 million, which primarily consisted of $178.2 million in proceeds from sales and maturities of marketable securities, partially offset by $109.1 million in purchases of marketable securities and $4.6 million cash paid for acquisition of assets, including upon achievement of milestones.

Net cash used in investing activities for the year ended December 31, 2022 was $168.0 million, which consisted of $226.4 million in purchases of marketable securities, $13.0 million of cash used to acquire IPR&D assets from Vanderbilt and $0.5 million of purchases of property and equipment primarily to support our research and development activities, partially offset by proceeds of $71.9 million from sales and maturities of marketable securities.

Financing Activities

Net cash provided by financing activities for the year ended December 31, 2023 was $231.9 million, which primarily consisted of $232.6 million in proceeds from the issuance of common stock upon the completion of our IPO, net of underwriting commissions and discounts and $2.9 million in proceeds from exercise of stock options, partially offset by $3.8 million in payments of issuance costs in connection with our IPO.

Net cash provided by financing activities for the year ended December 31, 2022 was $115.7 million, which consisted of $112.2 million from the issuance and sale of our Series B convertible preferred stock and $2.7 million in proceeds from the exercise of stock options and $1.6 million of proceeds from exercise of warrants, partially offset by $0.7 million in payments for offering costs.

Contractual Obligations and Other Commitments

Our contractual obligations and commitments relate primarily to our operating lease for our office and laboratory facilities located in Massachusetts with a noncancelable lease term expiring in June 2025. As of December 31, 2023, undiscounted future minimum lease payments of $5.6 million remain on our operating lease. See Note 7 – Commitments and Contingencies to our consolidated financial statements for further information. Additionally, as of December 31, 2023, we have amounts due to Amgen pursuant to our September 2021 research and collaboration arrangement within the next year totaling $6.3 million. See Note 8 – Strategic License and Research and Collaboration Agreements to our consolidated financial statements for further information.

We have entered into a number of acquisitions of assets that are summarized in Note 6 – Acquisitions of Assets to our consolidated financial statements. As part of these acquisitions of assets, we are obligated to pay cash and/or stock for future contingent payments that are dependent upon future events, and in some cases, vesting by the recipient of the contingent payment, such as our achievement of certain development, regulatory, and commercial milestones. We have also assumed license arrangements with various third parties, primarily as a result of our acquisitions, and have entered into additional agreements that are summarized in Note 8 –Strategic License and Research and Collaboration Agreements to our consolidated financial statements. In accordance with these agreements, we are obligated to pay, among other items, future contingent payments that are uncertain and dependent upon future events such as our achievement of certain development, regulatory, and commercial milestones royalties, and sublicensing revenue in the future, as applicable. In October 2023, in connection with our acquisition of BlackThorn, a milestone became due upon dosing the first patient in the Phase 3 clinical trial for navacaprant, which was settled in stock and cash in December 2023. In October 2023, in connection with our Vanderbilt License Agreement, a development milestone of $2.0 million became due, which was paid in cash in November 2023.

Critical Accounting Estimates

Our management's discussion and analysis of the financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with the U.S. generally accepted accounting principles, or GAAP. The preparation of our consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, expenses, and related disclosures. Our estimates are based on historical experience and on various other factors that are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

While our significant accounting policies are described in Note 2 to our audited consolidated financial statements included elsewhere in this Annual Report on Form 10-K, we believe that the following accounting policies are critical to understanding our historical and future performance, as these policies relate to the more significant areas involving management's judgments and estimates.

Acquisitions

We evaluate mergers, acquisitions and other similar transactions to assess whether the transaction should be accounted for as a business combination or an acquisition of assets. We first identify who is the acquiring entity by determining if the target is a legal entity or a group of assets or liabilities. If control over a legal entity is being evaluated, we also evaluate if the target is a variable interest or voting interest entity. For acquisitions of voting interest entities, we apply a screen test to determine if substantially all of the fair value of the gross assets acquired is concentrated in a single identifiable asset or group of similar identifiable assets. If the screen is met, the transaction is accounted for as an acquisition of assets. If the screen is not met, further determination is required as to whether we have acquired inputs and processes that have the ability to create outputs which would meet the definition of a business. Significant judgment is required in the application of the screen test to determine whether an acquisition is a business combination or an acquisition of assets.

For an acquisition of assets, a cost accumulation model is used to determine the cost of the acquisition. Common stock and convertible preferred stock issued as consideration in an acquisition of assets are generally measured based on the acquisition date fair value of the equity interests issued. We also determine if any components of a transaction should be accounted for as a part of an acquisition of assets and which should be accounted for separately. Direct transaction costs are recognized as part of the cost of an acquisition of assets. We also evaluate which elements of a transaction should be accounted for as a part of an acquisition of assets and which should be accounted for separately.

The cost of an acquisition of assets, including transaction costs, are allocated to identifiable assets acquired and liabilities assumed based on a relative fair value basis. Goodwill is not recognized in an acquisition of assets. Any difference between the cost of an acquisition of assets and the fair value of the net assets acquired is allocated to the non-monetary identifiable assets based on their relative fair values. Assets acquired as part of an acquisition of assets that are considered to be IPR&D are immediately expensed unless there is an alternative future use in other research and development projects.

In addition to upfront consideration, our acquisition of assets may also include contingent consideration payments to be made for future milestone events or royalties on net sales of future products. We assess whether such contingent consideration is subject to liability classification and fair value measurement or meets the definition of a derivative. Contingent consideration payments in an acquisition of assets not required to be classified as a liability, or are accounted for as derivatives that qualify for a scope exception from derivative accounting, are recognized when the contingency is resolved, and the consideration is paid or becomes payable. Contingent consideration payments required to be classified as a liability, or accounted for as derivatives and do not qualify for a scope exception from derivative accounting, are recorded at fair value on the date of the acquisition and are subsequently remeasured to fair value at each reporting date. At the time a contingent consideration payment is made, we determine whether the payment should be expensed or capitalized as an intangible asset based on the status of the IPR&D project. Further, any future payments that are contingent upon continued services to us are treated as compensation and are recognized beginning when it is probable such amounts become payable through the date that the contingency is met.

Research and Development Expenses and Related Accrued Expenses

We record research and development expenses to operations as incurred. Research and development expenses represent costs incurred by us for the discovery and development of our product candidates and the development of our precision neuroscience technology and include: internal research and development expense, including personnel-related expenses (such as salaries, benefits and noncash stock-based compensation) and other expenses, including laboratory supplies and other non-capital equipment utilized for in-house research, research and consulting expenses, software development costs, license fees and allocated expenses, including facilities costs and depreciation and amortization; external research and development expenses incurred under arrangements with vendors conducting research and development services on our behalf, such as CROs, preclinical testing organizations, or CMOs. Costs to develop our technologies are recorded as research and development expense unless the criteria to be capitalized as internal-use software costs is met.

We have entered into various agreements with CROs and other vendors for clinical, non-clinical and manufacturing services. Payments made prior to the receipt of goods or services to be used in research and development are capitalized and recognized as expense in the period in which the related goods are received or services are realized or consumed. If the costs have been prepaid, this expense reduces the prepaid expenses in the consolidated balance sheets, and if not yet invoiced, the costs are included in accrued liabilities in the consolidated balance sheets. These costs are a significant component of our research and development expenses. We record amortization of prepaid expenses for these costs based on the estimated amount of work completed and in accordance with agreements established with these third parties. Such payments are evaluated for current or noncurrent classification based on when they will be realized. We estimate and record accrued research and development expenses based on the level of services performed but not yet invoiced pursuant to agreements established with our service providers, according to the progress of preclinical studies, clinical trials or related activities, and discussions with applicable personnel and service providers as to the progress or state of consummation of goods and services.

During the course of a clinical trial, the rate of expense recognition is adjusted if actual results differ from our estimates. We make judgments and estimates of accrued expenses as of each balance sheet date in our consolidated financial statements based on the facts and circumstances known at that time. The clinical trial accrual is dependent in part upon the timely and accurate reporting of CROs, CMOs and other third-party vendors. Although we do not expect our estimates to be materially different from amounts actually incurred, our estimates may vary from the actual results. To date, we have not experienced material differences between our accrued expenses and actual expenses.

We have and may continue to enter into license agreements to access and utilize certain technology. We evaluate if the license agreement is an acquisition of an asset or a business. To date, none of our license agreements have been considered to be an acquisition of a business. For acquisitions of assets, the upfront payments to acquire such licenses, as well as any future milestone payments made before product approval, are immediately recognized as acquired in-process research and development expense when due, provided there is no alternative future use of the rights in other research and development projects. These license agreements may also include contingent consideration in the form of cash. We assess whether such contingent consideration is subject to liability classification and fair value measurement or meets the definition of a derivative. Contingent consideration payments not required to be classified as a liability are accounted for as derivatives that qualify for a scope exception from derivative accounting, and are recognized when the contingency is resolved and the consideration is paid or becomes payable.

Stock-Based Compensation

We measure and record expense related to all equity awards granted to employees and non-employees, including stock options and restricted stock awards, based on estimated fair values as of their grant dates. For stock-based awards with service conditions only, we recognize expense on a straight-line basis over the requisite service period, which is generally the vesting period of the respective award. For awards with performance conditions, we evaluate the probability of achieving the performance conditions at each reporting date. We recognize expense using an accelerated attribution method when it is deemed probable that the performance condition will be met. For awards with both market and service vesting conditions, we recognize expenses using the accelerated attribution method over the derived requisite service period. Stock-based compensation is classified in our consolidated statements of operations and comprehensive loss based on the function to which the related services are provided and is recognized for the portion of awards that have vested. Forfeitures are accounted for as they occur.

The fair value of restricted stock awards is determined on the date of grant based on the estimated fair value of our common stock on that date. The fair value of stock options with service vesting conditions is determined using the Black-Scholes option pricing model, which requires inputs based on certain subjective assumptions. These assumptions include:

- *Fair Value of Common Stock*—Prior to our IPO, there was no public market for our common stock. As such, the estimated fair value of our common stock was determined at each grant date by our board of directors, with input from management, considering our most recently available third-party valuations of common stock and our board of directors' assessment of additional objective and subjective factors that it believed were relevant, and factors that may have changed from the date of the most recent valuation through the date of the grant. For awards granted subsequent to our IPO, the grant date fair value of

common stock was determined by using the closing price per share of common stock as reported on the Nasdaq Global Select Market.

- *Expected Volatility*—As there is limited trading history for our common stock, we have determined expected volatility based on the average historical stock price volatility of comparable publicly traded companies and expect to continue to do so until such time as we have adequate historical data regarding the volatility of our own traded stock price. The comparable companies are chosen based on their similar size, stage in the life cycle or area of therapeutic focus. The historical volatility is calculated based on a period of time commensurate with the expected term assumption.
- *Expected Term*—The expected term of our stock options is estimated using the simplified method for awards that qualify as plain-vanilla stock options. The simplified method calculates the expected term as the average of the time-to-vesting and the contractual life of the stock options.
- *Risk-Free Interest Rate*—We base the risk-free interest rate on the U.S. Treasury yield curve in effect at the time of grant of the award for time periods approximately equal to the expected term of the award.
- *Expected Dividend Yield*—The expected dividend yield is assumed to be zero as we have never paid and have no plans to pay dividends on our common stock in the foreseeable future.

See Note 11 to our audited consolidated financial statements for information concerning certain of the specific assumptions we used in applying the Black-Scholes option pricing model to determine the estimated fair value of our stock options granted in the periods presented. Such assumptions involve inherent uncertainties and the application of significant judgment. As a result, if factors or expected outcomes change and we use significantly different assumptions or estimates, our stock-based compensation expense could be materially different.

JOBS Act Accounting Smaller Reporting Company Elections

We are an "emerging growth company," as defined in the JOBS Act. Under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards issued subsequent to the enactment of the JOBS Act until those standards apply to private companies.

We have elected to use this extended transition period for complying with certain new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, our consolidated financial statements may or may not be comparable to companies that comply with new or revised accounting pronouncements as of public companies' effective dates.

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 have elected to 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 the market value of 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 the market value of 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 included elsewhere in this Annual Report on Form 10-K for more information.

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

We are exposed to market risk in the ordinary course of our business. Market risk represents the risk of loss that may impact our financial condition due to adverse changes in financial market prices and rates. Our market risk exposure is primarily the result of fluctuations in interest rates and foreign currency exchange rates.

Foreign Currency Exchange Risk

Operating in international markets involves exposure to possible volatile movements in currency exchange rates. A majority of our expenses are transacted in U.S. dollars and our assets and liabilities together with our cash holdings are predominately denominated in U.S. dollars reducing the exposure to currency fluctuations.

If the volume of our international operations increases and foreign currency exchange rates change, the impact to our consolidated statements of operations could be significant and may affect the comparability of operating results. We do not believe a 10% increase or decrease in foreign exchange rates would have resulted in a material impact to our operating results.

ITEM 8. Financial Statements and Supplementary Data.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Audited Consolidated Financial Statements

Report of Independent Registered Public Accounting Firm

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

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Neumora Therapeutics, Inc. (the Company) as of December 31, 2023 and 2022, the related consolidated statements of operations and comprehensive loss, convertible preferred stock and stockholders' equity (deficit) and cash flows for each of the two years in the period ended December 31, 2023, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2023 and 2022, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2023, in conformity with U.S. generally accepted accounting principles.

Basis for Opinion

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

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

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

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2020.

San Jose, California
March 7, 2024

NEUMORA THERAPEUTICS, INC.
Consolidated Balance Sheets
(in thousands, except par values)

	December 31, 2023	December 31, 2022
Assets		
Current assets:		
Cash and cash equivalents	$ 374,038	$ 240,943
Short-term marketable securities	79,944	130,941
Restricted cash	—	50
Prepaid expenses and other current assets	24,297	16,021
Total current assets	478,279	387,955
Long-term marketable securities	9,845	23,511
Property and equipment, net	1,790	2,411
Operating lease right-of-use assets	5,068	8,231
Restricted cash	1,213	1,213
Other assets	—	2,913
Total assets	$ 496,195	$ 426,234
Liabilities, Convertible Preferred Stock, and Stockholders' Equity (Deficit)		
Current liabilities:		
Accounts payable	$ 337	$ 7,147
Accrued liabilities	21,257	11,536
Early exercise liability, current portion	139	1,644
Operating lease liabilities, current portion	3,378	3,370
Total current liabilities	25,111	23,697
Operating lease liabilities, net of current portion	1,853	5,072
Early exercise liability, net of current portion	155	628
Total liabilities	27,119	29,397
Commitments and contingencies (Note 7)		
Convertible preferred stock, $0.0001 par value; 50,000 and 820,349 shares authorized as of December 31, 2023 and December 31, 2022, respectively; no and 104,417 shares issued and outstanding as of December 31, 2023 and December 31, 2022, respectively	—	843,687
Stockholders' equity (deficit):		
Common stock, $0.0001 par value; 700,000 and 1,210,000 shares authorized as of December 31, 2023 and December 31, 2022 respectively; 158,832 and 32,612 shares issued and outstanding as of December 31, 2023 and December 31, 2022, respectively	16	3
Additional paid-in capital	1,172,570	21,430
Accumulated other comprehensive loss	(76)	(774)
Accumulated deficit	(703,434)	(467,509)
Total stockholders' equity (deficit)	469,076	(446,850)
Total liabilities, convertible preferred stock, and stockholders' equity (deficit)	$ 496,195	$ 426,234

The accompanying notes are an integral part of these consolidated financial statements.

NEUMORA THERAPEUTICS, INC.

Consolidated Statements of Operations and Comprehensive Loss
(in thousands, except per share amounts)

	Year Ended December 31,	
	2023	2022
Operating expenses:		
Research and development	$ 142,719	$ 91,749
Acquired in-process research and development	63,904	13,000
General and administrative	45,475	31,121
Total operating expenses	252,098	135,870
Loss from operations	(252,098)	(135,870)
Other income (expense):		
Interest income	16,611	4,561
Other income (expense), net	(170)	405
Total other income	16,441	4,966
Net loss before income taxes	(235,657)	(130,904)
Provision for income taxes	268	—
Net loss	(235,925)	(130,904)
Other comprehensive income (loss):		
Unrealized gain (loss) on marketable securities	698	(774)
Comprehensive loss	$ (235,227)	$ (131,678)
Net loss per share, basic and diluted	$ (3.63)	$ (4.81)
Weighted-average shares outstanding, basic and diluted	65,021	27,207

The accompanying notes are an integral part of these consolidated financial statements

NEUMORA THERAPEUTICS, INC.

Consolidated Statements of Convertible Preferred Stock and Stockholders' Equity (Deficit)
(in thousands)

	Convertible Preferred Stock		Common Stock		Additional Paid-In	Accumulated Other Comprehensive	Accumulated	Total Stockholders'
	Shares	Amount	Shares	Amount	Capital	Loss	Deficit	Deficit
Balance as of December 31, 2021	94,710	$ 729,858	31,985	$ 3	$ 11,381	$ —	$ (336,605)	$ (325,221)
Issuance of Series A-1 convertible preferred stock upon exercise of warrants	157	1,613	—	—	—	—	—	—
Issuance of Series B convertible preferred stock, net of issuance costs of $179	9,550	112,216	—	—	—	—	—	—
Issuance of common stock upon early exercise of stock options	—	—	442	—	—	—	—	—
Issuance of common stock upon exercise of stock options	—	—	228	—	612	—	—	612
Issuance of common stock as noncash consideration related to acquisition of assets	—	—	5	—	24	—	—	24
Forfeiture of restricted stock subject to repurchase	—	—	(48)	—	—	—	—	—
Vesting of restricted common stock	—	—	—	—	1,115	—	—	1,115
Unrealized loss on marketable debt securities	—	—	—	—	—	(774)	—	(774)
Stock-based compensation	—	—	—	—	8,298	—	—	8,298
Net loss	—	—	—	—	—	—	(130,904)	(130,904)
Balance as of December 31, 2022	104,417	$ 843,687	32,612	$ 3	$ 21,430	$ (774)	$ (467,509)	$ (446,850)
Conversion of convertible preferred stock into common stock upon initial public offering	(104,417)	(843,687)	104,417	10	843,677	—	—	843,687
Issuance of common stock upon initial public offering, net of offering costs of $23,546	—	—	14,710	1	226,523	—	—	226,524
Issuance of common stock upon achievement of milestone related to acquisition of assets	—	—	6,072	1	58,538	—	—	58,539
Issuance of common stock upon exercise of stock options	—	—	972	1	2,855	—	—	2,856
Sale and issuance of common stock	—	—	127	—	810	—	—	810
Issuance of restricted common stock subject to repurchase	—	—	382	—	—	—	—	—
Repurchase of unvested early exercised stock options	—	—	(123)	—	—	—	—	—
Forfeiture of restricted stock subject to repurchase	—	—	(337)	—	—	—	—	—
Vesting of restricted common stock	—	—	—	—	1,497	—	—	1,497
Unrealized gain on marketable debt securities	—	—	—	—	—	698	—	698
Stock-based compensation	—	—	—	—	17,240	—	—	17,240
Net loss	—	—	—	—	—	—	(235,925)	(235,925)
Balance as of December 31, 2023	—	$ —	158,832	$ 16	$ 1,172,570	$ (76)	$ (703,434)	$ 469,076

The accompanying notes are an integral part of these consolidated financial statements.

NEUMORA THERAPEUTICS, INC.

Consolidated Statements of Cash Flows
(in thousands)

	Year Ended December 31,	
	2023	2022
Operating activities:		
Net loss	$ (235,925)	$ (130,904)
Adjustments to reconcile net loss to net cash used in operating activities:		
Acquired in-process research and development	63,904	13,000
Stock-based compensation	17,240	8,298
Noncash operating lease expense	3,355	2,103
Depreciation and amortization	668	594
Net accretion of investments in marketable securities	(3,741)	(708)
Realized loss on investments	—	(18)
Change in fair value of convertible preferred stock warrants	—	(559)
Other noncash expenses	120	246
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	(11,401)	(3,628)
Other assets	—	1,373
Accounts payable	(581)	(1,246)
Accrued liabilities	6,486	(1,621)
Operating lease liabilities	(3,403)	(1,826)
Net cash used in operating activities	(163,278)	(114,896)
Investing activities:		
Purchases of marketable securities	(109,072)	(226,369)
Cash paid for acquisition of assets, including upon achievement of milestones	(4,590)	(13,000)
Proceeds from sales and maturities of marketable securities	178,166	71,867
Purchases of property and equipment	(117)	(511)
Net cash provided by (used in) investing activities	64,387	(168,013)
Financing activities:		
Proceeds from issuance of common stock upon initial public offering, net of underwriting discounts and commissions	232,565	—
Proceeds from issuance of convertible preferred stock, net of issuance costs	—	112,216
Proceeds from issuance of common stock	810	—
Proceeds from exercise of stock options	2,856	2,658
Proceeds from exercise of warrants	—	1,613
Repurchase of unvested early exercised shares	(491)	—
Payments for deferred offering costs	(3,804)	(744)
Net cash provided by financing activities	231,936	115,743
Net change in cash and cash equivalents and restricted cash	133,045	(167,166)
Cash and cash equivalents and restricted cash at beginning of year	242,206	409,372
Cash and cash equivalents and restricted cash at end of year	$ 375,251	$ 242,206
Components of cash and restricted cash:		
Cash and cash equivalents	$ 374,038	$ 240,943
Restricted cash	1,213	1,263
Total cash and cash equivalents and restricted cash	$ 375,251	$ 242,206
Supplemental disclosure of noncash activities:		
Operating lease liabilities arising from obtaining right-of-use assets	$ 192	$ 8,865
Supplemental disclosure of noncash investing and financing activities:		
Offering costs related to initial public offering included in accounts payable and accrued liabilities	$ —	$ 340
Acquisition of assets included in accounts payable and accrued liabilities	$ 775	$ —
Conversion of preferred stock into common stock upon completion of initial public offering	$ 843,687	$ —
Purchases of property and equipment included in accounts payable	$ 44	$ 505
Issuance of common stock upon achievement of milestone related to acquisition of assets	$ 58,539	$ —

The accompanying notes are an integral part of these consolidated financial statements.

NEUMORA THERAPEUTICS, INC.

Notes to Consolidated Financial Statements

1. Organization and Liquidity

Description of Business

Neumora Therapeutics, Inc. (the Company), was originally incorporated in the State of Delaware in November 2019, and is headquartered in Watertown, Massachusetts.

The Company is a clinical-stage biopharmaceutical company founded to confront the global brain disease crisis by taking a fundamentally different approach to the way treatments for brain diseases are developed. The Company's therapeutic pipeline currently consists of seven clinical and preclinical neuroscience programs that target novel mechanisms of action for a broad range of underserved neuropsychiatric disorders and neurodegenerative diseases.

As of December 31, 2023, the Company has devoted a significant portion of its financial resources and efforts to building its organization, acquiring technologies and companies, executing clinical and preclinical studies, conducting research and development, identifying and developing potential product candidates, building its precision neuroscience tools, organizing and staffing the Company, business planning, establishing, maintaining and protecting its intellectual property portfolio, raising capital and providing general and administrative support for these operations. The Company has not generated revenue from the sale of products.

The Company's most advanced product candidate, navacaprant (NMRA-140), is a novel once-daily oral kappa opioid receptor (KOR) antagonist that is being developed for the treatment of major depressive disorder (MDD). In 2023, The Company initiated a Phase 3 program called the KOASTAL program evaluating navacaprant monotherapy in patients with moderate to severe MDD. The Company anticipates releasing topline results from the KOASTAL-1 study in the second half of 2024 and topline results from the KOASTAL-2 and KOASTAL-3 studies in the first half of 2025. We also expect to initiate a Phase 2 study for navacaprant in bipolar depression in the first half of 2024 and anticipate releasing results from that study in 2025. In addition to navacaprant, NMRA-266 is a positive allosteric modulator program of the M4 muscarinic receptor (M4R) for the treatment of schizophrenia. In 2023 the Company initiated a Phase 1 single ascending dose / multiple ascending dose (SAD/MAD) study in healthy adult participants, and the Company expects data from that study to be available in mid-2024.

Reverse Stock Split

On September 8, 2023, the Company's board of directors approved an amended and restated certificate of incorporation to effect a reverse split of shares of the Company's common stock and convertible preferred stock on a 7.8463-for-1 basis (the "Reverse Stock Split"). The par value and authorized shares of the common stock and convertible preferred stock were not adjusted as a result of the Reverse Stock Split. All share data and per share data amounts for all periods presented in the consolidated financial statements and notes thereto have been retrospectively adjusted to reflect the effect of the Reverse Stock Split.

Initial Public Offering

On September 19, 2023, the Company completed its initial public offering (IPO), pursuant to which it issued and sold an aggregate of 14,710,000 shares of its common stock at a price to the public of $17.00 per share, resulting in net proceeds of $226.5 million, after deducting underwriting discounts and commissions of $17.5 million and other offering expenses of $6.0 million. Upon the closing of the IPO, the Company's outstanding convertible preferred stock automatically converted into 104,417,415 shares of common stock (see Note 9).

In connection with the completion of its IPO, on September 19, 2023, the Company's certificate of incorporation was amended and restated to authorize 700,000,000 shares of common stock, par value $0.0001 per share and 50,000,000 shares of preferred stock, par value of $0.0001 per share.

Liquidity

The Company has incurred net losses and negative cash flows from operations since inception and as of December 31, 2023, had an accumulated deficit of $703.4 million. As of December 31, 2023, the Company had cash, cash equivalents and marketable securities of $463.8 million, which are available to fund future operations. The Company believes that its existing cash, cash equivalents and marketable securities as of December 31, 2023 will be sufficient to support operations for at least the next 12 months from the date these consolidated financial statements were available to be issued.

The Company expects to incur additional losses in the future as it continues its research and development efforts, advances its product candidates through preclinical and clinical development, enhances its precision neuroscience approach and programs, expands its product pipeline, seeks regulatory approval, prepares for commercialization, as well as hires additional personnel, protects its intellectual property and grows its business. The Company will need to raise additional capital to support its continuing operations and pursue its long-term business plan, including to complete the development and commercialization of its product candidates, if approved. Such activities are subject to significant risks and uncertainties, including clinical failure which can impact the Company's ability to secure additional funding. The Company expects to finance its cash needs through a combination of public or private equity offerings or debt financings or other capital sources, which may include strategic collaborations or other arrangements with third parties, or other sources of financing. However, there is no guarantee that any of these financing or opportunities will be executed or realized on favorable terms, if at all, and some could be dilutive to existing stockholders.

2. Summary of Significant Accounting Policies and Basis of Presentation

Basis of Presentation and Consolidation

The accompanying consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles (U.S. GAAP) and applicable rules and regulations of the Securities and Exchange Commission (SEC) regarding annual financial reporting. The consolidated financial statements include all accounts of the Company and its wholly owned subsidiaries. All intercompany transactions and balances have been eliminated in consolidation.

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts in the consolidated financial statements and accompanying notes. These estimates form the basis for judgments the Company makes about the carrying values of assets and liabilities that are not readily apparent from other sources. The Company bases its estimates and judgments on historical experience and on various other assumptions that the Company believes are reasonable under the circumstances. These estimates are based on management's knowledge about current events and expectations about actions the Company may undertake in the future. These judgments, estimates and assumptions are used for, but not limited to, accrued research and development expenses, accounting for acquisitions of assets, fair value of certain assets and liabilities, the fair value of the Company's convertible preferred stock, the fair value of the Company's common stock, stock-based compensation, the measurement of right-of-use assets and lease liabilities and related incremental borrowing rate, and uncertain tax positions and the valuation allowance for net deferred tax assets. Actual results may differ from the Company's estimates.

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 (CODM), or decision-making group, in making decisions on how to allocate resources and assess performance. The Company's Chief Executive Officer serves as the CODM. The Company views its operations and manages its business in one operating segment.

Risks and Uncertainties

The Company is subject to certain risks and uncertainties, including, but not limited to, changes in any of the following areas that the Company believes could have a material adverse effect on future financial position or results of operations: successfully develop, manufacture, and market any approved products; obtain regulatory approval from the U.S. Food and Drug Administration or foreign regulatory agencies prior to commercial sales; new technological innovations; dependence on key personnel, protection of intellectual property; compliance with governmental regulations; uncertainty of market acceptance of any approved products; product liability; and the need to obtain additional financing.

Although the World Health Organization has declared that COVID-19 no longer represents a global health emergency, the actual and perceived impact of COVID-19 and any effect on the Company's business cannot be predicted. As a result, there can be no assurance that the Company will not experience additional negative impacts associated with COVID-19, which could be significant and may further delay the Company's initiation of preclinical studies and clinical trials, interrupt its supply chain, disrupt regulatory activities, or have other adverse effects on its business and operations. The Company's focus remains on promoting measures intended to help minimize its risk of exposure to the virus for its employees, including policies that allow its employees to work remotely.

Cash and Cash Equivalents

All highly liquid investments, including money market funds, with original maturities of three months or less at the time of purchase are considered to be cash equivalents. All of the Company's cash equivalents have liquid markets and high credit ratings. The Company maintains its cash in bank deposits and other accounts.

Restricted Cash

Restricted cash primarily consists of credit card accounts and facility lease agreements collateralized by money market accounts or a letter of credit pursuant to certain banking and lease agreements. Restricted cash, which is unavailable for a period longer than one year from the consolidated balance sheet date, is classified as a noncurrent asset. Otherwise, restricted cash is included in other current assets in the consolidated balance sheets.

Concentrations of Credit Risk

Financial instruments that potentially subject the Company to significant concentrations of credit risk consist primarily of cash and cash equivalents deposited in accounts at several financial institutions that may exceed the Federal Deposit Insurance Corporation's insurance limit. The Company is exposed to credit risk in the event of a default by the financial institutions holding its cash and cash equivalents to the extent recorded in the consolidated balance sheets. The Company believes it is not exposed to significant credit risk due to the financial position of the financial institutions in which those deposits are held.

Marketable Securities

The Company invests its excess cash in marketable debt securities with high credit ratings including but not limited to money market funds, securities issued by the U.S. government and its agencies, commercial paper and corporate debt securities that are accounted for as available-for-sale and carried at fair value. Marketable securities are classified as short-term or long-term based on the maturity date and their availability to meet current operating requirements. The amortized cost of debt securities is adjusted for amortization of premiums and accretion of discounts to maturity, which is included in interest income in the consolidated statements of operations and comprehensive loss. Realized gains and losses on marketable securities, if any, are included in other income (expense), net. The cost of securities sold is determined based on the trade date using the specific identification method.

The Company periodically assesses its available-for-sale debt securities for impairment. For debt securities in an unrealized loss position, this assessment first considers the Company's intent to sell, or whether it is more likely than not that it will be required to sell the security before recovery of its amortized cost basis. If either of these criteria are met, the debt security's amortized cost basis is written down to fair value within other income (expense), net. For debt securities in an unrealized loss position that do not meet the aforementioned criteria, the Company assesses whether the decline in fair value has resulted from credit losses or other factors. In making this assessment, the extent to which fair value is less than amortized cost, any changes to the rating of the security by a rating agency, and any adverse conditions specifically related to the security is considered, among other factors. If this assessment indicates that a credit loss may exist, the present value of cash flows expected to be collected from the security are compared to the amortized cost basis of the security. If the present value of cash flows expected to be collected is less than the amortized cost basis, a credit loss exists and an allowance for credit losses will be recorded in other income (expense), net, limited by the amount that the fair value is less than the amortized cost basis. Any additional impairment not recorded through an allowance for credit losses is recognized in other comprehensive income (loss). Changes in the allowance for credit losses are recorded as provision for (or reversal of) credit loss expense. Losses are charged against the allowance when management believes the un-collectability of an available-for-sale security is confirmed or when either of the criteria regarding intent or requirement to sell is met. These changes are recorded in other income (expense), net.

Fair Value of Financial Instruments

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants at the measurement date. The Company measures fair value by maximizing the use of observable inputs, where available, and minimizing the use of unobservable inputs when measuring fair value. Financial assets and liabilities recorded at fair value in the consolidated balance sheets are categorized in the fair value hierarchy based upon the lowest level of input that is significant to the fair value as follows:

Level 1—Observable inputs such as unadjusted, quoted prices in active markets for identical assets or liabilities at the measurement date.

Level 2—Inputs (other than quoted prices included in Level 1) are either directly or indirectly observable inputs for similar assets or liabilities. These include quoted prices for identical or similar assets or liabilities in active markets and quoted prices for identical or similar assets or liabilities in markets that are not active.

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

To the extent that the valuation is based on models or inputs that are less observable or unobservable in the market, the determination of fair value requires more judgment. Accordingly, the degree of judgment exercised by the Company in determining fair value is greatest for instruments categorized in Level 3. A financial instrument's level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value of the instrument.

Property and Equipment, Net

Property and equipment, net is stated at cost less accumulated depreciation. Depreciation of property and equipment is computed using the straight-line method over the estimated useful lives of the assets, which is three to seven years. Leasehold improvements are amortized using the straight-line method over the lesser of the estimated useful lives of the assets or the remaining term of the lease. Construction in progress is stated at cost and not depreciated until the asset is placed into service. Upon sale or retirement of the assets, the cost and related accumulated depreciation are removed from the consolidated balance sheets and the resulting gain or loss is recognized in the consolidated statements of operations and comprehensive loss. Expenditures for maintenance and repairs are expensed as incurred.

Impairment of Long-Lived Assets

The Company reviews the carrying amount of its long-lived assets, including property and equipment and right-of-use assets, for impairment whenever events or changes in business circumstances indicate that the carrying amount of the assets may not be fully recoverable. If indicators of impairment exist, an impairment loss is recognized when the estimated undiscounted future cash flows expected to result from the use of the asset and its eventual disposition are less than its carrying amount. The impairment charge is determined based upon the excess of the carrying value of the asset over its estimated fair value, with estimated fair value determined based upon an estimate of discounted future cash flows or other appropriate measures of estimated fair value. Estimating discounted cash flows requires the Company to make significant judgments and assumptions. Actual results may vary from the Company's estimates as of the date of impairment testing and adjustments may occur in future periods. The Company believes that no impairment of long-lived assets is required as of and for the years ended December 31, 2023, and 2022.

Leases

The Company determines if an arrangement is or contains a lease at inception by assessing whether it conveys the right to control the use of an identified asset in exchange for consideration. If a lease is identified, classification is determined at lease commencement. To date, all of the Company's leases have been determined to be operating leases. Operating lease liabilities are recognized at the present value of the future lease payments at the lease commencement date. The Company's leases do not provide an implicit interest rate and therefore the Company estimates its incremental borrowing rate to discount lease payments. The incremental borrowing rate reflects the estimated interest rate that the Company would have to pay to borrow on a collateralized basis, an amount equal to the lease payments in a similar economic environment over a similar term. Operating lease right-of-use (ROU) assets are determined based on the corresponding lease liability adjusted for any lease payments made at or before commencement, initial direct costs, and lease incentives. The operating lease ROU asset also includes impairment charges if the Company determines the ROU asset is impaired. The Company considers a lease term to be the noncancelable period that it has the right to use the underlying asset, including any periods where it is

reasonably assured the Company will exercise the option to extend the contract. Periods covered by an option to extend are included in the lease term if the lessor controls the exercise of that option. Operating lease expenses are recognized, and the ROU assets are amortized on a straight-line basis over the lease term. The Company has elected to not separate lease and non-lease components for its leased assets and accounts for all lease and non-lease components of its agreements as a single lease component. The Company has elected not to recognize on the consolidated balance sheets leases with terms of one year or less.

Acquisitions

The Company evaluates mergers, acquisitions, and other similar transactions to assess whether or not the transaction should be accounted for as a business combination or an acquisition of assets. The Company first identifies who is the acquiring entity by determining if the target is a legal entity or a group of assets or liabilities. If control over a legal entity is being evaluated, the Company also evaluates if the target is a variable interest or voting interest entity. For acquisitions of voting interest entities, the Company applies a screen test to determine if substantially all of the fair value of the gross assets acquired is concentrated in a single identifiable asset or group of similar identifiable assets. If the screen test is met, the transaction is accounted for as an acquisition of assets. If the screen is not met, further determination is required as to whether or not the Company has acquired inputs and processes that have the ability to create outputs which would meet the definition of a business. Significant judgment is required in the application of the screen test to determine whether an acquisition is a business combination or an acquisition of assets.

For an acquisition of assets, a cost accumulation model is used to determine the cost of the acquisition. Common stock and convertible preferred stock issued as consideration in an acquisition of assets are generally measured based on the acquisition date fair value of the equity interests issued. Direct transaction costs are recognized as part of the cost of an acquisition of assets. The Company also evaluates which elements of a transaction should be accounted for as a part of an acquisition of assets and which should be accounted for separately.

The cost of an acquisition of assets, including transaction costs, are allocated to identifiable assets acquired and liabilities assumed based on a relative fair value basis. Goodwill is not recognized in an acquisition of assets. Any difference between the cost of an acquisition of assets and the fair value of the net assets acquired is allocated to the non-monetary identifiable assets based on their relative fair values. Assets acquired as part of an acquisition of assets that are considered to be in-process research and development intangible assets (IPR&D) are immediately expensed and recorded as a component of acquired in-process research and development expense in the consolidated statements of operations and comprehensive loss unless there is an alternative future use in other research and development projects.

In addition to upfront consideration, the Company's acquisitions of assets may also include contingent consideration payments to be made for future milestone events or royalties on net sales of future products. The Company assesses whether such contingent consideration is subject to liability classification and fair value measurement or meets the definition of a derivative. Contingent consideration payments in an acquisition of assets not required to be classified as a liability at fair value, or are accounted for as derivatives that qualify for a scope exception from derivative accounting, are recognized when the contingency is resolved, and the consideration is paid or becomes payable. Contingent consideration payments required to be classified as a liability, or are accounted for as derivatives and do not qualify for a scope exception from derivative accounting, are recorded at fair value on the date of the acquisition and are subsequently remeasured to fair value at each reporting date. Contingent consideration payments made prior to regulatory approval are expensed as incurred. Any future payments that are contingent upon continued services to the Company are treated as compensation and recognized when it is probable such amounts will become payable.

If the target legal entity is determined to be a variable interest entity (VIE) and not a business, all tangible and intangible assets acquired, including any IPR&D assets but excluding goodwill, and liabilities assumed, including contingent consideration, are recorded at their fair values. If the acquisition is determined to be a business combination, all tangible and intangible assets acquired, including any IPR&D assets, and liabilities assumed, including contingent consideration, are recorded at their fair values. Goodwill is recognized for any difference between the consideration transferred and fair value determination. In addition, direct transaction costs in connection with business combinations are expensed as incurred, rather than capitalized.

The tax basis of assets acquired in either a business combination or acquisition of assets are compared to the book basis of such assets resulting in the recognition of deferred tax assets and liabilities.

Deferred Offering Costs

Deferred offering costs, consisting of direct incremental legal, consulting, banking, and accounting fees incurred related to the Company's IPO have been capitalized and were offset against proceeds in stockholders' equity upon the consummation of the IPO in September 2023. As of December 31, 2023 and 2022, there were no and $2.9 million deferred offering costs, respectively, capitalized and included in other assets in the consolidated balance sheets.

Convertible Preferred Stock Warrant Liability

Warrants to purchase shares of the Company's convertible preferred stock, or the preferred stock warrants, were classified as a liability in the Company's consolidated balance sheets prior to exercise or expiration as the underlying securities were contingently redeemable upon the occurrence of events that were outside of the control of the Company. The preferred stock warrants were subject to remeasurement at the end of each reporting period, with changes in estimated fair value recognized as a component of other income (expense) in the consolidated statements of operations and comprehensive loss until settlement. There were no outstanding preferred stock warrants as of December 31, 2023 and 2022.

Convertible Preferred Stock

The Company's convertible preferred stock was classified outside of stockholders' equity (deficit) in the consolidated balance sheets as events triggering liquidation were not solely within the Company's control. No accretion was recognized as the contingent events that could give rise to redemption were not deemed probable. Upon completion of the IPO in September 2023, all preferred stock was converted to common stock and as such no amounts were issued or outstanding as of December 31, 2023.

Research and Development Expenses and Related Prepaid Assets and Accrued Liabilities

Research and development costs are expensed as incurred. Research and development expenses primarily consist of internal research and development expense, including personnel-related expenses (such as salaries, benefits and noncash stock-based compensation) and other expenses, including laboratory supplies and other non-capital equipment utilized for in-house research, research and consulting expenses, software development costs, license fees and allocated expenses, including facilities costs and depreciation and amortization; external research and development expenses incurred under arrangements with vendors conducting research and development services on its behalf, such as contract research organizations (CROs), preclinical testing organizations and contract manufacturing organizations (CMOs). Costs to develop the Company's platform information technologies are recorded as research and development expense unless the criteria to be capitalized as internal-use software costs is met. Payments made prior to the receipt of goods or services to be used in research and development are capitalized, evaluated for current or long-term classification, and included in prepaid expenses and other current assets or other assets in the consolidated balance sheets based on when the goods are received or the services are expected to be received or consumed, and recognized in research and development expenses when they are realized.

The Company is required to estimate expenses resulting from its obligations under contracts with vendors, service providers and clinical site agreements in connection with conducting clinical trials. The financial terms of these contracts are subject to negotiations which vary from contract to contract and may result in cash flows that do not match the periods over which materials or services are provided. The Company estimates and records accrued expenses for the related research and development activities based on the level of services performed but not yet invoiced pursuant to agreements established with its service providers, according to the progress of preclinical studies, clinical trials or related activities, and discussions with applicable personnel and service providers as to the progress or state of consummation of goods and services.

During the course of a clinical trial, the rate of expense recognition is adjusted if actual results differ from the Company's estimates. The Company estimates accrued expenses as of each balance sheet date in its consolidated financial statements based on the facts and circumstances known at that time. The clinical trial accrual is dependent in part upon the timely and accurate reporting of CROs, CMOs and other third-party vendors. Although the Company does not expect its estimates to be materially different from amounts actually incurred, its estimate may vary from the actual results. To date, the Company has not experienced material differences between its accrued expenses and actual expenses.

Stock-Based Compensation

The Company maintains equity incentive plans (the Plans) as a long-term incentive for employees, directors, and service providers. The Company accounts for all stock-based awards based on their fair value on the date of the grant. For stock-based awards with service only vesting conditions, the Company recognizes expense on a straight-line basis over the requisite service period, which is generally the vesting period of the respective award. For awards with performance vesting conditions, the Company evaluates the probability of achieving the performance vesting condition at each reporting date. The Company begins to recognize expense for awards with performance-based vesting conditions using an accelerated attribution method when it is deemed probable that the performance condition will be met. For awards with both market and service vesting conditions, the Company recognizes expense using the accelerated attribution method over the derived requisite service period. Stock-based compensation is classified in the consolidated statements of operations and comprehensive loss based on the function to which the related services are provided. Forfeitures are accounted for as they occur.

The fair value of stock option awards with only service conditions and/or performance-based vesting conditions are estimated on the date of grant using the Black-Scholes option pricing model, which requires inputs based on certain subjective assumptions, including the expected stock price volatility, the expected term of the option, the risk-free interest rate for a period that approximates the expected term of the option, and the expected dividend yield. The fair value of stock options awards with market-based vesting conditions is estimated on the grant date using the Monte Carlo simulation model, which utilizes subjective assumptions, including volatility and the derived service periods, that determine the probability of satisfying the market condition stipulated in the award to estimate the fair value of the award. The fair value of restricted stock is based on the estimated fair value of the Company’s common stock on the grant date.

Prior the Company's IPO, the fair value of the Company’s common stock was determined by the Company’s board of directors with the assistance of management. The fair value of common stock was determined using valuation methodologies which utilize certain assumptions, including probability weighting of events, volatility, time to an exit event, a risk-free interest rate and an assumption for a discount for lack of marketability. In determining the fair value of common stock, the methodologies used to estimate the enterprise value of the Company were performed using methodologies, approaches, and assumptions consistent with the American Institute of Certified Public Accountants’ Accounting and Valuation Guide, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*. For awards granted subsequent to the Company's IPO, the grant date fair value of common stock was determined by using the public closing price per share of common stock.

Income Taxes

The Company accounts for income taxes under the asset and liability method. Under this method, deferred tax assets and liabilities are recognized for the expected future tax consequences of events that have been included in the Company’s consolidated financial statements and tax returns. Deferred tax assets and liabilities are determined based upon the differences between the financial statement carrying amounts and the tax bases of existing assets and liabilities and for loss and credit carryforwards, using enacted tax rates expected to be in effect in the year in which the differences are expected to reverse. Deferred tax assets are reduced by a valuation allowance if it is more likely-than-not that these assets may not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which the temporary differences representing net future deductible amounts become deductible.

The Company recognizes and measures uncertain tax positions using a two-step approach. The Company determines whether it is more likely than not that a tax position will be sustained upon examination. If it is not more likely-than-not that a position will be sustained, none of the benefit attributable to the position is recognized. The tax benefit to be recognized for any tax position that meets the more-likely-than-not recognition threshold is calculated as the largest amount that is more than 50% likely of being realized upon resolution of the contingency. Judgment is required to evaluate uncertain tax positions. The Company evaluates uncertain tax positions on a regular basis. The evaluations are based on a number of factors, including changes in facts and circumstances, changes in tax law, correspondence with tax authorities during the course of the audit, and effective settlement of audit issues.

The Company’s policy is to include penalties and interest expense related to income taxes as a component of its provision for income taxes. The Company has not reported any interest or penalties associated with income tax for any period presented.

Net Loss Per Share

Basic net loss per share is calculated by dividing net loss by the weighted-average number of shares of common stock outstanding during the period, without consideration for common stock equivalents. Diluted net loss per share is the same as basic net loss per share, since the effects of potentially dilutive securities are antidilutive given the net loss for each period presented.

Comprehensive Loss

Comprehensive loss includes net loss and certain changes in stockholders' equity (deficit) that are excluded from net loss, such as unrealized losses on the Company's available-for-sale marketable securities.

Emerging Growth Company Status

The Company is an emerging growth company, as defined in the Jumpstart Our Business Startups Act of 2012 (the JOBS Act). Under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards issued subsequent to the enactment of the JOBS Act, until such time as those standards apply to private companies. The Company has elected to use this extended transition period for complying with new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date that it (i) is no longer an emerging growth company or (ii) affirmatively and irrevocably opts out of the extended transition period provided in the JOBS Act. As a result, these consolidated financial statements may not be comparable to companies that comply with the new or revised accounting pronouncements as of public company effective dates.

Recent Accounting Pronouncements Not Yet Adopted

In December 2023, the Financial Standards Accounting Board (FASB) issued Accounting Standards Update (ASU) 2023-09, *Income Taxes* (ASU 2023-09), which requires issuers to make additional discloses on an annual basis related to specific categories in the rate reconciliation and provide additional information for reconciling items that meet a quantitative threshold on an annual basis, disclose additional information about income taxes paid as well as other disaggregated disclosures. ASU 2023-09 is effective for the Company as of January 1, 2025 for annual periods. The Company is evaluating the impact of this ASU on its consolidated financial statements.

In November 2023, the FASB issued ASU 2023-07, *Segment Reporting* (ASU 2023-07), which requires issuers to make additional disclosures with respect to segment expenses, including required disclosure on an annual and interim basis for significant segment expenses and other segment items. ASU 2023-07 also permits the disclosure of more than one measure of a segment's profit or loss. ASU 2023-07 is effective for the Company as of January 1, 2024 for annual periods and as of January 1, 2025 for interim periods. The Company is evaluating the impact of this ASU on its consolidated financial statements.

3. Cash Equivalents and Marketable Securities

The following tables summarize the amortized cost and fair value of the Company's cash equivalents and marketable securities by major investment category for the periods indicated:

	December 31, 2023			
	Amortized Cost	Gross Unrealized Gain	Gross Unrealized Loss	Estimated Fair Value
	(in thousands)			
Cash equivalents:				
Money market funds	$ 306,801	$ —	$ —	$ 306,801
U.S. government and agency securities	12,998	—	(6)	12,992
Commercial paper	42,455	6	—	42,461
Total cash equivalents	$ 362,254	$ 6	$ (6)	$ 362,254
Marketable securities:				
U.S. government and agency securities	$ 37,515	$ —	$ (91)	$ 37,424
Commercial paper	47,534	17	(4)	47,547
Corporate debt securities	4,816	3	(1)	4,818
Total marketable securities	89,865	20	(96)	89,789
Total cash equivalents and marketable securities	$ 452,119	$ 26	$ (102)	$ 452,043

NEUMORA THERAPEUTICS, INC.

Notes to Consolidated Financial Statements

	December 31, 2022			
	Amortized Cost	Gross Unrealized Gain	Gross Unrealized Loss	Estimated Fair Value
	(in thousands)			
Cash equivalents:				
Money market funds	$ 183,353	$ —	$ —	$ 183,353
Total cash equivalents	$ 183,353	$ —	$ —	$ 183,353
Marketable securities:				
U.S. government and agency debt securities	$ 57,534	$ —	$ (272)	$ 57,262
Commercial paper	55,425	—	(237)	55,188
Corporate debt securities	42,267	1	(266)	42,002
Total marketable securities	155,226	1	(775)	154,452
Total cash equivalents and marketable securities	$ 338,579	$ 1	$ (775)	$ 337,805

The Company's marketable securities by contractual maturity were (in thousands):

	December 31, 2023
Within one year	$ 79,944
After one year through two years	9,845
Total marketable securities	$ 89,789

As of December 31, 2023, the Company has not realized any material gains or losses on its marketable securities, including any impairment charges on its securities related to expected credit losses. As of December 31, 2023, the aggregate difference between the amortized cost and fair value of each security in an unrealized loss position was de minimis. Since any provision for expected credit losses for a security held is limited to the amount the fair value is less than its amortized cost, no allowance for expected credit loss was deemed necessary at December 31, 2023 (see Note 4).

4. Fair Value Measurements

The carrying amounts of the Company's financial instruments, including prepaid expenses and other current assets, accounts payable, accrued liabilities and the current portion of operating lease liabilities approximate fair value due to the short-term nature of those instruments.

The following tables summarize the Company's assets and liabilities measured at fair value on a recurring basis by level within the valuation hierarchy:

	December 31, 2023			
	Level 1	Level 2	Level 3	Total
	(in thousands)			
Assets:				
Cash equivalents:				
Money market funds	$ 306,801	$ —	$ —	$ 306,801
Marketable securities:				
U.S. government and agency debt securities	19,473	30,943	—	50,416
Commercial paper	—	90,008	—	90,008
Corporate debt securities	—	4,818	—	4,818
Total assets measured at fair value	$ 326,274	$ 125,769	$ —	$ 452,043

NEUMORA THERAPEUTICS, INC.

Notes to Consolidated Financial Statements

	December 31, 2022			
	Level 1	Level 2	Level 3	Total
	(in thousands)			
Assets:				
Cash equivalents:				
Money market funds	$ 183,353	$ —	$ —	$ 183,353
Marketable securities:				
U.S. government and agency debt securities	44,777	12,485	—	57,262
Commercial paper	—	55,188	—	55,188
Corporate debt securities	—	42,002	—	42,002
Total assets measured at fair value	$ 228,130	$ 109,675	$ —	$ 337,805

Money market funds are highly liquid and actively traded marketable securities that generally transact at a stable $1.00 net asset value representing its estimated fair value. The Company estimates the fair value of its U.S. government and agency debt securities, commercial paper and corporate debt securities by taking into consideration valuations obtained from third-party pricing services. The pricing services utilize industry standard valuation models, including both income and market-based approaches, for which all significant inputs are observable, either directly or indirectly, to estimate fair value. These inputs include reported trades of and broker/dealer quotes on the same or similar securities, issuer credit spreads, benchmark securities, prepayment/default projections based on historical data, and other observable inputs.

5. Balance Sheet Components

Prepaid Expenses and Other Current Assets

Prepaid expenses and other current assets consisted of the following:

	December 31,	
	2023	2022
	(in thousands)	
Prepaid research and development costs ($6.3 million and $11.9 million from related party in 2023 and 2022, respectively)	$ 19,085	$ 13,484
Prepaid other	4,273	1,618
Other receivables	939	919
Total prepaid expenses and other current assets	$ 24,297	$ 16,021

Property and equipment, net

Property and equipment, net, consisted of the following:

	December 31,	
	2023	2022
	(in thousands)	
Laboratory equipment	$ 2,800	$ 2,384
Computer and software	287	420
Furniture and fixtures	97	136
Leasehold improvements	—	17
Total property and equipment	3,184	2,957
Less: accumulated depreciation and amortization	(1,435)	(1,060)
Construction in progress	41	514
Total property and equipment	$ 1,790	$ 2,411

Depreciation and amortization expense was $0.7 million and $0.6 million for the years ended December 31, 2023 and 2022, respectively. As of December 31, 2023, all of the Company's property and equipment was located in the United States.

Accrued Liabilities

Accrued liabilities consisted of the following:

	December 31,	
	2023	2022
	(in thousands)	
Compensation and benefits	$ 10,011	$ 8,400
Accrued research and development services ($3.1 million and nil due to related party in 2023 and 2022, respectively)	5,004	889
Professional services	787	1,187
Accrued clinical trial and preclinical costs	4,705	652
Other	750	408
Total accrued liabilities	$ 21,257	$ 11,536

6. Acquisitions of Assets

BlackThorn Therapeutics, Inc.

In June 2020, the Company entered into an agreement and plan of merger (BlackThorn Merger Agreement) to acquire all of the equity interests of BlackThorn Therapeutics, Inc. (BlackThorn), which became effective in September 2020. The Company acquired BlackThorn for its in-process research and development programs, including an antagonist of the Kappa Opioid Receptor (navacaprant (NMRA-140)) for the treatment of major depressive disorders and an antagonist of the Vasopressin 1a Receptor (NMRA-511) for the treatment of agitation in Alzheimer's disease. The Company also gained access to a cloud-based computational psychiatry and data platform that was being developed to support drug target identification, patient stratification and objective clinical trial endpoints. Both navacaprant and NMRA-511 were exclusively licensed to BlackThorn by The Scripps Research Institute (TSRI). The acquisition was accounted for as an acquisition of assets.

The BlackThorn Merger Agreement requires the Company to pay the former stockholders of BlackThorn contingent consideration (i) with respect to navacaprant, in the form of development and regulatory approval milestones of up to an aggregate amount of $365.0 million, which includes a milestone payment that became due in October 2023 upon dosing the first patient in the Phase 3 clinical trial for navacaprant, and sales-based milestones of up to an aggregate amount of $450.0 million and (ii) with respect to NMRA-511, in the form of development and regulatory approval milestones of up to an aggregate amount of $100.0 million, and sales-based milestones of up to an aggregate amount of $100.0 million (BlackThorn Milestones). At the Company's sole discretion, the BlackThorn Milestone payments may be settled in cash or shares of the Company, or a combination of both, subject to the provisions of the BlackThorn Merger Agreement, other than one development milestone in the amount of $10.0 million, which must be settled in cash. None of the BlackThorn Milestones were subject to liability classification and/or derivative accounting and any such contingent consideration will be recognized when the contingency is resolved, and the consideration becomes payable. The Company settled the Phase 3 navacaprant dosing milestone in December 2023 by issuing 6,072,445 shares of its common stock based on the volume weighted average price per share prior to the date the milestone was met and paying cash of $2.3 million to the former stockholders of BlackThorn and participants in the carveout plan (discussed below). As a result, the Company recognized $60.8 million in acquired in-process research and developed expenses for the year ended December 31, 2023 related to the BlackThorn Milestones. None of the other Blackthorn Milestones have been achieved and no such amounts were deemed due or payable as of December 31, 2023.

BlackThorn Carveout Plan

The BlackThorn Merger Agreement required that the Company establish a carveout plan (the BlackThorn Carveout Plan), pursuant to which each BlackThorn stock option holder as of immediately prior to the closing date was allocated a certain number of units (the BlackThorn Carveout Units) based on the number of shares underlying the outstanding options held by each participant at that time. Each BlackThorn Carveout Unit represents a right to receive a portion of the BlackThorn Milestone payment (the BlackThorn Carveout Payments) upon the later of (i) the achievement of a BlackThorn Milestone and (ii) the vesting of the BlackThorn Carveout Unit.

The BlackThorn Carveout Units vest based on time-based schedules that mirror the vesting schedules for the original option awards held by each participant. As of the closing date in September 2020, a portion of the BlackThorn Carveout Units corresponding to the pre-acquisition service periods were fully vested (Vested Carveout Units). The remainder of the BlackThorn Carveout Units vest subject to the continued service of the participants.

The Vested Carveout Units represent contingent consideration for the acquisition as they are attributable to pre-acquisition services rendered by the participants and continuing service is not required for the participants to receive future payments upon a BlackThorn Milestone being achieved. The Company recognizes the contingent consideration obligation for the Vested Carveout Units when the contingency is resolved, and the consideration becomes payable. The BlackThorn Carveout Units that were unvested as of the closing date are dependent on the continued service of participants and were deemed to be a compensation arrangement. The Company recognizes compensation starting from the time payment becomes probable over each participant's service period.

The Company settled the Phase 3 navacaprant dosing milestone in December 2023. The Company recognized contingent consideration related to Vested Carveout Units, which is included in acquired in-process research and developed expenses for the year ended December 31, 2023 related to the BlackThorn Milestones above. In addition, the Company recognized and paid $1.8 million in compensation related to the BlackThorn Carveout Units that were a compensatory arrangement for the year ended December 31, 2023. None of the other BlackThorn Milestones had been achieved and no such amounts were deemed due or payable as of December 31, 2023.

Syllable Life Sciences, Inc.

In September 2020, the Company entered into an agreement and plan of merger (Syllable Merger Agreement) to acquire all of the outstanding equity of Syllable Life Sciences, Inc. (Syllable). The Company acquired Syllable to gain access the rights granted to Syllable under an exclusive license agreement (as amended, the Harvard License Agreement) with President and Fellows of Harvard College (Harvard) and an associated behavior analysis machine learning and computer vision software tool which Syllable was developing to identify and quantify behavior as an indicator of neurological conditions. The transaction was accounted for as an acquisition of assets.

The former stockholders of Syllable are entitled to contingent consideration in the form of development milestones of up to an aggregate of $5.0 million (Syllable Milestones). At the Company's sole discretion, the Syllable Milestone payments may be settled, in cash or shares equity of the Company, or a combination of both, subject to the provisions of the Syllable Merger Agreement and were not subject to liability classification and/or derivative accounting. Any such contingent consideration will be recognized when the contingency is resolved, and the consideration becomes payable. As of December 31, 2023, none of the Syllable Milestones had been achieved and no such amounts were deemed due or payable.

Alairion, Inc.

In November 2020, the Company entered into an agreement and plan of merger (Alairion Merger Agreement) to acquire all of the outstanding equity of Alairion, Inc. (Alairion). The acquisition of Alairion allowed the Company to expand its program pipeline by gaining rights to two preclinical stage research and development programs focused on the treatment of sleep disorders, an H1 receptor antagonist program (the H1 Program) and a GABA receptor positive allosteric modulator program (the GABA Program). The acquisition also provided the Company with access to a license for software that records sleep and related drug discovery and optimization technology platform. The transaction was accounted for as an acquisition of assets.

The holders of Alairion common stock outstanding as of immediately prior to the closing date received non-transferable rights to future milestone payments of up to $33.5 million upon the achievement of specified development events and $135.0 million upon the achievement of specified commercialization events related to the H1 Program and the GABA Program (the Alairion Milestones).

The Alairion Milestone payments may be settled, at the Company's sole discretion, in cash or shares of the Company, or a combination of both, subject to the provisions of the Alairion Merger Agreement. None of the Alairion Milestones were subject to liability classification and/or derivative accounting and any such contingent consideration will be recognized when the contingency is resolved, and the consideration becomes payable. As of December 31, 2023, none of the Alairion Milestones have been recognized. In March 2022, the Company paused the active program acquired from Alairion while it assesses pre-IND feedback received from the FDA and considers alternative options for that program.

Alairion Carveout Plan

The Alairion Merger Agreement also required the Company to establish a carveout plan (the Alairion Carveout Plan) pursuant to which a portion of the payments under the Alairion Milestones, up to $3.0 million (the Alairion Carveout Payments), are reserved for participants under the Alairion Carveout Plan. Participants in the Alairion Carveout Plan are comprised of former Alairion employees, several of whom were retained as employees or consultants of the Company post-acquisition. Under the Alairion Carveout Plan, the Company granted the participants retention units, each representing a right to receive future payments upon the completion of Phase 2 clinical studies with respect to either the H1 Program or the GABA Program and achievement of the related Alairion Milestone, subject to the continued service of the participant until such time and were deemed to be a compensation arrangement. The retention units are forfeited if a participant's service is terminated prior to the receipt of results from the Phase 2 clinical studies associated with the H1 Program and GABA Program. The Company will recognize such compensation starting from the time payment becomes probable over each participant's service period. As of December 31, 2023, it was not probable that Phase 2 clinical studies would be achieved, and no compensation related to the Alairion Carveout Plan had been recorded.

Amgen Inc. Licenses

In September 2021, the Company entered into two license agreements with Amgen Inc. (Amgen) pursuant to which it obtained exclusive, worldwide licenses to develop, manufacture, use, commercialize and distribute products containing compounds that are directed to, in one case, CK1δ, and in the other case, glucocerebrosidase (GCase), both for the treatment of neurodegenerative diseases (the Amgen License Agreements) and related know-how and clinical material (collectively, the Amgen IPR&D Assets). Concurrently, the Company also executed a research collaboration agreement as well as a stock purchase agreement with Amgen. Both agreements were deemed to be separate transactions and not accounted for as part of the acquisition of assets. The Company accounted for these transactions as acquisitions of assets.

The total upfront consideration transferred to Amgen of 20.0 million shares of the Company's Series A-2 convertible preferred stock, with an acquisition date fair value of $157.0 million was allocated to the Amgen IPR&D Assets and expensed in 2021.

Under these two license agreements, Amgen is eligible to receive contingent consideration up to an aggregate of $360.0 million in commercial milestone payments per product payable in cash with a compound directed to CK1δ and up to an aggregate of $360.0 million in commercial milestone payments per product payable in cash with a compound directed to GCase, in each case, upon the achievement of certain sales thresholds and single digit royalties on potential future net sales, related to CK1δ or GCase (the Amgen Milestones). Such contingent consideration was not subject to liability classification and/or derivative accounting and will be recognized when the contingency is resolved, and the consideration becomes payable. As of December 31, 2023, none of the Amgen Milestones had been achieved and no such amounts were deemed due or payable.

In addition, until a specified period of time following the achievement of the first successful Phase 2 clinical trial for any licensed product, if the Company chooses to sell, transfer, sublicense or divest rights to a licensed product in certain major markets, Amgen has a period of time to enter into an agreement with the Company for such rights. The Company determined that these rights of first negotiation were not freestanding instruments from the Amgen License Agreements and did not meet the definition of a derivative.

Vanderbilt License

In February 2022, the Company and Vanderbilt University (Vanderbilt) entered into a license agreement (Vanderbilt License Agreement). Pursuant to the Vanderbilt License Agreement, as amended, the Company obtained an exclusive, worldwide royalty-bearing, sublicensable (subject to certain restrictions) license under certain patent rights and a non-exclusive, worldwide, royalty-bearing, sublicensable (subject to certain restrictions) license under certain know-how covering small molecule positive allosteric modulators (PAMs) predominantly of the muscarinic acetylcholine receptor subtype 4 (M4) to develop, manufacture, and commercialize products, processes and services covered by such patent rights or that incorporate or use such know-how, for any and uses (the Vanderbilt IPR&D Assets). Concurrently, the Company also executed a sponsored research agreement (see Note 8) with Vanderbilt. The sponsored research agreement was deemed to be separate transactions and not accounted for as part of the acquisition of assets. The acquisition of Vanderbilt IPR&D Assets became effective in February 2022.

The licensed patent rights are subject to Vanderbilt's right to use the patent rights for research, internal non-commercial use, and educational purposes. The Company intends to develop the PAMs for the treatment of schizophrenia and other neuropsychiatric disorders. The Company has agreed to use commercially reasonable efforts to develop and commercialize licensed products, and to achieve certain development milestones.

The Company paid Vanderbilt a non-refundable, non-creditable upfront cash payment of $13.0 million for the Vanderbilt IPR&D Assets, which was immediately recognized as acquired in-process research and development expense in the consolidated statement of operations and comprehensive loss as it was determined to have no alternative future use as of the acquisition date. Under the Vanderbilt License Agreement, Vanderbilt is eligible to receive contingent consideration payable in cash up to an aggregate of $42.4 million upon the achievement of specified development milestones and up to an aggregate of $380.0 million upon the achievement of commercial milestone events as well as tiered royalties at mid-single digit percentages on potential future net sales, subject to specified reductions for the lack of patent coverage, generic entry and payment obligations for third-party licenses (the Vanderbilt Milestones). In addition, the Company is obligated to pay Vanderbilt low-double-digit percentage of sublicense income it receives for sublicenses entered into before the achievement of a specified event. Such contingent consideration was not subject to liability classification and/or derivative accounting and will be recognized when the contingency is resolved, and the consideration becomes payable. In October 2023, a $2.0 million Vanderbilt Milestone was achieved and settled in cash in November 2023 and recognized in acquired in-process research and developed expenses for the year ended December 31, 2023. None of the other Vanderbilt Milestones had been achieved and no such amounts were deemed due or payable as of December 31, 2023.

In addition, the Company also had an exclusive option, exercisable for a specified period of time, to negotiate an exclusive license to certain patent rights conceived or developed by Vanderbilt in the course of carrying out the sponsored research pursuant to a sponsored research agreement the between the Company and Vanderbilt, which was entered into at the same time as the Vanderbilt License Agreement. The Company determined that the right to negotiate was not a freestanding instrument from the Vanderbilt License Agreement and did not meet the definition of a derivative. The Company exercised its exclusive option and the parties executed an agreement in December 2023 pursuant to which the Company licensed certain patent rights in return for a payment of $0.8 million that was recognized in acquired in-process research and developed expenses for the year ended December 31, 2023.

7. Commitments and Contingencies

Operating Leases

Lease Agreement

In March 2021, the Company entered into a lease agreement for a 14,688 square feet office facility in South San Francisco, California (SSF Lease). The SSF Lease commenced in April 2021 and expired in December 2023.

In May 2022, the Company executed a sublease agreement for a 30,067 square feet office and laboratory facility in Watertown, Massachusetts. The term of the sublease commenced in June 2022 with respect to the office space and commenced in August 2022 with respect to the laboratory space. The term of the sublease expires in June 2025. A letter of credit was executed in connection with this sublease agreement that is included in restricted cash on the consolidated balance sheets. In August 2023, the sublease was amended to include 972 square feet of additional space, which also expires in June 2025.

Under the lease agreements, the Company is generally required to pay certain operating costs, in addition to rent, such as common area maintenance, taxes, utilities and insurance. Such additional charges are considered variable lease costs and are recognized in the period in which they are incurred. Rent expense for the year ended December 31, 2023 was $4.3 million, including $0.3 million related to short term lease expense, and variable costs were immaterial. Rent expense for the year ended December 31, 2022 was $3.5 million, including $1.1 million related to short term lease expense, and variable costs were $0.1 million.

The Company's operating leases include various covenants, indemnities, defaults, termination rights, security deposits and other provisions customary for lease transactions of this nature.

The maturity of the Company's operating lease liabilities as of December 31, 2023 were as follows (in thousands):

Undiscounted lease payments		
2024	$	3,719
2025		1,892
Total undiscounted lease payments		5,611
Less: Imputed interest		(380)
Operating lease liabilities		5,231
Less: Operating lease liabilities, current portion		3,378
Operating lease liabilities, net of current portion	$	1,853

Supplemental information on the Company's operating leases was as follows:

	Year Ended December 31,	
	2023	2022
Cash paid for operating lease agreements (in thousands)	$ 4,071	$ 2,486
Weighted average remaining lease term (in years)	1.5	2.4
Weighted-average discount rate	10.0%	10.0%

In August 2022, the Company and a lessor mutually terminated a lease agreement for office and laboratory space in Watertown, Massachusetts. As a result, the Company derecognized an operating lease liability and right-of-use asset of $0.7 million and $0.6 million, respectively, and recognized an immaterial gain on termination of the lease.

Indemnification

In the ordinary course of business, the Company enters into agreements that may include indemnification provisions. Pursuant to such agreements, the Company may indemnify, hold harmless and defend an indemnified party for losses suffered or incurred by the indemnified party. Some of the provisions will limit losses to those arising from third party actions. In some cases, the indemnification will continue after the termination of the agreement. The maximum potential amount of future payments the Company could be required to make under these provisions is not determinable. The Company has not incurred material costs to defend lawsuits or settle claims related to these indemnification provisions. The Company has also entered into indemnification agreements with its directors and officers that may require the Company to indemnify its directors and officers against liabilities that may arise by reason of their status or service as directors or officers to the fullest extent permitted by Delaware corporate law. The Company currently has directors' and officers' insurance.

Other Commitments

The Company has various manufacturing, clinical, research and other contracts with vendors in the conduct of the normal course of its business. Such contracts are generally terminable with advanced written notice and payment for any products or services received by the Company through the effective time of termination and any non-cancelable and non-refundable obligations incurred by the vendor at the effective time of the termination. In the case of terminating a clinical trial agreement at a particular site, the Company would also be obligated to provide continued support for appropriate medical procedures at that site until completion or termination.

8. Strategic License and Research and Collaboration Agreements

2015 TSRI License Agreement

In connection with the acquisition of BlackThorn (see Note 6), the Company gained certain exclusive rights to intellectual property related to Kappa Opioid Receptor and V1aR Receptor Antagonist programs as well as an oxytocin receptors positive allosteric modulator program (collectively, the TSRI Programs) under a license agreement between BlackThorn and TSRI originally entered into in November 2015 (as amended, the 2015 TSRI License Agreement). The technology licensed under the 2015 TSRI License Agreement is used in the Company's navacaprant and NMRA-511 research and development programs.

Pursuant to the 2015 TSRI License Agreement, the Company is obligated, among other things, to pay TSRI (i) a nominal annual license fee due and payable on the first day of each calendar year and after the fourth anniversary creditable against any royalties due for such calendar year, (ii) development and regulatory milestone payments of up to $1.5 million in aggregate for the first product from each TSRI Program, which are contingent upon achieving specific development and regulatory milestone events, (iii) commercial milestone payments of up to $3.5 million in aggregate for each occurrence, which are contingent upon achieving specified commercialization milestone events, (iv) tiered low-single digit royalties on future net sales of each royalty-bearing product and (v) a percentage ranging from the mid-single digits to sub teen double digits of any sublicensing revenues the Company receives. In October 2023, the Phase 3 navacaprant dosing milestone was met and the Company paid $0.3 million to TSRI, which was recognized in acquired in-process research and developed expenses for the year ended December 31, 2023. None of the other milestones have been achieved and no royalties were due under the 2015 TSRI License Agreement as of December 31, 2023.

NEUMORA THERAPEUTICS, INC.

Notes to Consolidated Financial Statements

Harvard License Agreement

In connection with the acquisition of Syllable (see Note 6), the Company gained exclusive rights covering certain behavior imagining and behavioral tracking software under a license agreement between Syllable and Harvard originally entered into in June 2020. The Company uses the technology licensed under the Harvard License Agreement to advance its precision neuroscience approach.

Under the Harvard License Agreement, as amended, the Company was obligated, among other things, to pay Harvard (i) nominal annual license maintenance fees, (ii) mid-single digit royalties on future net sales of each royalty-bearing product that utilized the licensed technology, and (iii) a portion of any sub licensing revenues the Company received ranging from the high teens to low-double digits. Effective as of March 31, 2023, Harvard and the Company agreed to terminate the agreement. Prior to termination, the Company had not met any of the development or sales-based milestones.

Research and Collaboration Agreement with Amgen

In September 2021, and concurrently with the Amgen License Agreements (see Note 6), the Company entered into a research collaboration agreement with Amgen (Amgen Collaboration Agreement) to collectively discover drug targets, biomarkers, and other insights associated with central nervous system (CNS) diseases utilizing Amgen's deCODE genetics and human data research capabilities. The Company received exclusive rights under intellectual property generated in the collaboration to exploit therapeutic compounds and diagnostics for use with therapeutics in the CNS field and Amgen received exclusive rights to exploit therapeutic compounds and diagnostics for use with therapeutics outside of the CNS field. The agreement is governed by the Joint Research Committee (JRC), which is made up of equal representatives from each of the Company and Amgen to manage the progress and direction of research and development activities. All decisions made by the JRC shall be by consensus with each party having one vote, and if the JRC cannot reach a consensus, the dispute shall be referred to each company's executive officers. If the executive officers fail to reach a consensus, the Company will have final decision-making authority provided that the matter does not relate to the approval of, or any material change to, a project, decisions to acquire rights from a third party, decisions or activities that are in conflict with Amgen's database usage or data access rights, or the approval of external costs and expenses relating to certain new data generation activities or certain new dataset acquisitions, as such matters require mutual agreement.

In return for Amgen performing research and development activities under the agreement, the Company is committed to making non-refundable, non-creditable quarterly payments over the first two years totaling $50.0 million and for the third year $12.5 million. Additionally, the Company will reimburse Amgen for certain direct, out-of-pocket external costs and expenses that are incurred in the performance of the activities under the Amgen Collaboration Agreement.

The term of the agreement is up to five years, although it will terminate after three years if the Company and Amgen do not mutually agree upon a compensation structure for years four and five. If the parties do not reach an agreement at least 30 days prior to the end of year three, the Amgen Collaboration Agreement will automatically terminate upon its third anniversary. Further, either party can terminate the Amgen Collaboration Agreement upon material uncured breach or bankruptcy by the other party, in which case all amounts that have become due through the date of termination are non-refundable.

Amgen also has an exclusive option to negotiate, and the right of first negotiation, to obtain exclusive, worldwide licenses to research, develop, commercialize, and otherwise exploit up to two therapeutic compounds or any pharmaceutical product containing such therapeutic compound arising from the collaboration. That right exists with respect to each compound for a certain period of time following positive Phase 2 results for that compound. The Company determined that these rights were not freestanding instruments from the Amgen Collaboration Agreement and did not meet the definition of a derivative. Upon execution of the Amgen Collaboration Agreement in September 2021, the Company was obligated to start paying Amgen non-refundable quarterly payments. As of December 31, 2023 and December 31, 2022, the related prepaid research and development costs included in the consolidated balance sheets were $6.3 million and $11.9 million, respectively, within prepaid expenses and other current assets. The Company recorded $24.4 million and $25.1 million of related research and development expenses during the year ended December 31, 2023 and 2022, respectively.

Sponsored Research Agreement with Vanderbilt

In February 2022, concurrently with the Vanderbilt License Agreement (see Note 6), the Company entered into a sponsored research agreement with Vanderbilt (Vanderbilt Research Agreement), pursuant to which Vanderbilt agreed to provide the Company research services to develop a M4 PAM back-up program.

In return for Vanderbilt performing research and development activities under the agreement, the Company agreed to make quarterly payments for research up to a total of $1.7 million on an annual basis. The term of the agreement ended in September 2023. In addition, the Company also had an exclusive option to negotiate an exclusive license to certain patent rights conceived or developed by Vanderbilt in the course of carrying out the sponsored research (see Note 6).

9. Convertible Preferred Stock and Stockholders' Equity (Deficit)

Convertible Preferred Stock

Upon closing of the IPO, all of the outstanding convertible preferred stock automatically converted into 104,417,415 shares of common stock. Subsequent to the closing of the IPO, there were no shares of convertible preferred stock outstanding.

As of December 31, 2022, the Company's convertible preferred stock consisted of the following:

	Shares Authorized	Shares Issued and Outstanding	Carrying Value	Liquidation Preference
		(in thousands)		
Series A-1	47,471	5,915	$ 38,208	$ 46,413
Series A-2	697,948	88,952	693,263	697,948
Series B	74,930	9,550	112,216	112,395
Total convertible preferred stock	820,349	104,417	$ 843,687	$ 856,756

Amgen Future Financing

Subject to certain conditions, Amgen was obligated to provide the Company with additional financing of up to $100.0 million in equity securities. This obligation terminated upon the completion of the IPO in September 2023. This future financing was a freestanding financial instrument and was not subject to liability classification and/or derivative accounting. The value of this future financing was determined to be de minimis at issuance, as of December 31, 2022 and prior to termination, as it would be settled based on the same terms and conditions other third parties would receive.

Common Stock

Common stock outstanding in the consolidated balance sheet and consolidated statement of convertible preferred stock and stockholders' equity (deficit) as of December 31, 2023 includes 646,061 shares of restricted stock that vest based on service conditions and are subject to the Company's right of repurchase upon termination of services and 637,240 shares of restricted stock that vest based on performance conditions (see Note 11). Common stock reserved for future issuance consisted of the following:

	December 31, 2023
	(in thousands)
Shares reserved for options and restricted stock units issued under the Plans	14,582
Shares reserved for future issuance under the Plans	14,588
Total	29,170

In addition, the Company may be required to issue additional shares of its capital stock if certain milestone conditions are met pursuant to the contingent consideration associated with the Company's acquisitions of assets (see Note 6). In December 2023, 6,072,445 shares of common stock were issued related to BlackThorn Merger Agreement upon achievement of the Phase 3 navacaprant dosing milestone that was met in October 2023. As of December 31, 2023, no shares have been reserved for potential future issuances.

10. Preferred Stock Warrants

In connection with the BlackThorn acquisition in September 2020, the Company issued preferred stock warrants to purchase up to 292,193 shares of Series A-1 convertible preferred stock with an exercise price of $10.60 per share. In December 2022, 210,481 preferred stock warrants were exercised and the remaining 81,712 preferred stock warrants expired as of December 31, 2022. As a result, the Company issued 157,371 shares of Series A-1 convertible preferred stock, including 104,563 to a related party, upon the exercise and net exercise of preferred stock warrants.

11. Stock-Based Compensation

2023 Equity Incentive Plan

In September 2023, the Company adopted the 2023 Equity Incentive Plan (the 2023 Plan) that became effective in connection with the Company's IPO. The 2023 Plan provides for the grant of stock options, restricted stock awards, restricted stock unit awards, and other stock-based awards to employees, directors, and non-employee service providers of the Company.

Awards granted under the 2023 Plan expire no later than ten years from the date of grant. The price of stock options shall not be less than 100% of the estimated fair value on the date of grant and typically vest over a four-year period although may be granted with different vesting terms. The 2023 Plan initially reserved 16,373,061 shares of common stock for the issuance of future awards and provides for an automatic annual increase in the number of shares of common stock reserved for future issuance under the 2023 Plan.

2023 Employee Share Purchase Plan

In September 2023, the Company adopted the 2023 Employee Share Purchase Plan (the 2023 ESPP) that became effective in connection with the Company's IPO. The 2023 ESPP initially reserved 1,526,984 shares of common stock for the issuance of future awards and provides for an automatic annual increase in the number of shares of common stock reserved for future issuance under the 2023 ESPP.

2020 Equity Incentive Plan

In January 2020, the Company adopted the 2020 Equity Incentive Plan (the 2020 Plan) that provides for the grant of stock options, restricted stock awards, restricted stock unit awards, and other stock-based awards to employees, directors, and non-employee service providers of the Company. The 2020 Plan was suspended in connection with the Company's IPO and no further grants will be made under the 2020 Plan. The 2020 Plan continues to govern the terms and conditions of outstanding awards granted under the 2020 Plan.

2015 Equity Incentive Plan

Upon the closing of the BlackThorn acquisition in September 2020, the Company assumed BlackThorn's 2015 Equity Incentive Plan (the 2015 Plan, and collectively with the 2020 Plan and 2023 Plan, the Plans), pursuant to which outstanding stock options previously granted under the 2015 Plan converted into stock options to purchase common stock of the Company, which remain subject to the terms and conditions of the 2015 Plan. The 2015 Plan was suspended in connection with the closing of the acquisition of BlackThorn in September 2020.

Stock Option Activity

	Outstanding Stock Options	Weighted-Average Exercise Price Per Share	Weighted-Average Remaining Contractual Term (years)	Aggregate Intrinsic Value
	(in thousands, except per share amounts and years)			
Outstanding as of December 31, 2022	8,570	$ 3.79	8.2	$ 24,085
Granted	8,053	8.08		
Exercised	(972)	2.94		
Canceled and forfeited	(1,650)	3.61		
Expired	(218)	3.20		
Outstanding as of December 31, 2023	13,783	$ 6.39	8.7	$ 146,966
Vested as of December 31, 2023	3,430	$ 4.01	7.5	$ 44,713
Exercisable as of December 31, 2023	3,621	$ 3.93	7.5	$ 47,493

The weighted-average grant-date fair value per share of stock options granted during the years ended December 31, 2023 and 2022 was $7.77 and $3.77 per share, respectively. The aggregate grant-date fair value of stock options vested during the years ended December 31, 2023 and 2022 was approximately $9.1 million and $5.2 million, respectively.

The stock option activity table above excludes options granted to purchase 446,068 shares of common stock that were originally granted with market conditions to one of the Company's executives.

Fair Value of Stock Options

The fair value of stock options granted for employee and non-employee awards was estimated at the grant date using the Black-Scholes option pricing model based on the following assumptions:

	Year Ended December 31,	
	2023	2022
	(in thousands)	
Expected volatility	89.6% - 96.5%	87.2% - 91.1%
Expected term (years)	4.0 - 6.1	4.5 - 6.5
Risk-free interest rate	3.4% - 4.9%	1.7% - 4.2%
Expected dividend yield	—	—

Expected volatility—As there is limited trading history for the Company's common stock, the Company has determined expected volatility based on the average historical stock price volatility of comparable publicly-traded companies and expects to continue to do so until such time as it has adequate historical data regarding the volatility of its own traded stock price. The comparable companies are chosen based on their similar size, stage in the life cycle or area of therapeutic focus. The historical volatility is calculated based on a period of time commensurate with the expected term assumption.

Expected term—The expected term of the Company's stock options has been estimated using the simplified method for awards that qualify as plain-vanilla stock options. The simplified method calculates the expected term as the average of the time-to-vesting and the contractual life of the stock options.

Risk-free interest rate—The risk-free interest rate assumption was based on the U.S. Treasury yield curve in effect at the time of grant of the award for time periods approximately equal to the expected term of the award.

Expected dividend yield—The expected dividend yield assumption is zero as the Company has never paid and has no plans to pay dividends on its common stock in the foreseeable future.

Early Exercise of Employee Stock Options

The Company's Plans allow for certain employees to exercise their stock options prior to vesting into shares of restricted common stock. The proceeds from early exercised stock options are recorded as liabilities in the consolidated balance sheets at the time of exercise and reclassified to common stock and additional paid-in capital as the underlying stock options vest and the Company's repurchase right lapses. As of December 31, 2023, the Company had issued 1,004,607 shares of restricted common stock upon the early exercise of unvested stock options, of which 818,107 shares had vested and 122,987 unvested shares had been repurchased, such that 63,513 shares or restricted stock remained outstanding and unvested.

Restricted Stock Activity

The Company's Plans allow for the grant of restricted common stock and restricted stock units to certain employees, executives, non-employee scientific advisors, and third-party service providers. The restrictions lapse over time primarily according to service-based vesting conditions of each award. In the event of a voluntary or involuntary termination of the holder's continuous provision of services to the Company, any unvested portion of the restricted stock award is automatically forfeited.

The following table summarizes the Company's restricted stock activity:

	Shares of Restricted Common Stock	Weighted-Average Grant Date Fair Value Per Share	Shares of Restricted Stock Units	Weighted-Average Grant Date Fair Value Per Share
	(in thousands, except per share amounts)			
Outstanding and unvested as of December 31, 2022	2,902	$ 0.90	—	$ —
Granted	509	8.93	353	17.00
Vested	(2,488)	0.78	—	—
Canceled	(83)	0.88	—	—
Outstanding and unvested as of December 31, 2023	840	$ 6.11	353	$ 17.00

The restricted stock activity table above excludes 254,896 shares of restricted common stock issued to certain of the Company's scientific advisors which vest based on the achievement of certain performance conditions to be separately defined and approved by the Company's board of directors. As the performance conditions had not been determined as of December 31, 2023, the criteria for establishing a grant date, and accordingly a measurement date, were not met as of that date.

Award with Market and Performance Conditions

In June 2021, the Company granted stock options to purchase 446,068 shares of its common stock to one of its executive officers with an exercise price of $2.52 per share that contained both market and service conditions (the Market Award). Subject to the holder's continued service, the Market Award provided for vesting in four equal tranches once the Company's stock price exceeded certain thresholds. The original grant-date fair value of the Market Award of $0.9 million was determined using a Monte Carlo simulation model using an expected volatility of 100.0% and risk-free rate of 1.6%.

In January 2022, the Company amended the terms of the Market Award such that the award would vest in three modified tranches. One tranche of 223,034 stock options was based on a performance condition and two tranches of 111,517 stock options each were based on revised Company stock price thresholds and/or vesting schedules, subject to the holder's continued service. The modification resulting in a performance-based tranche was determined to be a probable-to-improbable modification and the modification resulting in two revised market-based tranches were determined to be probable-to-probable modifications. The modification resulted in $0.3 million in total incremental expense.

In June 2023, the Company amended the terms such that vesting schedule for the two tranches of 111,517 stock options each that were based on the Company stock price thresholds would instead vest monthly over 3 years, subject to the holder's continued service. The modification of the two market-based tranches were deemed to be probable-to-probable modifications. The modification resulted in $0.1 million in total incremental expense.

The unrecognized original grant-date fair value, together with incremental expense, is recognized as compensation for each tranche over the requisite service period. For the year ended December 31, 2023 stock-based compensation related to the tranches was $0.3 million, and includes expense recognized for the performance-based tranche as the performance condition was met upon the completion of the Company's IPO. For the year ended December 31, 2022, stock-based compensation related to the market-based tranches was $0.4 million and no expense was recognized for the performance-based tranche as the performance condition was not probable of being met.

Awards with Performance Conditions

In 2020, the Company approved 700,965 stock options and 892,136 restricted common stock to certain of the Company's scientific advisors, which vest based on the achievement of performance conditions to be determined and continued service to the Company.

In December 2022 and January 2023, the Company's board of directors established performance conditions for 337,738 stock options and 63,724 stock options, respectively, such that the criteria for establishing a grant date, and accordingly a measurement date, were met for these performance stock options and the remaining 299,503 stock options with performance conditions to be established were cancelled in July 2023 because certain of the Company's scientific advisors were terminated. Further, as of December 31, 2023, the performance conditions for 382,344 restricted common stock were established, 254,896 restricted common stock with performance conditions to be established were cancelled in July 2023 because certain of the Company's scientific advisors were terminated and the performance conditions for the remaining 254,896 restricted common stock have yet to be established.

As of December 31, 2023, it was probable that certain of the development related milestones would be met for the performance stock options and performance restricted stock that were granted and for which expense was recognized using the accelerated attribution method. For the years ended December 31, 2023 and 2022, the Company recognized expense related to these awards with performance conditions that were probable of being met of $1.0 million and $0.8 million, respectively.

Award Modification

In August 2023, the Company accelerated unvested stock options and extended the post-termination exercise period for such awards in connection with the resignation of a member of its board of directors in connection with the IPO. The modification resulted in the recognition of $0.9 million in stock-based compensation.

Stock-Based Compensation

The following table summarizes total stock-based compensation included in the Company's consolidated statements of operations and comprehensive loss:

	Year Ended December 31,	
	2023	2022
	(in thousands)	
Research and development	$ 8,067	$ 4,252
General and administrative	9,173	4,046
Total stock-based compensation	$ 17,240	$ 8,298

NEUMORA THERAPEUTICS, INC.

Notes to Consolidated Financial Statements

As of December 31, 2023, there was $63.6 million and $10.2 million of unrecognized stock-based compensation related to stock options and restricted stock outstanding, respectively, including stock options and restricted common stock for which achievement of milestones was not probable, which were expected to be recognized over a weighted-average remaining service period of 2.5 years and 2.8 years, respectively.

Services Agreement

In May 2020, the Company entered into a services agreement with a vendor for assistance in evaluating assets and technologies in the field of neurodegeneration. In return for services provided, the Company agreed to issue the vendor shares of its common stock representing a value of $1.0 million upon the achievement of certain milestones tied to the successful in-license or acquisition of assets (the Milestone Shares). The Company concluded the Milestone Shares are stock settled debt that are required to be classified as a liability and recognized at such time the milestones are probable of being met. As of December 31, 2023, the milestones were not probable of being met.

12. Income Taxes

A reconciliation of the Company's federal income tax rate and effective income tax rate is summarized as follows:

	Year Ended December 31,	
	2023	2022
	(in thousands)	
Federal income taxes	21.0 %	21.0 %
State income taxes, net of federal benefit	2.8	3.7
Milestone payments	(5.3)	—
Permanent differences	(0.9)	(0.5)
Research and development tax credits	2.1	2.1
Tax law change	3.6	—
State rate adjustment	0.5	2.2
Uncertain tax positions	(0.2)	(0.3)
Valuation allowance	(23.7)	(28.2)
Effective income tax rate	(0.1)%	— %

Deferred tax assets and liabilities reflect the net tax effects of net operating loss and tax credit carryforwards and temporary differences between the carrying amount of assets and liabilities for financial reporting and the amounts used for tax purposes. Significant components of the Company's deferred tax assets and liabilities are summarized as follows:

	Year Ended December 31,	
	2023	2022
	(in thousands)	
Deferred tax assets:		
Net operating losses	$ 79,117	$ 63,937
Capitalized license agreements	41,032	39,113
Capitalized research and development expense	57,872	26,132
Research and development credits	12,981	8,425
Compensation related	5,942	3,496
Operating lease liabilities	1,429	2,080
Other	407	467
Total deferred tax assets	198,780	143,650
Less: valuation allowance	(197,280)	(141,557)
Total deferred tax assets less valuation allowance	1,500	2,093
Deferred tax liabilities:		
Operating lease right-of-use assets	(1,385)	(2,028)
Fixed assets	(115)	(65)
Total deferred tax liabilities	(1,500)	(2,093)
Net deferred tax assets	$ —	$ —

The Company determines its valuation allowance on deferred tax assets by considering both positive and negative evidence in order to ascertain whether it is more likely than not that deferred tax assets will be realized. Realization of deferred tax assets is dependent upon the generation of future taxable income, if any, the timing, and amount of which are uncertain. Due to the Company's recent history of operating losses, the Company believes that recognition of the deferred tax assets arising from the above-mentioned future tax benefits is currently not likely to be realized and, accordingly, has provided a valuation allowance on its deferred tax assets. The valuation allowance increased by $55.7 million and $37.1 million for the years ended December 31, 2023 and 2022, respectively, primarily due to the increase in the Company's net operating losses (NOL) during the periods and deferred tax assets related to capitalized research and development expenses.

NOLs and tax credit carryforwards as of December 31, 2023, were as follows (in thousands):

	Amount	Expiration Years
NOLs, federal (post-December 31, 2017)	$ 273,262	Indefinite (1)
NOLs, federal (pre-January 1, 2018)	40,370	2034 through 2036
NOLs, state	251,417	2034 thru 2043
Research and development tax credits, federal	12,202	2034 thru 2043
Research and development tax credits, California	4,408	Indefinite
Research and development tax credits, Massachusetts	1,002	2034 thru 2038

(1) NOL carryforward generated after 2017 which can be carried forward indefinitely and can generally be used to offset up to 80% of future taxable income

Utilization of the NOL carryforwards and research and development tax credit carryforwards may be subject to a substantial annual limitation under Section 382 of the Internal Revenue Code of 1986, as amended (Section 382) due to ownership changes that have occurred previously or that could occur in the future. These ownership changes may limit the amount of carryforwards that can be utilized annually to offset future taxable income. In general, an ownership change, as defined by Section 382, results from transactions increasing the ownership of certain stockholders or public groups in the stock of a corporation by more than 50% over a three-year period. The Company has not conducted a study to assess whether a change of control has occurred, including changes of control associated with the acquisitions of assets. Any limitation may result in expiration of a portion of the NOL carryforwards or research and development tax credit carryforwards before utilization; however, such limitation, if any, would not have an impact on the Company's financial statement due to the full valuation.

Uncertain Tax Positions

A reconciliation of the beginning and ending balance of total gross unrecognized tax benefits is as follows:

	December 31,	
	2023	2022
	(in thousands)	
Beginning balance of unrecognized tax benefits	$ 8,176	$ 7,821
Gross increases based on tax positions related to current year	391	355
Gross increases based on tax positions related to prior years	97	—
Ending balance of unrecognized tax benefits	$ 8,664	$ 8,176

The unrecognized tax benefits, if recognized, would not have an impact on the Company's effective tax rate assuming the Company continues to maintain a full valuation allowance position. As of December 31, 2023, no significant increases or decreases are expected to the Company's uncertain tax positions within the next twelve months.

The Company files income tax returns in the United States, and the states of California and Massachusetts. Due to net operating loss carryforwards, all years effectively remain open for income tax examination by tax authorities in the United States and states in which the Company files tax returns.

NEUMORA THERAPEUTICS, INC.

Notes to Consolidated Financial Statements

13. Net Loss Per Share

The following table summarizes the computation of basic and diluted net loss per share:

	Year Ended December 31,	
	2023	2022
	(in thousands, except per share amounts)	
Numerator:		
Net loss	$ (235,925)	$ (130,904)
Denominator:		
Weighted-average common shares outstanding, basic and diluted	65,021	27,207
Net loss per share, basic and diluted	$ (3.63)	$ (4.81)

The following outstanding potentially dilutive common stock equivalents were excluded from the computation of diluted net loss per share for the periods presented because including them would have been antidilutive:

	December 31,	
	2023	2022
	(in thousands)	
Convertible preferred stock	—	104,417
Common stock options and restricted stock units	14,582	8,570
Performance stock options (with performance conditions to be established)	—	363
Early exercised stock options subject to future vesting	64	532
Unvested restricted stock awards	840	2,902
Performance restricted stock (with performance conditions to be established)	255	510
Total	15,741	117,294

14. Related Party Transactions

In September 2022, the Company issued 2,973,800 shares of its Series B convertible preferred stock for total cash proceeds of $35.0 million to two significant stockholders that have designated members on the Company's board of directors and each of whom is considered to be a related party.

In December 2022, 104,563 preferred stock warrants held by a related party were exercised at $10.60 per share (see Note 10).

As of December 31, 2023 and 2022, the Company was obligated to pay Amgen $3.1 million and $6.3 million, respectively, under the Amgen Collaboration Agreement, which was recorded within current liabilities on the consolidated balance sheets. As of December 31, 2023 and 2022, $6.3 million and $11.9 million, related to amounts prepayable to Amgen were recorded as prepaid expenses and other current assets on the consolidated balance sheets. During the years ended December 31, 2023 and 2022, the Company recorded $24.4 million and $25.1 million, respectively, of research and development expenses with Amgen.

Subject to certain conditions, Amgen was also obligated to provide the Company with additional financing of up to $100.0 million. This obligation terminated upon the completion of the Company's IPO (see Note 9).

15. Defined Contribution Plan

The Company sponsors a 401(k) Plan whereby eligible employees can elect to contribute to the 401(k) Plan, subject to certain limitations, on a pretax basis. Effective from January 1, 2022, the Company commenced matching employee contributions at a rate of 50%, with a maximum matching employer contribution of up to 3% of employee contributions.

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

None.

ITEM 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

As of December 31, 2023, management, with the participation and supervision of our Chief Executive Officer and our Chief Financial Officer, have evaluated our disclosure controls and procedures as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, or the Exchange Act. Based on that evaluation, our Chief Executive Officer and our Chief Financial Officer have concluded that, as of December 31, 2023, our disclosure controls and procedures were effective to provide reasonable assurance that information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in SEC 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 timely decisions regarding required disclosure.

Management's Annual Report on Internal Control Over Financial Reporting

This Annual Report does not include a report of management's assessment regarding internal control over financial reporting or an attestation report of the company's registered public accounting firm due to a transition period established by rules of the Securities and Exchange Commission for newly public companies.

Changes in Internal Control over Financial Reporting

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

Inherent Limitations on Effectiveness of Controls

The effectiveness of any system of internal control over financial reporting, including ours, is subject to inherent limitations, including the exercise of judgment in designing, implementing, operating, and evaluating the controls and procedures, and the inability to eliminate misconduct completely. Accordingly, any system of internal control over financial reporting, including ours, no matter how well designed and operated, can only provide reasonable, not absolute assurances. In addition, 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. We intend to continue to monitor and upgrade our internal controls as necessary or appropriate for our business but cannot assure you that such improvements will be sufficient to provide us with effective internal control over financial reporting.

ITEM 9B. Other Information.

None.

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

None.

ITEM 10. Directors, Executive Officers and Corporate Governance.

Except as set forth below, the information required by this item is incorporated by reference to our definitive Proxy Statement to be filed with the SEC in connection with our 2024 Annual Meeting of Stockholders within 120 days after the end of the fiscal year ended December 31, 2023.

We have adopted a Code of Business Conduct and Ethics that applies to all of our directors, officers and employees, including our principal executive officer and principal financial officer. A current copy of the code is posted on the Investors Corporate Governance section of our website, which is located at www.neumoratx.com.

We intend to satisfy the disclosure requirement under Item 5.05 of Form 8-K regarding an amendment to, or waiver from, a provision of this Code of Business Conduct and Ethics by posting such information on our website, at the address and location specified above

and, to the extent required by the listing standards of The Nasdaq Global Market, by filing a Current Report on Form 8-K with the SEC, disclosing such information.

ITEM 11. Executive Compensation.

The information required by this item is incorporated by reference to our definitive Proxy Statement to be filed with the SEC in connection with our 2024 Annual Meeting of Stockholders within 120 days after the end of the fiscal year ended December 31, 2023.

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

The information required by this item is incorporated by reference to our definitive Proxy Statement to be filed with the SEC in connection with our 2024 Annual Meeting of Stockholders within 120 days after the end of the fiscal year ended December 31, 2023.

ITEM 13. Certain Relationships and Related Party Transactions, and Director Independence.

The information required by this item is incorporated by reference to our definitive Proxy Statement to be filed with the SEC in connection with our 2024 Annual Meeting of Stockholders within 120 days after the end of the fiscal year ended December 31, 2023.

ITEM 14. Principal Accountant Fees and Services.

The information required by this item is incorporated by reference to our definitive Proxy Statement to be filed with the SEC in connection with our 2024 Annual Meeting of Stockholders within 120 days after the end of the fiscal year ended December 31, 2023.

ITEM 15. Exhibits.

The following documents are filed as part of this Annual Report on Form 10-K:

a) Financial Statements. See Index to Financial Statements included in the consolidated financial statements in this Annual Report on Form 10-K.

b) Financial Statement Schedules. All financial statement schedules are omitted because they are not applicable or required, or the information required to be set forth therein is included in the consolidated financial statements or notes thereto included in the Index to Financial Statements of this Annual Report on Form 10-K.

c) Exhibits. The exhibits required to be filed as part of this Annual Report on Form 10-K are listed in the Exhibit List attached hereto and are incorporated herein by reference.

Exhibit Number	Description	Incorporated by Reference			Filed Herewith
		Form	Date	Number	
2.1†	Agreement and Plan of Merger, dated June 1, 2020, by and among the Registrant, Berries Merger Sub, Inc, BlackThorn Therapeutics, Inc. and Fortis Advisors LLC.	S-1	8/25/2023	2.1	
2.2†	Agreement and Plan of Merger, dated November 24, 2020, by and among the Registrant, Alairion Merger Sub I, Inc, Alairion Merger Sub II, LLC, Alairion, Inc. and John F. Dee.	S-1	8/25/2023	2.2	
3.1	Amended and Restated Certificate of Incorporation, as amended, currently in effect.	8-K	9/19/2023	3.1	
3.2	Bylaws, as amended, currently in effect.	8-K	9/19/2023	3.2	
4.1	Reference is made to Exhibits 3.1 through 3.2				
4.2	Form of Common Stock Certificate.	S-1/A	9/11/2023	4.2	
10.1	Investors' Rights Agreement, dated September 22, 2022, by and among the Registrant and the investors listed therein.	S-1	8/25/2023	10.1	
10.2†	Research Collaboration and License Agreement, dated September 10, 2021, by and between the Registrant and Amgen Inc.	S-1	8/25/2023	10.2	
10.3†	Exclusive License Agreement for CK1d, dated September 10, 2021, by and between the Registrant and Amgen Inc.	S-1	8/25/2023	10.3	
10.4(a)†	Exclusive License Agreement for GCase, dated September 10, 2021, by and between the Registrant and Amgen Inc.	S-1	8/25/2023	10.4(a)	
10.4(b)†	First Amendment to Exclusive License Agreement for GCase, dated June 14, 2022, by and between the Registrant and Amgen, Inc.	S-1	8/25/2023	10.4(b)	
10.5(a)†	License Agreement, dated November 23, 2015, by and between BlackThorn Therapeutics, Inc. and Scripps Research Institute.	S-1	8/25/2023	10.5(a)	
10.5(b)†	First Amendment to License Agreement, dated November 13, 2017, by and between BlackThorn Therapeutics, Inc. and Scripps Research Institute.	S-1	8/25/2023	10.5(b)	
10.5(c)†	Second Amendment to License Agreement, dated April 9, 2019, by and between BlackThorn Therapeutics, Inc. and Scripps Research Institute.	S-1	8/25/2023	10.5(c)	
10.6(a)#	BlackThorn Therapeutics, Inc. 2015 Equity Incentive Plan.	S-8	9/19/2023	99.1(a)	
10.6(b)#	Form of Stock Option Agreement under the BlackThorn Therapeutics, Inc. 2015 Equity Incentive Plan.	S-8	9/19/2023	99.1(b)	
10.7(a)#	2020 Equity Incentive Plan.	S-1	8/25/2023	10.6(a)	
10.7(b)#	Form of Stock Option Agreement under the 2020 Equity Incentive Plan.	S-1	8/25/2023	10.6(b)	
10.7(c)#	Form of Restricted Stock Purchase Agreement under the 2020 Equity Incentive Plan.	S-1	8/25/2023	10.6(c)	
10.8(a)#	2023 Incentive Award Plan.	S-8	9/19/2023	99.3(a)	
10.8(b)#	Form of Stock Option Grant Notice and Stock Option Agreement under the 2023 Incentive Award Plan.	S-1	8/25/2023	10.7(b)	
10.8(c)#	Form of Restricted Stock Unit Award Grant Notice and Restricted Stock Unit Award Agreement under the 2023 Incentive Award Plan.	S-1	8/25/2023	10.7(c)	
10.9#	Employee Stock Purchase Plan.	S-8	9/19/2023	99.4	
10.10#	Employment Agreement by and between the Registrant and Paul L. Berns.	S-1	8/25/2023	10.9	
10.11#	Employment Agreement by and between the Registrant and John Dunlop, Ph.D.	S-1	8/25/2023	10.10	
10.12#	Employment Agreement by and between the Registrant and Joshua Pinto, Ph.D.	S-1	8/25/2023	10.11	
10.13#	Non-Employee Director Compensation Program.	S-1/A	9/11/2023	10.21	
10.14	Form of Indemnification and Advancement Agreement for directors and officers.	S-1/A	9/11/2023	10.13	

10.15(a)†	License Agreement, dated February 10, 2022, by and between the Registrant and Vanderbilt University.	S-1	8/25/2023	10.14(a)	
10.15(b)†	First Amendment to License Agreement, dated July 17, 2023, by and between the Registrant and Vanderbilt University.	S-1	8/25/2023	10.14(b)	
10.16#	Form of Executive Employment Agreement.	S-1	8/25/2023	10.15	
10.17#	Form of Executive Employment Agreement for Chief Executive Officer.	S-1	8/25/2023	10.16	
10.18#	Separation Agreement by and between the Registrant and John Dunlop, Ph.D.	S-1	8/25/2023	10.17	
10.19#	Consulting Agreement, dated as of May 20, 2023, by and between the Registrant and John Dunlop, Ph.D.	S-1	8/25/2023	10.18	
10.20#	Executive Chairman Agreement, dated as of July 3, 2023, by and between the Registrant and Paul L. Berns.	S-1	8/25/2023	10.19	
10.21#	Executive Employment Agreement, dated as of June 2, 2023, by and between the Registrant and Henry O. Gosebruch.	S-1	8/25/2023	10.20	
10.22#	Executive Employment Agreement, dated as of November 13, 2023, by and between the Registrant and Jason Duncan.				X
10.23#	Executive Employment Agreement, dated as of January 1, 2023, by and between the Registrant and Carol Y. Suh.				X
23.1	Consent of Independent Registered Public Accounting Firm				X
24.1	Power of Attorney (included on signature page)				X
31.1	Certification of Principal Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				X
31.2	Certification of Principal Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				X
32.1+	Certification of Principal Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				X
32.2+	Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				X
97.1	Clawback Policy				X
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				X
101.SCH	Inline XBRL Taxonomy Extension Schema With Embedded Linkbase Documents				X
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)				X

† Portions of the exhibit, marked by brackets, have been omitted because the omitted information (i) is not material and (ii) is the type of information that the registrant both customarily and actually treats as private and confidential.

# Indicates management contract or compensatory plan.

+ This certification accompanies the Annual Report pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 and shall not be deemed "filed" by the Registrant for purposes of Section 18 of the Securities Exchange Act of 1934, as amended.

ITEM 16. Form 10-K Summary.

None.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Neumora Therapeutics, Inc.

Date: March 7, 2024

By: /s/ Henry O. Gosebruch
Name: Henry O. Gosebruch
Title: Chief Executive Officer

POWER OF ATTORNEY

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

Name	Title	Date
/s/ Henry O. Gosebruch Henry O. Gosebruch	Chief Executive Officer (principal executive officer)	March 7, 2024
/s/ Joshua Pinto, Ph.D Joshua Pinto, Ph.D	Chief Financial Officer (principal financial officer)	March 7, 2024
/s/ Michael Milligan Michael Milligan	Principal Accounting Officer	March 7, 2024
/s/ Paul L. Berns Paul L. Berns	Director	March 7, 2024
/s/ Kristina Burow Kristina Burow	Director	March 7, 2024
/s/ Matthew K. Fust Matthew K. Fust	Director	March 7, 2024
/s/ Alaa Halawa Alaa Halawa	Director	March 7, 2024
/s/ Maykin Ho, Ph.D Maykin Ho, Ph.D	Director	March 7, 2024
/s/ David Piacquad David Piacquad	Director	March 7, 2024

Exhibit 10.22

NEUMORA THERAPEUTICS, INC.

EXECUTIVE EMPLOYMENT AGREEMENT

This Executive Employment Agreement (the "Agreement) is entered into between Neumora Therapeutics, Inc., a Delaware corporation (the "Company"), and Jason Duncan ("Executive" and, together with the Company, the "Parties") effective as of November 13, 2023 (the "Effective Date").

WHEREAS, the Company desires to assure itself of the continued services of Executive by engaging Executive to perform services as an employee of the Company commencing December 11, 2023 (the date Executive actually commences employment with the Company, the "Commencement Date") under the terms hereof; and

WHEREAS, Executive desires to provide continued services to the Company on the terms herein provided; and

NOW, THEREFORE, in consideration of the foregoing, and for other good and valuable consideration, including the respective covenants and agreements set forth below, the receipt and sufficiency of which are hereby acknowledged, the Parties hereto agree as follows:

1. Employment.

(a) General. The Company shall continue to employ Executive upon the terms and conditions provided herein effective as of the Commencement Date.

(b) Position and Duties. As of the Effective Date, Executive: (i) shall serve as the Company's Chief Legal Officer, with responsibilities, duties, and authority usual and customary for such position, subject to direction by the Chief Executive Officer of the Company (the "CEO") or another executive officer identified by the CEO; (ii) shall report directly to the CEO; and (iii) agrees promptly and faithfully to comply with all present and future policies, requirements, rules and regulations, and reasonable directions and requests, of the Company in connection with the Company's business. At the Company's request, Executive shall serve the Company and/or its subsidiaries and affiliates in such other capacities in addition to the foregoing as the Company shall designate, provided that such additional capacities are consistent with Executive's position as the Company's Chief Legal Officer. In the event that Executive serves in any one or more of such additional capacities, Executive's compensation shall not automatically be increased on account of such additional service.

(c) Performance of Executive's Duties. During Executive's employment with the Company, and except for periods of illness, vacation, disability, or reasonable leaves of absence or as discussed in Section 1(e) below, Executive shall devote Executive's full time and attention to the business and affairs of the Company. The rights of Executive under this Agreement shall not be affected by any change in the title, duties, or capacity of Executive during Executive's employment with the Company.

(d) Principal Office. Executive shall perform services for the Company partially from the Company's offices and partially from Executive's home office, or, with the Company's consent, at any other place in connection with the fulfillment of Executive's role with the Company; provided, however, that the Company may from time to time require Executive to travel temporarily to other locations in connection with the Company's business.

(e) Exclusivity. Except with the prior written approval of the CEO (which the CEO may grant or withhold in the CEO's discretion), Executive shall devote all of Executive's best efforts and full working time, attention, and energies to the business of the Company, except during any paid vacation or other excused absence periods. Notwithstanding the foregoing, Executive may, without violating this Section 1(e), (i) as a passive investment, own publicly traded securities in such form or manner as will not require any services by Executive in the operation of the entities in which such securities are owned; (ii) engage in charitable and civic activities; or (iii) engage in other personal passive investment activities, in each case, so long as such interests or activities do not materially interfere to the extent such activities do not, individually or in the aggregate, interfere with or otherwise prevent the performance of Executive's duties and responsibilities hereunder. Executive may also serve as a member of the board of directors or board of advisors of another organization provided (i) such organization is not a competitor of the Company; (ii) Executive receives prior written approval from the CEO; and (iii) such activities do not individually or in the aggregate interfere with the performance of Executive's duties under this Agreement, violate the Company's standards of conduct then in effect, or raise a conflict under the Company's conflict of interest policies. For the avoidance of doubt, the CEO has approved Executive's continued service with those organizations set forth in Exhibit A, such approval to continue until the earlier to occur of (a) the CEO's revocation of such approval in the CEO's discretion, or (b) such time as such service interferes with the performance of Executive's duties under this Agreement, violates the Company's standards of conflict or raises a conflict under the Company's conflict of interest policies.

2. Term. The period of Executive's employment under this Agreement shall commence on the Commencement Date and shall continue until Executive's employment with the Company is terminated pursuant to Section 5 below. The phrase "Term of Employment" as used in this Agreement shall refer to the entire period of employment of Executive by the Company.

3. Compensation and Related Matters.

(a) Annual Base Salary. During the Term of Employment, Executive shall receive a base salary at the rate of $455,000 per annum (as may be increased from time to time, the "Annual Base Salary"), subject to withholdings and deductions, which shall be paid to Executive in accordance with the customary payroll practices and procedures of the Company. Such Annual Base Salary shall be reviewed by the CEO, and, as applicable, the Board and/or the Compensation Committee of the Board, not less than annually.

(b) Annual Bonus. Executive shall be eligible to receive a discretionary annual bonus based on Executive's achievement of performance objectives established by the Board and its Compensation Committee, such bonus to be targeted at forty percent (40%) of Executive's Annual Base Salary (the "Annual Bonus"). Any Annual Bonus approved by the Board and its Compensation Committee shall be paid at the same time annual bonuses are paid to other executives of the Company generally, subject to Executive's continuous employment through the date of applicable payment. Executive acknowledges and agrees that nothing contained herein confers upon Executive any right to the Annual Bonus in any year, and any Annual Bonus payment including the amount therein will be determined by the Company in its sole discretion.

(c) Benefits. Executive shall be entitled to participate in such employee and executive benefit plans and programs as the Company may from time to time offer to provide to its executives, subject to the terms and conditions of such plans. Notwithstanding the foregoing, nothing herein is intended, or shall be construed, to require the Company to institute or continue any, or any particular, plan or benefit.

(d) Business Expenses. The Company shall reimburse Executive for all reasonable, documented, out-of-pocket travel and other business expenses incurred by Executive in the performance of

Executive's duties to the Company in accordance with the Company's applicable expense reimbursement policies and procedures as are in effect from time to time.

(e) Vacation. Executive will be entitled to paid vacation in accordance with the Company's vacation policy, as in effect from time to time.

4. Equity Awards.

(a) Stock Option. The Company will grant to Executive an option (the "Option") under the Company's 2023 Incentive Award Plan (the "Plan") to purchase 400,000 shares of Company common stock at a price per share equal to the fair market value of a share of Company common stock on the date of grant. The Option will constitute an incentive stock option within the meaning of Section 422 of the Internal Revenue Code of 1986, as amended (the "Code") to the maximum extent permitted by applicable law. Twenty-five percent (25%) of the shares subject to the Option will vest and become exercisable on the first anniversary of the Commencement Date and 1/48th of the shares subject to the Option shall vest and become exercisable on each monthly anniversary of the Commencement Date thereafter such that the Option will be fully vested and exercisable on the fourth anniversary of the Commencement Date, in each case, subject to Executive's continued employment with the Company through the applicable vesting date, except as provided below. The Option will be subject to the terms and conditions of the Plan and a stock option agreement to be entered into between Executive and the Company.

(b) Future Equity Awards. Executive shall be eligible for such additional stock options and equity awards as may be determined by the Board and its Compensation Committee, in its sole discretion.

5. Termination.

(a) At-Will Employment. The Company and Executive acknowledge that Executive's employment is and shall continue to be at-will, as defined under applicable law. This means that it is not for any specified period of time and, subject to any ramifications under Section 6 of this Agreement, can be terminated by Executive or by the Company at any time, with or without advance notice, and for any or no particular reason or cause. It also means that Executive's job duties, title, and responsibility and reporting level, work schedule, compensation and benefits, as well as the Company's personnel policies and procedures, may be changed with prospective effect, with or without notice, at any time in the sole discretion of the Company (subject to any ramification such changes may have under Section 6 of this Agreement). This "at-will" nature of Executive's employment shall remain unchanged during Executive's tenure as an employee and may not be changed, except in an express writing signed by Executive and a duly authorized officer of the Company. If Executive's employment terminates for any lawful reason, Executive shall not be entitled to any payments, benefits, damages, award, or compensation other than as provided in this Agreement.

(b) Notice of Termination. During the Term of Employment, any termination of Executive's employment by the Company or by Executive (other than by reason of death) shall be communicated by written notice (a "Notice of Termination") from one Party hereto to the other Party hereto (i) indicating the specific termination provision in this Agreement relied upon, if any, (ii) setting forth in reasonable detail the facts and circumstances claimed to provide a basis for termination of Executive's employment under the provision so indicated, and (iii) specifying the Date of Termination (as defined below). The failure by the Company to set forth in the Notice of Termination all of the facts and circumstances which contribute to a showing of Cause (as defined below) shall not waive any right of the Company hereunder or preclude the Company from asserting such fact or circumstance in enforcing its rights hereunder.

(c) Termination Date. For purposes of this Agreement, "Date of Termination" shall mean the date of the termination of Executive's employment with the Company specified in a Notice of Termination.

(d) Deemed Resignation. Upon termination of Executive's employment for any reason, Executive shall be deemed to have resigned from all offices and board memberships, if any, then held with the Company or any of its affiliates, and, at the Company's request, Executive shall execute such documents as are necessary or desirable to effectuate such resignations.

6. Consequences of Termination.

(a) Payments of Accrued Obligations upon all Terminations of Employment. Upon a termination of Executive's employment for any reason, Executive (or Executive's estate or legal representative, as applicable) shall be entitled to receive, within thirty (30) days after Executive's Date of Termination (or such earlier date as may be required by applicable law): (i) any portion of Executive's Annual Base Salary earned through Executive's Date of Termination not theretofore paid, (ii) any expenses owed to Executive under Section 3(d) above, (iii) any accrued but unused paid time-off owed to Executive, (iv) any Annual Bonus earned on or prior to the Date of Termination but unpaid as of the Date of Termination, and (v) any amount arising from Executive's participation in, or benefits under, any employee benefit plans, programs, or arrangements under Section 3(c) above, which amounts shall be payable in accordance with the terms and conditions of such employee benefit plans, programs, or arrangements. Except as otherwise set forth in Section 6(b) below, the payments and benefits described in this Section 6(a) shall be the only payments and benefits payable in the event of Executive's termination of employment for any reason.

(b) Severance Payments upon Termination Without Cause or For Good Reason.

(i) Termination Outside a Change in Control Period. If, during the Term of Employment but outside the period beginning three (3) months prior to and ending twelve (12) months following a Change in Control (such period, a "Change in Control Period"), Executive's employment is terminated by the Company without Cause or Executive resigns for Good Reason, then, in addition to the payments and benefits described in Section 6(a) above, subject to Executive's delivery to the Company of a waiver and release of claims agreement in a form approved by the Company that becomes effective and irrevocable in accordance with Section 11(d) hereof (a "Release"):

(A) During the nine-month period commencing on the Date of Termination (the "Severance Period"), the Company shall continue to pay Executive the Executive's Annual Base Salary, such payment to be made in accordance with the Company's regular payroll procedures, with the first such installment to occur on the first payroll date following the date the Release becomes effective and irrevocable or as otherwise provided in Section 11(d) hereof and inclusive of any installments that would have been made had the Release been immediately effective and irrevocable.

(B) During the period commencing on the Date of Termination and ending on the last day of the Severance Period, or if earlier, the date on which Executive becomes eligible for comparable replacement coverage under a subsequent employer's group health plan (in any case, the "Non-CIC COBRA Period"), subject to Executive's valid election to continue healthcare coverage under Section 4980B of the Internal Revenue Code of 1986, as amended (the

"Code") and the regulations thereunder, the Company shall, in its sole discretion, either (x) continue to provide to Executive and Executive's dependents, at the Company's sole expense, or (y) reimburse Executive and Executive's dependents for coverage under its group health plan (if any) at the same levels in effect on the Date of Termination; provided, however, that if (1) any plan pursuant to which such benefits are provided is not, or ceases prior to the expiration of the continuation coverage period to be, exempt from the application of Section 409A under Treasury Regulation Section 1.409A-1(a)(5), (2) the Company is otherwise unable to continue to cover Executive or Executive's dependents under its group health plans, or (3) the Company cannot provide the benefit without violating applicable law (including, without limitation, Section 2716 of the Public Health Service Act), then, in any such case, an amount equal to each remaining Company subsidy shall thereafter be paid to Executive in substantially equal monthly installments over the Non-CIC COBRA Period (or remaining portion thereof).

(ii) Termination During a Change in Control Period. If, during the Term of Employment and during a Change in Control Period, Executive's employment is terminated by the Company without Cause or Executive resigns for Good Reason, then, in addition to the payments and benefits described in Section 6(a) above, subject to Executive's delivery to the Company of a Release that becomes effective and irrevocable in accordance with Section 11(d) hereof:

(A) The Company shall pay to Executive an amount equal to the sum of (i) one time (1x) Executive's Annual Base Salary and (ii) one time (1x) Executive's target Annual Bonus. Such amount will be subject to applicable withholdings and payable in a single lump sum cash payment on the first regular payroll date following the date the Release becomes effective and irrevocable or as otherwise provided in Section 11(d) hereof.

(B) During the period commencing on the Date of Termination and ending on the twelve (12) month anniversary thereof or, if earlier, the date on which Executive becomes eligible for comparable replacement coverage under a subsequent employer's group health plan (in any case, the "CIC COBRA Period"), subject to Executive's valid election to continue healthcare coverage under Section 4980B of the Code and the regulations thereunder, the Company shall, in its sole discretion, either (x) continue to provide to Executive and Executive's dependents, at the Company's sole expense, or (y) reimburse Executive and Executive's dependents for coverage under its group health plan (if any) at the same levels in effect on the Date of Termination; *provided, however*, that if (1) any plan pursuant to which such benefits are provided is not, or ceases prior to the expiration of the continuation coverage period to be, exempt from the application of Section 409A under Treasury Regulation Section 1.409A-1(a)(5), (2) the Company is otherwise unable to continue to cover Executive or Executive's dependents under its group health plans, or (3) the Company cannot provide the benefit without violating applicable law (including, without limitation, Section 2716 of the Public Health Service Act), then, in any such case, an amount equal to each remaining Company subsidy shall thereafter be paid to Executive in substantially equal monthly installments over the CIC COBRA Period (or remaining portion thereof).

(C) The Company shall cause any unvested equity awards, including any stock options, restricted stock units and restricted stock awards, including any

such awards subject to performance-based vesting, held by Executive as of the Date of Termination, to become fully vested and, if applicable, exercisable, and cause all restrictions and rights of repurchase on such awards to lapse with respect to all of the shares of the Company's Common Stock subject thereto.

(c) No Other Severance. The provisions of this Section 6 shall supersede in their entirety any severance payment provisions in any severance plan, policy, program, or other arrangement maintained by the Company except as otherwise approved by the Board.

(d) No Requirement to Mitigate; Survival. Executive shall not be required to mitigate the amount of any payment provided for under this Agreement by seeking other employment or in any other manner. Notwithstanding anything to the contrary in this Agreement, the termination of Executive's employment shall not impair the rights or obligations of any Party.

(e) Definition of Cause. For purposes hereof, "Cause" shall mean any one of the following: (i) Executive's violation of any applicable material law or regulation respecting the business of the Company; (ii) Executive's conviction of, or plea of *nolo contendere* to, a felony or other crime involving moral turpitude; (iii) any act of dishonesty, fraud, or misrepresentation in relation to Executive's duties to the Company which act is materially and demonstrably injurious to the Company; (iv) Executive's willful failure to perform in any material respect Executive's duties hereunder after fifteen (15) days' notice (other than on account of disability); (v) Executive's failure to attempt in good faith to implement a clear and reasonable directive from the CEO or to comply with any of the Company's policies and procedures which failure is either material or occurs after written notice from the CEO; (vi) any act of gross misconduct which is injurious to the Company; or (vii) Executive's breach of fiduciary duty owed to the Company.

(f) Definition of Change in Control. For purposes of this Agreement, "Change in Control" shall mean (i) the acquisition by any person or group of affiliated or associated persons of more than fifty percent (50%) of the outstanding capital stock of the Company or voting securities representing more than fifty percent (50%) of the total voting power of outstanding securities of the Company; (ii) the consummation of a sale of all or substantially all of the assets of the Company to a third party; (iii) the consummation of any merger involving the Company in which, immediately after giving effect to such merger, less than a majority of the total voting power of outstanding stock of the surviving or resulting entity is then "beneficially owned" (within the meaning of Rule 13d-3 under the Securities Exchange Act of 1934, as amended) in the aggregate by the stockholders of the Company, as applicable, immediately prior to such merger. For the avoidance of doubt and notwithstanding anything herein to the contrary, in no event shall a transaction constitute a "Change in Control" if: (w) its sole purpose is to change the state of the Company's incorporation; (x) its sole purpose is to create a holding company that will be owned in substantially the same proportions by the persons who held the Company's securities immediately before such transaction; (y) it is effected primarily for the purpose of financing the Company with cash (as determined by the Board without regard to whether such transaction is effectuated by a merger, equity financing, or otherwise); or (z) it constitutes, or includes sales of shares in connection with, the initial public offering of the Company's capital stock. Notwithstanding the foregoing, a "Change in Control" must also constitute a "change in control event," as defined in Treasury Regulation §1.409A-3(i)(5).

(g) Definition of Good Reason. For purposes hereof, "Good Reason" shall mean any one of the following: (i) the material reduction of Executive's base salary (other than a reduction that is applied substantially across executives), (ii) the assignment to Executive of any duties materially and negatively inconsistent in respect of Executive's position (including status, offices, titles and reporting requirements), authority, duties or responsibilities, or any other action by the Company which results in a material diminution in such position, authority, duties or responsibilities; or (iii) the Company's material breach of this Agreement, *provided*, that, in each case, Executive will not be deemed to have Good Reason

unless (1) Executive first provides the Company with written notice of the condition giving rise to Good Reason within thirty (30) days of its initial occurrence, (2) the Company or the successor company fails to cure such condition within thirty (30) days after receiving such written notice (the "Cure Period"), and (3) Executive's resignation based on such Good Reason is effective within thirty (30) days after the expiration of the Cure Period.

7. Assignment and Successors. The Company shall assign its rights and obligations under this Agreement to any successor to all or substantially all of the business or the assets of the Company (by merger or otherwise). This Agreement shall be binding upon and inure to the benefit of the Company, Executive, and their respective successors, assigns, personnel, and legal representatives, executors, administrators, heirs, distributees, devisees, and legatees, as applicable. None of Executive's rights or obligations may be assigned or transferred by Executive, other than Executive's rights to payments hereunder, which may be transferred only by will, operation of law, or as otherwise provided herein.

8. Miscellaneous Provisions.

(a) Confidentiality Agreement. As a condition to Executive's employment hereunder, no later than the Commencement Date, Executive shall enter into the Company's standard Confidential Information and Invention Assignment Agreement (the "Confidentiality Agreement"). The Confidentiality Agreement shall survive the termination of this Agreement and Executive's employment with the Company for the applicable period(s) set forth therein.

(b) Non-Solicitation of Employees. For a period of one (1) year following Executive's Date of Termination, Executive shall not, either directly or indirectly (i) solicit for employment by any individual, corporation, firm, or other business, any employees, consultants, independent contractors, or other service providers of the Company or any of its affiliates, or (ii) solicit any employee or consultant of the Company or any of its affiliates to leave the employment or consulting of or cease providing services to the Company or any of its affiliates; *provided*, *however*, that the foregoing clauses (i) and (ii) shall not apply to a general advertisement or solicitation (or any hiring pursuant to such advertisement or solicitation) that is not specifically targeted to such employees or consultants.

(c) Governing Law. This Agreement shall be governed, construed, interpreted, and enforced in accordance with its express terms, and otherwise in accordance with the substantive laws of the state in which Executive works (which, if Executive works remotely, is the state in which Executive resides), without giving effect to any principles of conflicts of law.

(d) Validity. The invalidity or unenforceability of any provision or provisions of this Agreement shall not affect the validity or enforceability of any other provision of this Agreement, which shall remain in full force and effect.

(e) Counterparts. This Agreement may be executed in several counterparts, each of which shall be deemed to be an original, but all of which together will constitute one and the same Agreement. Signatures delivered by facsimile shall be deemed effective for all purposes.

(f) Entire Agreement. The terms of this Agreement, together with the Confidentiality Agreement, are intended by the Parties to be the final expression of their agreement with respect to the employment of Executive by the Company and supersede all prior understandings and agreements, whether written or oral, regarding Executive's service to the Company, including without limitation, the Prior Agreement. The Parties further intend that this Agreement, together with the Confidentiality Agreement, shall constitute the complete and exclusive statement of their terms and that no extrinsic evidence whatsoever may be introduced in any judicial, administrative, or other legal proceeding to vary the terms

of this Agreement or the Confidentiality Agreement. Notwithstanding the foregoing, in the event of any conflict between the terms of the Confidentiality Agreement and the terms of this Agreement, the terms of this Agreement shall prevail.

(g) Amendments; Waivers. This Agreement may not be modified, amended, or terminated except by an instrument in writing signed by Executive and a duly authorized representative of the Company. By an instrument in writing similarly executed, Executive or a duly authorized officer of the Company, as applicable, may waive compliance by the other Party with any specifically identified provision of this Agreement that such other Party was or is obligated to comply with or perform; *provided*, *however*, that such waiver shall not operate as a waiver of, or estoppel with respect to, any other or subsequent failure. No failure to exercise and no delay in exercising any right, remedy, or power hereunder shall preclude any other or further exercise of any other right, remedy, or power provided herein or by law or in equity.

(h) Dispute Resolution. To ensure the timely and economical resolution of disputes that arise in connection with this Agreement, Executive and the Company agree that, except as excluded herein, any and all controversies, claims and disputes arising out of or relating to this Agreement, including without limitation any alleged violation of its terms or otherwise arising out of the Parties' relationship, shall be resolved solely and exclusively by final and binding arbitration held in the county and state in which Executive works (which, if Executive works remotely, is the state in which Executive resides) through JAMS in conformity with law of the state in which arbitration is held and the then-existing JAMS employment arbitration rules, which can be found at https://www.jamsadr.com/rules-employment-arbitration/. The Federal Arbitration Act, 9 U.S.C. §§ 1 et seq. shall govern the interpretation and enforcement of this arbitration clause. All remedies available from a court of competent jurisdiction shall be available in the arbitration; provided, however, in the event of a breach of Sections 8(a) or 8(b), the Company may request relief from a court of competent jurisdiction if such relief is not available or not available in a timely fashion through arbitration as determined by the Company. The arbitrator shall: (a) provide adequate discovery for the resolution of the dispute; and (b) issue a written arbitration decision, to include the arbitrator's essential findings and conclusions and a statement of the award. The arbitrator shall award the prevailing Party attorneys' fees and expert fees, if any. Notwithstanding the foregoing, it is acknowledged that it will be impossible to measure in money the damages that would be suffered if the Parties fail to comply with any of the obligations imposed on them under Sections 8(a) and 8(b), and that in the event of any such failure, an aggrieved person will be irreparably damaged and will not have an adequate remedy at law. Any such person shall, therefore, be entitled to seek injunctive relief, including specific performance, to enforce such obligations, and if any action shall be brought in equity to enforce any of the provisions of Sections 8(a) and 8(b), none of the Parties shall raise the defense, without a good faith basis for raising such defense, that there is an adequate remedy at law. Executive and the Company understand that by agreement to arbitrate any claim pursuant to this Section 8(h), they will not have the right to have any claim decided by a jury or a court, but shall instead have any claim decided through arbitration. Executive and the Company waive any constitutional or other right to bring claims covered by this Agreement other than in their individual capacities. Except as may be prohibited by applicable law, the foregoing waiver includes the ability to assert claims as a plaintiff or class member in any purported class or collective action or representative proceeding. Nothing herein shall limit Executive's ability to pursue claims for workers compensation or unemployment benefits or pursue other claims which by law cannot be subject to mandatory arbitration.

(i) Enforcement. If any provision of this Agreement is held to be illegal, invalid, or unenforceable under present or future laws, such provision shall be fully severable; this Agreement shall be construed and enforced as if such illegal, invalid, or unenforceable provision had never comprised a portion of this Agreement; and the remaining provisions of this Agreement shall remain in full force and effect and shall not be affected by the illegal, invalid, or unenforceable provision or by its severance from this Agreement. Furthermore, in lieu of such illegal, invalid, or unenforceable provision there shall be

added automatically as part of this Agreement a provision as similar in terms to such illegal, invalid, or unenforceable provision as may be possible and be legal, valid, and enforceable.

(j) Withholding. The Company shall be entitled to withhold from any amounts payable under this Agreement any federal, state, local, or foreign withholding or other taxes or charges which the Company is required to withhold. The Company shall be entitled to rely on an opinion of counsel if any questions as to the amount or requirement of withholding shall arise.

(k) Whistleblower Protections and Trade Secrets. Notwithstanding anything to the contrary contained herein, nothing in this Agreement prohibits Executive from reporting possible violations of federal law or regulation to any United States governmental agency or entity in accordance with the provisions of and rules promulgated under Section 21F of the Securities Exchange Act of 1934 or Section 806 of the Sarbanes-Oxley Act of 2002, or any other whistleblower protection provisions of state or federal law or regulation (including the right to receive an award for information provided to any such government agencies). Furthermore, in accordance with 18 U.S.C. § 1833, notwithstanding anything to the contrary in this Agreement: (i) Executive shall not be in breach of this Agreement, and shall not be held criminally or civilly liable under any federal or state trade secret law (x) for the disclosure of a trade secret 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, or (y) for the disclosure of a trade secret that is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal; and (ii) if Executive files a lawsuit for retaliation by the Company for reporting a suspected violation of law, Executive may disclose the trade secret to Executive's attorney, and may use the trade secret information in the court proceeding, if Executive files any document containing the trade secret under seal, and does not disclose the trade secret, except pursuant to court order.

9. Prior Employment. Executive represents and warrants that Executive's acceptance of employment with the Company has not breached, and the performance of Executive's duties hereunder will not breach, any duty owed by Executive to any prior employer or other person. Executive further represents and warrants to the Company that (a) the performance of Executive's obligations hereunder will not violate any agreement between Executive and any other person, firm, organization, or other entity; (b) Executive is not bound by the terms of any agreement with any previous employer or other party to refrain from competing, directly or indirectly, with the business of such previous employer or other party that would be violated by Executive entering into this Agreement and/or providing services to the Company pursuant to the terms of this Agreement; and (c) Executive's performance of Executive's duties under this Agreement will not require Executive to, and Executive shall not, rely on in the performance of Executive's duties or disclose to the Company or any other person or entity or induce the Company in any way to use or rely on any trade secret or other confidential or proprietary information or material belonging to any previous employer of Executive.

10.Golden Parachute Excise Tax.

(a) Best Pay. Any provision of this Agreement to the contrary notwithstanding, if any payment or benefit Executive would receive from the Company pursuant to this Agreement or otherwise ("Payment") would (i) constitute a "parachute payment" within the meaning of Section 280G of the Code and (ii) but for this sentence, be subject to the excise tax imposed by Section 4999 of the Code (the "Excise Tax"), then such Payment will be equal to the Reduced Amount (as defined below). The "Reduced Amount" will be either (A) the largest portion of the Payment that would result in no portion of the Payment (after reduction) being subject to the Excise Tax or (B) the entire Payment, whichever amount after taking into account all applicable federal, state, and local employment taxes, income taxes, and the Excise Tax (all computed at the highest applicable marginal rate, net of the maximum reduction in federal income taxes which could be obtained from a deduction of such state and local taxes), results in Executive' s receipt, on

an after-tax basis, of the greater economic benefit notwithstanding that all or some portion of the Payment may be subject to the Excise Tax. If a reduction in a Payment is required pursuant to the preceding sentence and the Reduced Amount is determined pursuant to clause (A) of the preceding sentence, the reduction shall occur in the manner (the "Reduction Method") that results in the greatest economic benefit for Executive. If more than one method of reduction will result in the same economic benefit, the items so reduced will be reduced pro rata (the "Pro Rata Reduction Method"). Notwithstanding the foregoing, if the Reduction Method or the Pro Rata Reduction Method would result in any portion of the Payment being subject to taxes pursuant to Section 409A (as defined below) that would not otherwise be subject to taxes pursuant to Section 409A, then the Reduction Method and/or the Pro Rata Reduction Method, as the case may be, shall be modified so as to avoid the imposition of taxes pursuant to Section 409A as follows: (1) as a first priority, the modification shall preserve to the greatest extent possible, the greatest economic benefit for Executive as determined on an after-tax basis; (2) as a second priority, Payments that are contingent on future events (*e.g.*, being terminated without cause), shall be reduced (or eliminated) before Payments that are not contingent on future events; and (3) as a third priority, Payments that are "deferred compensation" within the meaning of Section 409A shall be reduced (or eliminated) before Payments that are not deferred compensation within the meaning of Section 409A.

(b) Accounting Firm. The accounting firm engaged by the Company for general tax purposes as of the day prior to the Change in Control will perform the calculations set forth in Section 10(a) above. If the firm so engaged by the Company is serving as the accountant or auditor for the acquiring company, the Company will appoint a nationally recognized accounting firm to make the determinations required hereunder. The Company will bear all expenses with respect to the determinations by such firm required to be made hereunder. The accounting firm engaged to make the determinations hereunder will provide its calculations, together with detailed supporting documentation, to the Company within thirty (30) days before the consummation of a Change in Control (if requested at that time by the Company) or such other time as requested by the Company. If the accounting firm determines that no Excise Tax is payable with respect to a Payment, either before or after the application of the Reduced Amount, it will furnish the Company with documentation reasonably acceptable to the Company that no Excise Tax will be imposed with respect to such Payment. Any good faith determinations of the accounting firm made hereunder will be final, binding and conclusive upon the Company and Executive.

11. Section 409A.

(a) General. The intent of the Parties is that the payments and benefits under this Agreement comply with or be exempt from Section 409A of the Code and the Department of Treasury regulations and other interpretive guidance issued thereunder, including without limitation any such regulations or other guidance that may be issued after the Effective Date, ("Section 409A") and, accordingly, to the maximum extent permitted, this Agreement shall be interpreted to be in compliance therewith. If Executive notifies the Company that Executive has received advice of tax counsel of a national reputation with expertise in Section 409A that any provision of this Agreement would cause Executive to incur any additional tax or interest under Section 409A (with specificity as to the reason therefor) or the Company independently makes such determination, the Company and Executive shall take commercially reasonable efforts to reform such provision to try to comply with or be exempt from Section 409A through good faith modifications to the minimum extent reasonably appropriate to conform with Section 409A, *provided* that any such modifications shall not increase the cost or liability to the Company. To the extent that any provision hereof is modified in order to comply with or be exempt from Section 409A, such modification shall be made in good faith and shall, to the maximum extent reasonably possible, maintain the original intent and economic benefit to Executive and the Company of the applicable provision without violating the provisions of Section 409A.

(b) Separation from Service. Notwithstanding any provision to the contrary in this Agreement: (i) no amount that constitutes "deferred compensation" under Section 409A shall be payable pursuant to Section 6(b) above unless the termination of Executive's employment constitutes a "separation from service" within the meaning of Section 1.409A-1(h) of the Department of Treasury Regulations ("Separation from Service"); (ii) for purposes of Section 409A, Executive's right to receive installment payments shall be treated as a right to receive a series of separate and distinct payments; and (iii) to the extent that any reimbursement of expenses or in-kind benefits constitutes "deferred compensation" under Section 409A, such reimbursement or benefit shall be provided no later than December 31st of the year following the year in which the expense was incurred. The amount of expenses reimbursed in one year shall not affect the amount eligible for reimbursement in any subsequent year. The amount of any in-kind benefits provided in one year shall not affect the amount of in-kind benefits provided in any other year.

(c) Specified Employee. Notwithstanding anything in this Agreement to the contrary, if Executive is deemed by the Company at the time of Executive's Separation from Service to be a "specified employee" for purposes of Section 409A, to the extent delayed commencement of any portion of the benefits to which Executive is entitled under this Agreement is required in order to avoid a prohibited distribution under Section 409A, such portion of Executive's benefits shall not be provided to Executive prior to the earlier of (i) the expiration of the six (6)-month period measured from the date of Executive's Separation from Service with the Company or (ii) the date of Executive's death. Upon the first business day following the expiration of the applicable Section 409A period, all payments deferred pursuant to the preceding sentence shall be paid in a lump sum to Executive (or Executive's estate or beneficiaries), and any remaining payments due to Executive under this Agreement shall be paid as otherwise provided herein.

(d) Release. Notwithstanding anything to the contrary in this Agreement, to the extent that any payments due under this Agreement as a result of Executive's termination of employment are subject to Executive's execution and delivery of a Release, (i) the Company shall deliver the Release to Executive within ten (10) business days following Executive's Date of Termination, and the Company's failure to deliver a Release prior to the expiration of such ten (10) business day period shall constitute a waiver of any requirement to execute a Release, (ii) if Executive fails to execute the Release on or prior to the Release Expiration Date (as defined below) or timely revokes Executive's acceptance of the Release thereafter, Executive shall not be entitled to any payments or benefits otherwise conditioned on the Release, and (iii) in any case where Executive's Date of Termination and the Release Expiration Date fall in two separate taxable years, any payments required to be made to Executive that are conditioned on the Release and are treated as nonqualified deferred compensation for purposes of Section 409A shall be made in the later taxable year. For purposes of this Section 11(d), "Release Expiration Date" shall mean the date that is twenty-one (21) days following the date upon which the Company timely delivers the Release to Executive, or, in the event that Executive's termination of employment is "in connection with an exit incentive or other employment termination program" (as such phrase is defined in the Age Discrimination in Employment Act of 1967), the date that is forty-five (45) days following such delivery date. To the extent that any payments of nonqualified deferred compensation (within the meaning of Section 409A) due under this Agreement as a result of Executive's termination of employment are delayed pursuant to this Section 11(d), such amounts shall be paid in a lump sum on the first payroll date following the date that Executive executes and does not revoke the Release (and the applicable revocation period has expired) or, in the case of any payments subject to Section 11(d)(iii), on the first payroll period to occur in the subsequent taxable year, if later.

12. Employee Acknowledgement. Executive acknowledges that Executive has read and understands this Agreement, is fully aware of its legal effect, has not acted in reliance upon any representations or promises made by the Company other than those contained in writing herein, and has entered into this Agreement freely based on Executive's own judgment.

[*Signature Page Follows*]

IN WITNESS WHEREOF, the Parties have duly executed this Agreement as of the date and year first above written.

NEUMORA THERAPEUTICS, INC.

By: /s/ Henry Gosebruch

Name: Henry Gosebruch

Title: Chief Executive Officer

EXECUTIVE

By: /s/ Jason Duncan

Name: Jason Duncan

Address: [****]

EXHIBIT A

PERMITTED OUTSIDE ACTIVITIES

Exhibit 10.23

NEUMORA THERAPEUTICS, INC.

AMENDED AND RESTATED EXECUTIVE EMPLOYMENT AGREEMENT

This Amended and Restated Executive Employment Agreement (the "Agreement) is entered into between Neumora Therapeutics, Inc., a Delaware corporation f/k/a RBNC Therapeutics, Inc. (the "Company"), and Carol Y. Suh ("Executive" and, together with the Company, the "Parties") effective as of January 1, 2023 (the "Effective Date"). This Agreement supersedes in its entirety that certain Executive Employment Agreement between Executive and the Company dated as of April 11, 2022 (the "Prior Agreement").

WHEREAS, the Company desires to assure itself of the continued services of Executive by engaging Executive to perform services as an employee of the Company under the terms hereof;

WHEREAS, Executive desires to provide continued services to the Company on the terms herein provided; and

WHEREAS, the Parties desire to execute this Agreement to supersede the Prior Agreement in its entirety effective as of the Effective Date.

NOW, THEREFORE, in consideration of the foregoing, and for other good and valuable consideration, including the respective covenants and agreements set forth below, the receipt and sufficiency of which are hereby acknowledged, the Parties hereto agree as follows:

1. Employment.

(a) General. The Company shall continue to employ Executive upon the terms and conditions provided herein effective as of the Effective Date.

(b) Position and Duties. As of the Effective Date, Executive: (i) shall serve as the Company's Chief Operating Officer, with responsibilities, duties, and authority usual and customary for such position, subject to direction by the Chief Executive Officer of the Company (the "CEO"); (ii) shall continue to report directly to the CEO; and (iii) agrees promptly and faithfully to comply in all material respects with all present and future policies, requirements, rules and regulations generally applicable to the Company's senior executives, and reasonable directions and requests, of the CEO in connection with the Company's business. At the Company's request, Executive shall serve the as a director or officer of any of the Company's subsidiaries in such other capacities in addition to the foregoing as the Company shall designate, provided that such additional capacities are consistent with Executive's position as the Company's Chief Operating Officer. In the event that Executive serves in any one or more of such additional capacities, Executive's compensation shall not automatically be increased on account of such additional service.

(c) Performance of Executive's Duties. During Executive's employment with the Company, and except for periods of illness, vacation, disability, or reasonable leaves of absence or as discussed in Section 1(e) below, Executive shall devote Executive's reasonable business time and attention to the business and affairs of the Company. The rights of Executive under this Agreement shall not be affected by any change in the title, duties, or capacity of Executive during Executive's employment with the Company.

(d) Principal Office. Executive shall continue to perform services for the Company partially from the Company's offices in the San Francisco, California area and partially from Executive's home office, or, with the Company's consent, at any other place in connection with the fulfillment of Executive's role with the Company; provided, however, that the Company may from time to time require Executive to travel temporarily to other locations in connection with the Company's business.

(e) Exclusivity. Except with the prior written approval of the CEO (which the CEO may grant or withhold in the CEO's reasonable discretion,) or as otherwise set forth in this Agreement, Executive shall devote reasonable efforts and reasonable business time and attention to the business of the Company, except for periods of illness, vacation , disability, or reasonable leaves ofabsence. Notwithstanding the foregoing, Executive may, without violating this Section 1(e),) or Section 1(c) above, (i) as a passive investment, own securities in such form or manner as will not require any services by Executive in the operation of the entities in which such securities are owned; (ii) engage in charitable and civic activities; or (iii) engage in other personal investment activities, including, but not limited to, angel investments or investments in any private equity, venture, mutual or hedge fund, in each case, so long as such interests or activities do not materially interfere, individually or in the aggregate, with or otherwise prevent the performance of Executive's duties and responsibilities hereunder. Executive may also serve as a member of the board of directors or board of advisors of another organization provided (i) such organization is not a competitor of the Company; (ii) Executive receives prior written approval from the CEO; and (iii) such activities do not materially interfere, individually or in the aggregate, with the performance of Executive's duties under this Agreement, violate the Company's written standards of conduct then in effect as applicable to senior executive officers generally, or raise a conflict under the Company's conflict of interest policies. For the avoidance of doubt, the CEO has approved Executive's continued employment or service with those organizations set forth in Exhibit A. Notwithstanding anything to the contrary in this Agreement, the Company acknowledges and agrees that in no event shall Executive be prohibited from continuing to serve as a Partner of ARCH Venture Partners ("ARCH") and devoting reasonable business time and attention to the duties and responsibilities of such position or providing reasonable services to ARCH and its affiliated entities.

2. Term. The period of Executive's employment under this Agreement shall commence on the Effective Date and shall continue until Executive's employment with the Company is terminated pursuant to Section 5 below. The phrase "Term of Employment" as used in this Agreement shall refer to the entire period of employment of Executive by the Company.

3. Compensation and Related Matters.

(a) Annual Base Salary. During the Term of Employment, Executive shall receive a base salary at the rate of $415,000 per annum (as may be increased from time to time, the "Annual Base Salary"), subject to withholdings and deductions, which shall be paid to Executive in accordance with the customary payroll practices and procedures of the Company. Such Annual Base Salary shall be reviewed by the CEO, and, as applicable, the Board and/or the Compensation Committee of the Board, not less than annually for increase (but not decrease).

(b) Annual Bonus. Executive shall be eligible to receive a discretionary annual bonus based on Executive's achievement of performance objectives established by the Board and its Compensation Committee, such bonus to be targeted at forty percent (40%) of Executive's Annual Base Salary (the "Annual Bonus"). Such target Annual Bonus shall be reviewed by the CEO, and as applicable, the Board and/or the Compensation Committee of the Board, not less than annually for increase (but not decrease). Any Annual Bonus approved by the Board and its Compensation Committee shall be paid at the same time annual bonuses are paid to other executives of the Company generally, subject to Executive's continuous employment through the date of applicable payment except as otherwise set forth in Section 6

hereof. Executive acknowledges and agrees that nothing contained herein confers upon Executive any right to the Annual Bonus in any year, and any Annual Bonus payment including the amount therein will be determined by the Company in its sole discretion.

(c) Benefits. Executive shall be entitled to participate in such employee and executive benefit plans and programs as the Company may from time to time offer to provide to its senior executive officers generally, subject to the terms and conditions of such plans. Notwithstanding the foregoing, nothing herein is intended, or shall be construed, to require the Company to institute or continue any, or any particular, plan or benefit.

(d) Business Expenses. The Company shall reimburse Executive for all reasonable, documented, out-of-pocket travel and other business expenses incurred by Executive in the performance of Executive's duties to the Company in accordance with the Company's applicable expense reimbursement policies and procedures as are in effect from time to time.

(e) Vacation. Executive will be entitled to paid vacation in accordance with the Company's vacation policy, as in effect from time to time.

4. Equity Awards.

(a) Outstanding Equity Awards. Executive's outstanding equity awards shall remain outstanding following the Effective Date in accordance with their terms, *provided*, that to the extent any term of this Agreement is more favorable to Executive, including in respect to accelerated vesting, the more favorable terms of this Agreement shall control.

(b) Future Equity Awards. Executive shall be eligible for such additional stock options and equity awards as may be determined by the Board and its Compensation Committee, in its sole discretion.

5. Termination.

(a) At-Will Employment. The Company and Executive acknowledge that Executive's employment is and shall continue to be at-will, as defined under applicable law. This means that it is not for any specified period of time and, subject to any ramifications under Section 6 of this Agreement, can be terminated by Executive or by the Company at any time, with or without advance notice, and for any or no particular reason or cause. It also means that Executive's job duties, title, and responsibility and reporting level, work schedule, compensation and benefits, as well as the Company's personnel policies and procedures, may be changed with prospective effect, with or without notice, at any time in the sole discretion of the Company (subject to any ramification such changes may have under Section 6 of this Agreement). This "at-will" nature of Executive's employment shall remain unchanged during Executive's tenure as an employee and may not be changed, except in an express writing signed by Executive and a duly authorized officer of the Company. If Executive's employment terminates for any lawful reason, Executive shall not be entitled to any payments, benefits, damages, award, or compensation other than as provided in this Agreement.

(b) Notice of Termination. During the Term of Employment, any termination of Executive's employment by the Company or by Executive (other than by reason of death) shall be communicated by written notice (a "Notice of Termination") from one Party hereto to the other Party hereto (i) indicating the specific termination provision in this Agreement relied upon, if any, (ii) setting forth in reasonable detail the facts and circumstances claimed to provide a basis for termination of Executive's employment under the provision so indicated, and (iii) specifying the Date of Termination (as defined

below). The failure by the Company to set forth in the Notice of Termination all of the facts and circumstances which contribute to a showing of Cause (as defined below) shall not waive any right of the Company hereunder or preclude the Company from asserting such fact or circumstance in enforcing its rights hereunder.

(c) Termination Date. For purposes of this Agreement, "Date of Termination" shall mean the date of the termination of Executive's employment with the Company specified in a Notice of Termination.

(d) Deemed Resignation. Upon termination of Executive's employment for any reason, Executive shall be deemed to have resigned from all offices and board memberships, if any, then held with the Company or any of its affiliates, and, at the Company's request, Executive shall execute such documents as are necessary or desirable to effectuate such resignations.

6. Consequences of Termination.

(a) Payments of Accrued Obligations upon all Terminations of Employment. Upon a termination of Executive's employment for any reason, Executive (or Executive's estate or legal representative, as applicable) shall be entitled to receive, within thirty (30) days after Executive's Date of Termination (or such earlier date as may be required by applicable law): (i) any portion of Executive's Annual Base Salary earned through Executive's Date of Termination not theretofore paid, (ii) any expenses owed to Executive under Section 3(d) above, (iii) any accrued but unused paid time-off owed to Executive, (iv) any Annual Bonus earned on or prior to the Date of Termination but unpaid as of the Date of Termination, and (v) any amount arising from Executive's participation in, or benefits under, any employee benefit plans, programs, or arrangements under Section 3(c) above, which amounts shall be payable in accordance with the terms and conditions of such employee benefit plans, programs, or arrangements. Except as otherwise set forth in Section 6(b) below, the payments and benefits described in this Section 6(a) shall be the only payments and benefits payable in the event of Executive's termination of employment for any reason.

(b) Severance Payments upon Termination Without Cause or For Good Reason.

(i) Termination Outside a Change in Control Period. If, during the Term of Employment but outside the period beginning three months prior to and ending 12 months following a Change in Control (such period, a "Change in Control Period"), Executive's employment is terminated by the Company without Cause or Executive resigns for Good Reason, then, in addition to the payments and benefits described in Section 6(a) above, subject to Executive's delivery to the Company of a waiver and release of claims agreement in a form approved by the Company that becomes effective and irrevocable in accordance with Section 11(d) hereof (a "Release"):

(A) During the nine-month period commencing on the Date of Termination (the "Severance Period"), the Company shall continue to pay Executive the sum of the Executive's Annual Base Salary as in effect immediately prior to such termination of employment (but disregarding any reduction thereof during the prior 12-month period or that constituted Good Reason hereunder), such payment to be made in accordance with the Company's regular payroll procedures, with the first such installment to occur on the first payroll date following the date the Release becomes effective and irrevocable or as otherwise provided in Section 11(d) hereof and inclusive of any installments that would have been made had the Release been immediately effective and irrevocable.

(B) During the period commencing on the Date of Termination and ending on the last day of the Severance Period, or if earlier, the date on which Executive becomes eligible for comparable replacement coverage under a subsequent employer's group health plan (in any case, the "Non-CIC COBRA Period"), subject to Executive's valid election to continue healthcare coverage under Section 4980B of the Internal Revenue Code of 1986, as amended (the "Code") and the regulations thereunder, the Company shall, in its sole discretion, either (x) continue to provide to Executive and Executive's dependents, at the Company's sole expense, or (y) reimburse Executive and Executive's dependents for coverage under its group health plan (if any) at the same levels in effect on the Date of Termination; provided, however, that if (1) any plan pursuant to which such benefits are provided is not, or ceases prior to the expiration of the continuation coverage period to be, exempt from the application of Section 409A under Treasury Regulation Section 1.409A-1(a)(5), (2) the Company is otherwise unable to continue to cover Executive or Executive's dependents under its group health plans, or (3) the Company cannot provide the benefit without violating applicable law (including, without limitation, Section 2716 of the Public Health Service Act), then, in any such case, an amount equal to each remaining Company subsidy shall thereafter be paid to Executive in substantially equal monthly installments over the Non-CIC COBRA Period (or remaining portion thereof).

(ii) Termination During a Change in Control Period. If, during the Term of Employment and during a Change in Control Period, Executive's employment is terminated by the Company without Cause or Executive resigns for Good Reason, then, in addition to the payments and benefits described in Section 6(a) above, subject to Executive's delivery to the Company of a Release that becomes effective and irrevocable in accordance with Section 11(d) hereof:

(A) The Company shall pay to Executive an amount equal to the sum of (i) one time (1x) Executive's Annual Base Salary and (ii) one time (1x) Executive's target Annual Bonus. Such amount will be subject to applicable withholdings and payable in a single lump sum cash payment on the first regular payroll date following the date the Release becomes effective and irrevocable or as otherwise provided in Section 11(d) hereof.

(B) During the period commencing on the Date of Termination and ending on the twelve month anniversary thereof or, if earlier, the date on which Executive becomes eligible for comparable replacement coverage under a subsequent employer's group health plan (in any case, the "CIC COBRA Period"), subject to Executive's valid election to continue healthcare coverage under Section 4980B of the Code and the regulations thereunder, the Company shall, in its sole discretion, either (x) continue to provide to Executive and Executive's dependents, at the Company's sole expense, or (y) reimburse Executive and Executive's dependents for coverage under its group health plan (if any) at the same levels in effect on the Date of Termination; *provided, however*, that if (1) any plan pursuant to which such benefits are provided is not, or ceases prior to the expiration of the continuation coverage period to be, exempt from the application of Section 409A under Treasury Regulation Section 1.409A-1(a)(5), (2) the Company is otherwise unable to continue to cover Executive or Executive's dependents under its group health plans, or (3) the Company cannot provide the benefit without violating applicable law (including, without limitation, Section 2716 of the Public Health

Service Act), then, in any such case, an amount equal to each remaining Company subsidy shall thereafter be paid to Executive in substantially equal monthly installments over the CIC COBRA Period (or remaining portion thereof).

(C) The Company shall cause any unvested equity awards, including any stock options, restricted stock units and restricted stock awards, including any such awards subject to performance-based vesting, held by Executive as of the Date of Termination, to become fully vested and, if applicable, exercisable, and cause all restrictions and rights of repurchase on such awards to lapse with respect to all of the shares of the Company's Common Stock subject thereto.

(c) No Other Severance. The provisions of this Section 6 shall supersede in their entirety any severance payment provisions in any severance plan, policy, program, or other arrangement maintained by the Company except as otherwise approved by the Board.

(d) No Requirement to Mitigate; Survival. Executive shall not be required to mitigate the amount of any payment provided for under this Agreement by seeking other employment or in any other manner and amounts payable under this Section 6 will not be reduced on account of compensation from future employment or other service. Notwithstanding anything to the contrary in this Agreement, the termination of Executive's employment shall not impair the rights or obligations of any Party.

(e) Definition of Cause. For purposes hereof, "Cause" shall mean any one of the following: (i) Executive's conviction of, or plea of *nolo contendere* to, a felony or other crime involving moral turpitudeor any material law or regulation respecting the business of the Company; (ii) any act of dishonesty, fraud, or misrepresentation in relation to Executive's duties to the Company which act is materially and demonstrably injurious to the Company; (iii) Executive's willful and continued refusal to perform in any material respect Executive's duties hereunder (other than on account of total or partial incapacity due to injury or illness); (iv) Executive's failure to attempt in good faith to implement a clear and reasonable directive from the CEO or to comply with any of the Company's policies and procedures which failure is either material or occurs after written notice from the CEO; (v) any act of gross misconduct which is injurious to the Company; or (vi) Executive's willful and material breach of fiduciary duty owed to the Company. Any act or failure to act based upon advice of counsel for the Company, shall be conclusively presumed to be done or omitted to be done by Executive in good faith and in the best interests of the Company and shall not constitute a Cause event. The definition of "Cause" set forth herein shall apply to any equity awards, including any stock options, restricted stock units and restricted stock awards, granted to Executive by the Company in lieu of any definition of such term set forth in any equity incentive plan or program or any award agreement issued thereunder. For avoidance of doubt, poor performance shall not be the sole basis for a Cause event.

(f) Definition of Change in Control. For purposes of this Agreement, "Change in Control" shall mean (i) the acquisition by any person or group of affiliated or associated persons of more than fifty percent (50%) of the outstanding capital stock of the Company or voting securities representing more than fifty percent (50%) of the total voting power of outstanding securities of the Company; (ii) the consummation of a sale of all or substantially all of the assets of the Company to a third party; (iii) the consummation of any merger involving the Company in which, immediately after giving effect to such merger, less than a majority of the total voting power of outstanding stock of the surviving or resulting entity is then "beneficially owned" (within the meaning of Rule 13d-3 under the Securities Exchange Act of 1934, as amended) in the aggregate by the stockholders of the Company, as applicable, immediately prior to such merger. For the avoidance of doubt and notwithstanding anything herein to the contrary, in no event shall a transaction constitute a "Change in Control" if: (w) its sole purpose is to change the state of the Company's incorporation; (x) its sole purpose is to create a holding company that will be owned in

substantially the same proportions by the persons who held the Company's securities immediately before such transaction; (y) it is effected primarily for the purpose of financing the Company with cash (as determined by the Board without regard to whether such transaction is effectuated by a merger, equity financing, or otherwise); or (z) it constitutes, or includes sales of shares in connection with, the initial public offering of the Company's capital stock. Notwithstanding the foregoing, solely for the purpose of the timing of payments hereunder (and, not, for the avoidance of doubt, for the purposes of vesting) a "Change in Control" must also constitute a "change in control event," as defined in Treasury Regulation §1.409A-3(i)(5).

(g) Definition of Good Reason. For purposes hereof, "Good Reason" shall mean any one of the following: (i) the material reduction of Executive's Base Salary or target Annual Bonus (other than a reduction that is applied proportionately across), all other senior executive officers and that does not, collectively with all such reductions, exceed ten percent (10%)), (ii) the assignment to Executive of any duties materially and negatively inconsistent in respect of Executive's position (including status, offices, titles and reporting requirements), authority, duties or responsibilities, or any other action by the Company which results in a material diminution in such position, authority, duties or responsibilities; or (iii) the Company's material breach of this Agreement or any other material written agreement between the Company and Executive, *provided*, that, in each case, Executive will not be deemed to have Good Reason unless (1) Executive first provides the Company with written notice of the condition giving rise to Good Reason within thirty (30) days of its initial occurrence, (2) the Company or the successor company fails to cure such condition within thirty (30) days after receiving such written notice (the "Cure Period"), and (3) Executive's resignation based on such Good Reason is effective within thirty (30) days after the expiration of the Cure Period. The definition of "Good Reason" set forth herein shall apply to any equity awards, including any stock options, restricted stock units and restricted stock awards, granted to the Executive by the Company in lieu of an notwithstanding any definition of such term sheet set forth in any equity incentive plan or program or any awards agreement issued thereunder.

7. Assignment and Successors. The Company shall assign its rights and obligations under this Agreement to any successor to all or substantially all of the business or the assets of the Company (by merger or otherwise). This Agreement shall be binding upon and inure to the benefit of the Company, Executive, and their respective successors, assigns, personnel, and legal representatives, executors, administrators, heirs, distributees, devisees, and legatees, as applicable. None of Executive's rights or obligations may be assigned or transferred by Executive, other than Executive's rights to payments hereunder, which may be transferred only by will, operation of law, or as otherwise provided herein.

8. Miscellaneous Provisions.

(a) Confidentiality Agreement. Executive shall continue to be obligated by the At-Will Employment and the Employee Proprietary Information and Inventions Assignment Agreement previously entered into with the Company (the "Confidentiality Agreement"). The Confidentiality Agreement shall survive the termination of this Agreement and Executive's employment with the Company for the applicable period(s) set forth therein.

(b) Non-Solicitation of Employees. For a period of one (1) year following Executive's Date of Termination, Executive shall not, either directly or indirectly (i) solicit for employment by any individual, corporation, firm, or other business, any employees, consultants, independent contractors, or other service providers of the Company or any of its affiliates, or (ii) solicit any employee or consultant of the Company or any of its affiliates to leave the employment or consulting of or cease providing services to the Company or any of its affiliates; *provided*, *however*, that the foregoing clauses (i) and (ii) shall not apply to a general advertisement or solicitation (or any hiring pursuant to such advertisement or solicitation) that is not specifically targeted to such employees or consultants.

(c) Governing Law. This Agreement shall be governed, construed, interpreted, and enforced in accordance with its express terms, and otherwise in accordance with the substantive laws of the State of California, without giving effect to any principles of conflicts of law.

(d) Validity. The invalidity or unenforceability of any provision or provisions of this Agreement shall not affect the validity or enforceability of any other provision of this Agreement, which shall remain in full force and effect.

(e) Counterparts. This Agreement may be executed in several counterparts, each of which shall be deemed to be an original, but all of which together will constitute one and the same Agreement. Signatures delivered by facsimile shall be deemed effective for all purposes.

(f) Entire Agreement. The terms of this Agreement, together with the Confidentiality Agreement, are intended by the Parties to be the final expression of their agreement with respect to the employment of Executive by the Company and supersede all prior understandings and agreements, whether written or oral, regarding Executive's service to the Company, including without limitation, the Prior Agreement. The Parties further intend that this Agreement, together with the Confidentiality Agreement, shall constitute the complete and exclusive statement of their terms and that no extrinsic evidence whatsoever may be introduced in any judicial, administrative, or other legal proceeding to vary the terms of this Agreement or the Confidentiality Agreement. Notwithstanding the foregoing, in the event of any conflict between the terms of the Confidentiality Agreement and the terms of this Agreement, the terms of this Agreement shall prevail.

(g) Amendments; Waivers. This Agreement may not be modified, amended, or terminated except by an instrument in writing signed by Executive and a duly authorized representative of the Company. By an instrument in writing similarly executed, Executive or a duly authorized officer of the Company, as applicable, may waive compliance by the other Party with any specifically identified provision of this Agreement that such other Party was or is obligated to comply with or perform; *provided*, *however*, that such waiver shall not operate as a waiver of, or estoppel with respect to, any other or subsequent failure. No failure to exercise and no delay in exercising any right, remedy, or power hereunder shall preclude any other or further exercise of any other right, remedy, or power provided herein or by law or in equity.

(h) Dispute Resolution. To ensure the timely and economical resolution of disputes that arise in connection with this Agreement, Executive and the Company agree that, except as excluded herein, any and all controversies, claims and disputes arising out of or relating to this Agreement, including without limitation any alleged violation of its terms or otherwise arising out of the Parties' relationship, shall be resolved solely and exclusively by final and binding arbitration held in the county and state in which Executive works (which, if Executive works remotely, is the state in which Executive resides) through JAMS in conformity with law of the state in which arbitration is held and the then-existing JAMS employment arbitration rules, which can be found at https://www.jamsadr.com/rules-employment-arbitration/. The Federal Arbitration Act, 9 U.S.C. §§ 1 et seq. shall govern the interpretation and enforcement of this arbitration clause. All remedies available from a court of competent jurisdiction shall be available in the arbitration; provided, however, in the event of a breach of Sections 8(a) or 8(b), the Company may request relief from a court of competent jurisdiction if such relief is not available or not available in a timely fashion through arbitration as determined by the Company. The arbitrator shall: (a) provide adequate discovery for the resolution of the dispute; and (b) issue a written arbitration decision, to include the arbitrator's essential findings and conclusions and a statement of the award. Notwithstanding the foregoing, it is acknowledged that it will be impossible to measure in money the damages that would be suffered if the Parties fail to comply with any of the obligations imposed on them under Sections 8(a) and 8(b), and that in the event of any such failure, an aggrieved person will be irreparably damaged and will not have an adequate remedy at law. Any such person shall, therefore, be entitled to seek injunctive

relief, including specific performance, to enforce such obligations, and if any action shall be brought in equity to enforce any of the provisions of Sections 8(a) and 8(b), none of the Parties shall raise the defense, without a good faith basis for raising such defense, that there is an adequate remedy at law. Executive and the Company understand that by agreement to arbitrate any claim pursuant to this Section 8(h), they will not have the right to have any claim decided by a jury or a court, but shall instead have any claim decided through arbitration. Executive and the Company waive any constitutional or other right to bring claims covered by this Agreement other than in their individual capacities. Except as may be prohibited by applicable law, the foregoing waiver includes the ability to assert claims as a plaintiff or class member in any purported class or collective action or representative proceeding. Nothing herein shall limit Executive's ability to pursue claims for workers compensation or unemployment benefits or pursue other claims which by law cannot be subject to mandatory arbitration.

(i) Enforcement. If any provision of this Agreement is held to be illegal, invalid, or unenforceable under present or future laws, such provision shall be fully severable; this Agreement shall be construed and enforced as if such illegal, invalid, or unenforceable provision had never comprised a portion of this Agreement; and the remaining provisions of this Agreement shall remain in full force and effect and shall not be affected by the illegal, invalid, or unenforceable provision or by its severance from this Agreement. Furthermore, in lieu of such illegal, invalid, or unenforceable provision there shall be added automatically as part of this Agreement a provision as similar in terms to such illegal, invalid, or unenforceable provision as may be possible and be legal, valid, and enforceable.

(j) Withholding. The Company shall be entitled to withhold from any amounts payable under this Agreement any federal, state, local, or foreign withholding or other taxes or charges which the Company is required to withhold. The Company shall be entitled to rely on an opinion of counsel if any questions as to the amount or requirement of withholding shall arise.

(k) Whistleblower Protections and Trade Secrets. Notwithstanding anything to the contrary contained herein, nothing in this Agreement prohibits Executive from reporting possible violations of federal law or regulation to any United States governmental agency or entity in accordance with the provisions of and rules promulgated under Section 21F of the Securities Exchange Act of 1934 or Section 806 of the Sarbanes-Oxley Act of 2002, or any other whistleblower protection provisions of state or federal law or regulation (including the right to receive an award for information provided to any such government agencies). Furthermore, in accordance with 18 U.S.C. § 1833, notwithstanding anything to the contrary in this Agreement: (i) Executive shall not be in breach of this Agreement, and shall not be held criminally or civilly liable under any federal or state trade secret law (x) for the disclosure of a trade secret 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, or (y) for the disclosure of a trade secret that is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal; and (ii) if Executive files a lawsuit for retaliation by the Company for reporting a suspected violation of law, Executive may disclose the trade secret to Executive's attorney, and may use the trade secret information in the court proceeding, if Executive files any document containing the trade secret under seal, and does not disclose the trade secret, except pursuant to court order.

9. Prior Employment. Executive represents and warrants that Executive's acceptance of employment with the Company has not breached, and the performance of Executive's duties hereunder will not breach, any duty owed by Executive to any prior employer or other person. Executive further represents and warrants to the Company that (a) the performance of Executive's obligations hereunder will not violate any agreement between Executive and any other person, firm, organization, or other entity; (b) Executive is not bound by the terms of any agreement with any previous employer or other party to refrain from competing, directly or indirectly, with the business of such previous employer or other party that would be violated by Executive entering into this Agreement and/or providing services to the Company pursuant to

the terms of this Agreement; and (c) Executive's performance of Executive's duties under this Agreement will not require Executive to, and Executive shall not, rely on in the performance of Executive's duties or disclose to the Company or any other person or entity or induce the Company in any way to use or rely on any trade secret or other confidential or proprietary information or material belonging to any previous employer of Executive.

10.Golden Parachute Excise Tax.

(a) Best Pay. Any provision of this Agreement to the contrary notwithstanding, if any payment or benefit Executive would receive from the Company pursuant to this Agreement or otherwise ("Payment") would (i) constitute a "parachute payment" within the meaning of Section 280G of the Code and (ii) but for this sentence, be subject to the excise tax imposed by Section 4999 of the Code (the "Excise Tax"), then such Payment will be equal to the Reduced Amount (as defined below). The "Reduced Amount" will be either (A) the largest portion of the Payment that would result in no portion of the Payment (after reduction) being subject to the Excise Tax or (B) the entire Payment, whichever amount after taking into account all applicable federal, state, and local employment taxes, income taxes, and the Excise Tax (all computed at the highest applicable marginal rate, net of the maximum reduction in federal income taxes which could be obtained from a deduction of such state and local taxes), results in Executive' s receipt, on an after-tax basis, of the greater economic benefit notwithstanding that all or some portion of the Payment may be subject to the Excise Tax. If a reduction in a Payment is required pursuant to the preceding sentence and the Reduced Amount is determined pursuant to clause (A) of the preceding sentence, the reduction shall occur in the manner (the "Reduction Method") that results in the greatest economic benefit for Executive. If more than one method of reduction will result in the same economic benefit, the items so reduced will be reduced pro rata (the "Pro Rata Reduction Method"). Notwithstanding the foregoing, if the Reduction Method or the Pro Rata Reduction Method would result in any portion of the Payment being subject to taxes pursuant to Section 409A (as defined below) that would not otherwise be subject to taxes pursuant to Section 409A, then the Reduction Method and/or the Pro Rata Reduction Method, as the case may be, shall be modified so as to avoid the imposition of taxes pursuant to Section 409A as follows: (1) as a first priority, the modification shall preserve to the greatest extent possible, the greatest economic benefit for Executive as determined on an after-tax basis; (2) as a second priority, Payments that are contingent on future events (*e.g.*, being terminated without cause), shall be reduced (or eliminated) before Payments that are not contingent on future events; and (3) as a third priority, Payments that are "deferred compensation" within the meaning of Section 409A shall be reduced (or eliminated) before Payments that are not deferred compensation within the meaning of Section 409A.

(b) Accounting Firm. The accounting firm engaged by the Company for general tax purposes as of the day prior to the Change in Control will perform the calculations set forth in Section 10(a) above. If the firm so engaged by the Company is serving as the accountant or auditor for the acquiring company, the Company will appoint a nationally recognized accounting firm to make the determinations required hereunder. The Company will bear all expenses with respect to the determinations by such firm required to be made hereunder. The accounting firm engaged to make the determinations hereunder will provide its calculations, together with detailed supporting documentation, to the Company within thirty (30) days before the consummation of a Change in Control (if requested at that time by the Company) or such other time as requested by the Company. If the accounting firm determines that no Excise Tax is payable with respect to a Payment, either before or after the application of the Reduced Amount, it will furnish the Company with documentation reasonably acceptable to the Company that no Excise Tax will be imposed with respect to such Payment. Any good faith determinations of the accounting firm made hereunder will be final, binding and conclusive upon the Company and Executive.

11.Section 409A.

(a) General. The intent of the Parties is that the payments and benefits under this Agreement comply with or be exempt from Section 409A of the Code and the Department of Treasury regulations and other interpretive guidance issued thereunder, including without limitation any such regulations or other guidance that may be issued after the Effective Date, ("Section 409A") and, accordingly, to the maximum extent permitted, this Agreement shall be interpreted to be in compliance therewith. If Executive notifies the Company that Executive has received advice of tax counsel of a national reputation with expertise in Section 409A that any provision of this Agreement would cause Executive to incur any additional tax or interest under Section 409A (with specificity as to the reason therefor) or the Company independently makes such determination, the Company and Executive shall take commercially reasonable efforts to reform such provision to try to comply with or be exempt from Section 409A through good faith modifications to the minimum extent reasonably appropriate to conform with Section 409A, *provided* that any such modifications shall not increase the cost or liability to the Company. To the extent that any provision hereof is modified in order to comply with or be exempt from Section 409A, such modification shall be made in good faith and shall, to the maximum extent reasonably possible, maintain the original intent and economic benefit to Executive and the Company of the applicable provision without violating the provisions of Section 409A.

(b) Separation from Service. Notwithstanding any provision to the contrary in this Agreement: (i) no amount that constitutes "deferred compensation" under Section 409A shall be payable pursuant to Section 6(b) above unless the termination of Executive's employment constitutes a "separation from service" within the meaning of Section 1.409A-1(h) of the Department of Treasury Regulations ("Separation from Service"); (ii) for purposes of Section 409A, Executive's right to receive installment payments shall be treated as a right to receive a series of separate and distinct payments; and (iii) to the extent that any reimbursement of expenses or in-kind benefits constitutes "deferred compensation" under Section 409A, such reimbursement or benefit shall be provided no later than December 31st of the year following the year in which the expense was incurred. The amount of expenses reimbursed in one year shall not affect the amount eligible for reimbursement in any subsequent year. The amount of any in-kind benefits provided in one year shall not affect the amount of in-kind benefits provided in any other year.

(c) Specified Employee. Notwithstanding anything in this Agreement to the contrary, if Executive is deemed by the Company at the time of Executive's Separation from Service to be a "specified employee" for purposes of Section 409A, to the extent delayed commencement of any portion of the benefits to which Executive is entitled under this Agreement is required in order to avoid a prohibited distribution under Section 409A, such portion of Executive's benefits shall not be provided to Executive prior to the earlier of (i) the expiration of the six (6)-month period measured from the date of Executive's Separation from Service with the Company or (ii) the date of Executive's death. Upon the first business day following the expiration of the applicable Section 409A period, all payments deferred pursuant to the preceding sentence shall be paid in a lump sum to Executive (or Executive's estate or beneficiaries), and any remaining payments due to Executive under this Agreement shall be paid as otherwise provided herein.

(d) Release. Notwithstanding anything to the contrary in this Agreement, to the extent that any payments due under this Agreement as a result of Executive's termination of employment are subject to Executive's execution and delivery of a Release, (i) the Company shall deliver the Release to Executive within ten (10) business days following Executive's Date of Termination, and the Company's failure to deliver a Release prior to the expiration of such ten (10) business day period shall constitute a waiver of any requirement to execute a Release, (ii) if Executive fails to execute the Release on or prior to the Release Expiration Date (as defined below) or timely revokes Executive's acceptance of the Release thereafter, Executive shall not be entitled to any payments or benefits otherwise conditioned on the Release, and (iii) in any case where Executive's Date of Termination and the Release Expiration Date fall in two separate taxable years, any payments required to be made to Executive that are conditioned on the Release and are treated as nonqualified deferred compensation for purposes of Section 409A shall be made in the

later taxable year. For purposes of this Section 11(d), "Release Expiration Date" shall mean the date that is twenty-one (21) days following the date upon which the Company timely delivers the Release to Executive, or, in the event that Executive's termination of employment is "in connection with an exit incentive or other employment termination program" (as such phrase is defined in the Age Discrimination in Employment Act of 1967), the date that is forty-five (45) days following such delivery date. To the extent that any payments of nonqualified deferred compensation (within the meaning of Section 409A) due under this Agreement as a result of Executive's termination of employment are delayed pursuant to this Section 11(d), such amounts shall be paid in a lump sum on the first payroll date following the date that Executive executes and does not revoke the Release (and the applicable revocation period has expired) or, in the case of any payments subject to Section 11(d)(iii), on the first payroll period to occur in the subsequent taxable year, if later.

12.Employee Acknowledgement. Executive acknowledges that Executive has read and understands this Agreement, is fully aware of its legal effect, has not acted in reliance upon any representations or promises made by the Company other than those contained in writing herein, and has entered into this Agreement freely based on Executive's own judgment.

[*Signature Page Follows*]

IN WITNESS WHEREOF, the Parties have duly executed this Agreement as of the date and year first above written.

NEUMORA THERAPEUTICS, INC.

By: /s/ Henry Gosebruch

Name: Henry Gosebruch

Title: Chief Executive Officer

EXECUTIVE

By: /s/ Carol Y. Suh

Name: Carol Y. Suh

EXHIBIT A

PERMITTED OUTSIDE ACTIVITIES

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement (Form S-8 No. 333-274593) pertaining to the Blackthorn Therapeutics, Inc. 2015 Equity Incentive Plan, 2020 Equity Incentive Plan, 2023 Incentive Award Plan, and Employee Stock Purchase Plan of Neumora Therapeutics, Inc. of our report dated March 7, 2024, with respect to the consolidated financial statements of Neumora Therapeutics, Inc. included in this Annual Report (Form 10-K) for the year ended December 31, 2023.

/s/ Ernst & Young LLP

San Jose, California
March 7, 2024

Exhibit 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

I, Henry O. Gosebruch, certify that:

1. I have reviewed this Annual Report on Form 10-K of Neumora 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)) 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) [Omitted];

   (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 7, 2024

By: /s/ Henry O. Gosebruch

Henry O. Gosebruch
Chief Executive Officer
(Principal Executive Officer)

Exhibit 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

I, Joshua Pinto, certify that:

1. I have reviewed this Annual Report on Form 10-K of Neumora 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)) 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) [Omitted];

   (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 7, 2024

By: /s/ Joshua Pinto, Ph.D.

Joshua Pinto, Ph.D.
Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Neumora 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 7, 2024

By: /s/ Henry O. Gosebruch

Henry O. Gosebruch
Chief Executive Officer
(Principal Executive Officer)

Exhibit 32.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Neumora 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 7, 2024

By: /s/ Joshua Pinto, Ph.D.

Joshua Pinto, Ph.D
Chief Financial Officer
(Principal Financial Officer)

Exhibit 97.1

NEUMORA THERAPEUTICS, INC. POLICY FOR RECOVERY OF ERRONEOUSLY AWARDED COMPENSATION

Neumora Therapeutics, Inc. (the "***Company***") has adopted this Policy for Recovery of Erroneously Awarded Compensation (the "***Policy***"), effective as of September 14, 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.