Table of Contents

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, 2024
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: 001-39321

AVIDITY BIOSCIENCES, INC.

(Exact name of registrant as specified in its charter)

Delaware	**46-1336960**
(State or Other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification No.)**
10578 Science Center Drive, Suite 125 San Diego, CA	**92121**
(Address of Principal Executive Offices)	**(Zip Code)**

(858) 401-7900
(Registrant's Telephone Number, Including Area Code)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.0001 per share	**RNA**	**The Nasdaq Global Market**

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

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

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934. Yes ☐ No ☒

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

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

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

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

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

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

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

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

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

As of June 30, 2024, the aggregate market value of the registrant's common stock held by non-affiliates of the registrant was approximately $4.4 billion, based on the closing price of the registrant's common stock on the Nasdaq Global Market of $40.85 per share.

As of February 14, 2025, the registrant had 120,212,301 shares of common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Certain sections of the registrant's definitive proxy statement for the 2025 annual meeting of stockholders to be filed with the Securities and Exchange Commission pursuant to Regulation 14A not later than 120 days after the end of the fiscal year covered by this Form 10-K are incorporated by reference into Part III of this Form 10-K.

AVIDITY BIOSCIENCES, INC.

TABLE OF CONTENTS

FORM 10-K
For the Year Ended December 31, 2024

INDEX

PART I

Forward-Looking Statements and Market Data

This annual report on Form 10-K contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. All statements other than statements of historical facts contained in this annual report, including, without limitation, statements regarding our future results of operations and financial position; business strategies and plans; research and development plans; the anticipated timing, costs, design and conduct of our ongoing and planned preclinical studies and clinical trials for our product candidates; the anticipated timing of release of data from our ongoing clinical trials; the potential benefits of certain regulatory designations; the timing and likelihood of regulatory filings and approvals for our product candidates; the potential safety and therapeutic benefits of our product candidates, whether based on data from our ongoing clinical trials or preclinical studies, or otherwise; the characterization of data produced from our ongoing clinical programs; our ability to commercialize our product candidates, if approved; the pricing and reimbursement of our product candidates, if approved; the timing and likelihood of success; plans and objectives of management for future operations; future results of anticipated product development efforts; and the anticipated impacts of any pandemics or epidemics, inflationary pressures, and any military conflict or other hostilities on our business, are forward-looking statements. These statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. This annual report on Form 10-K also contains estimates and other statistical data made by independent parties and by us relating to market size and growth and other data about our industry. This data involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. In addition, projections, assumptions and estimates of our future performance and the future performance of the markets in which we operate are necessarily subject to a high degree of uncertainty and risk.

In some cases, you can identify forward-looking statements by terms such as “may,” “will,” “should,” “expect,” “plan,” “anticipate,” “could,” “intend,” “target,” “project,” “contemplate,” “believe,” “estimate,” “predict,” “potential” or “continue” or the negative of these terms or other similar expressions. The forward-looking statements in this annual report are only predictions. We have based these forward-looking statements largely on our current expectations and projections about future events and financial trends that we believe may affect our business, financial condition and results of operations. These forward-looking statements speak only as of the date of this annual report and are subject to a number of risks, uncertainties and assumptions, including those described in Part I, Item 1A, “Risk Factors.” The events and circumstances reflected in our forward-looking statements may not be achieved or occur, and actual results could differ materially from those projected in the forward-looking statements. Moreover, we operate in an evolving environment. New risk factors and uncertainties may emerge from time to time, and it is not possible for management to predict all risk factors and uncertainties. Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein, whether as a result of any new information, future events, changed circumstances or otherwise. All forward-looking statements are qualified in their entirety by this cautionary statement, which is made under the safe harbor provisions of the Private Securities Litigation Reform Act of 1995.

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

We maintain a website at www.avidity biosciences.com, to which we regularly post copies of our press releases as well as additional information about us. Our filings with the Securities and Exchange Commission, or SEC, are available free of charge through our website as soon as reasonably practicable after being electronically filed with or furnished to the SEC. Information contained in our website does not constitute a part of this report or our other filings with the SEC.

ITEM 1. Business

We are a biopharmaceutical company committed to delivering a new class of RNA therapeutics called Antibody Oligonucleotide Conjugates, or AOCs™. Our proprietary AOC platform is designed to combine the specificity of monoclonal antibodies, or mAbs, with the precision of RNA therapeutics to target the root cause of diseases previously untreatable with such therapeutics. Our pipeline currently has three programs in potentially registrational clinical trials. Delpacibart etedesiran, abbreviated as del-desiran (formerly AOC 1001), is designed to treat people with myotonic dystrophy type 1, or DM1, and is currently in Phase 3 development with the global HARBOR™ trial. Delpacibart braxlosiran, or del-brax (formerly AOC 1020), is the first investigational therapy designed to directly target DUX4 in people living with facioscapulohumeral muscular dystrophy, or FSHD, and is currently in Phase 1/2 development with the FORTITUDE™ trial. Delpacibart zotadirsen, or del-zota (formerly AOC 1044), is designed for people with Duchenne muscular dystrophy, or DMD, and is currently in development with the Phase 2 EXPLORE44 Open-Label Extension (OLE) study. Del-zota is specifically designed for people with mutations amenable to exon 44 skipping, or DMD44, and is the first of multiple AOCs we are developing for DMD. Del-desiran, del-brax and del-zota have all been granted Orphan Designation by the FDA and the European Medicines Agency, or EMA, and Fast Track designation by the FDA. In addition, the FDA has granted del-desiran Breakthrough Therapy designation for the treatment of DM1 and granted del-zota Rare Pediatric Disease designation.

In February 2025, we announced we will be reporting top-line del-zota data from our completed Phase 1/2 EXPLORE44 trial for people living with DMD44 at the Muscular Dystrophy Association (MDA) Clinical and Scientific Conference in March 2025. We also announced we have now completed enrollment in the EXPLORE44-OLE™ study for people living with DMD44. The data from the Phase 1/2 EXPLORE44® and EXPLORE44-OLE studies will support the company's first BLA submission anticipated at year end 2025.

Additionally, we shared our full year 2024 highlights across our three clinical development programs for del-zota, del-desiran and del-brax, and other pipeline advancements. These include:

Del-zota for DMD44

- In February 2024, Avidity announced the FDA granted Rare Pediatric Disease designation for del-zota for the treatment of DMD44.
- In August 2024, Avidity reported positive initial del-zota data from the 5 mg/kg cohort of the Phase 1/2 EXPLORE44 trial in people living with DMD44 which demonstrated remarkable delivery to skeletal muscle, exceptional, unadjusted increase of 25% in near full-length dystrophin production with a profound reduction in creatine kinase levels to near normal, and robust exon 44 skipping. Del-zota demonstrated favorable safety and tolerability with most treatment emergent adverse events being mild or moderate.
- In addition to the participants rolling over from the Phase 1/2 EXPLORE44 trial, Avidity announced it was enrolling additional participants in the EXPLORE44 Open-label Extension (OLE) study to support a potential BLA submission at year end 2025. Enrollment in the EXPLORE44-OLE study is now complete.

Del-desiran for DM1

- In March 2024, Avidity announced it achieved global regulatory alignment with FDA, EMA and other global regulatory authorities on the design of the del-desiran Phase 3 HARBOR study.
- In March 2024, Avidity reported positive del-desiran long-term 4 mg/kg data from the MARINA-OLE™ study which showed reversal of disease progression in people living with DM1 across multiple endpoints, including vHOT, muscle strength and activities of daily living when compared to END-DM1 natural history data.
- In May 2024, Avidity announced the FDA granted Breakthrough Therapy designation for del-desiran for the treatment of DM1.
- Enrollment for the global Phase 3 HARBOR trial is ongoing and on track for completion in mid-2025.

Del-brax for FSHD

- In June 2024, Avidity reported positive initial del-brax 2 mg/kg data at four months from the Phase 1/2 FORTITUDE trial which demonstrated remarkable and consistent reductions of greater than 50% in DUX4 regulated genes, mean reductions of 25% or greater in novel circulating biomarker and creatine kinase, trends of functional improvement, and favorable safety and tolerability in people living with FSHD.
- In October 2024, Avidity announced the initiation of the biomarker cohort in the Phase 1/2 FORTITUDE trial of del-brax. 2 mg/kg of del-brax will be administered every six weeks, designed to ensure continuous suppression of DUX4.

Pipeline Advancements

- In November 2024, Avidity announced the expansion of its pipeline into precision cardiology, including two wholly-owned candidates: one for PRKAG2 syndrome and one for PLN cardiomyopathy. In addition, Avidity shared details of its next-generation technology innovations with up to 30-fold improvements in delivery observed in preclinical studies.
- In August 2024, Avidity announced it plans to advance additional DMD product candidates following robust del-zota data; a product candidate for exon 45 skipping is currently in IND-enabling studies.

In addition, we announced our upcoming clinical and regulatory outlook for 2025 as we accelerate expansion of our capabilities to support potential launches of product candidates currently in clinical development and to potentially operate as a commercial organization. Avidity's anticipated 2025 clinical and regulatory highlights include:

- **Del-zota for the treatment of DMD44:**
  - Presentation of topline data from the EXPLORE44 trial in the first quarter of 2025.
  - Presentation of topline data from the ongoing EXPLORE44-OLE™ trial in the fourth quarter of 2025.
  - Potential BLA submission year at end 2025.
    - The FDA confirmed the accelerated approval path is available for del-zota and that the clinical data package from the EXPLORE44 program could support a BLA filing.
- **Del-desiran for the treatment of DM1:**
  - Completion of enrollment of the ongoing Phase 3 HARBOR trial in mid-2025.
  - Update from the ongoing MARINA-OLE trial including long-term 4mg/kg and safety data in the fourth quarter of 2025.
  - Publication of data analyses from the completed Phase 1/2 MARINA® trial in 2025.
  - Planned marketing application submissions in 2026, including in the U.S. and European Union.
- **Del-brax for the treatment of FSHD:**
  - Potential regulatory alignment on a global Phase 3 trial design in the second quarter of 2025.
  - Potential alignment on an accelerated approval path for the ongoing FORTITUDE biomarker cohort in the second quarter of 2025.
  - Completion of enrollment of the FORTITUDE biomarker cohort in the second quarter of 2025.
  - Presentation of topline data from the FORTITUDE trial in the second quarter of 2025.
  - Initiation of a global, potentially registrational trial in FSHD in the second quarter of 2025.

Our Strategy

Our mission is to profoundly improve people's lives by revolutionizing the delivery of RNA therapeutics. We are executing on our mission by focusing on our three strategic pillars: a disruptive and broad AOC platform, an advancing and expanding pipeline, and building an agile and diverse company. With this strategy, our goal is

to discover, develop and commercialize novel AOC therapeutics that overcome current barriers to the delivery of oligonucleotides and unlock their potential to treat a wide range of serious diseases currently lacking adequate treatment options. The key elements of our strategy to achieve this goal are to:

- Harness the power of our AOC platform to develop a new class of drugs**;**
- Continue advancing our three clinical stage product candidates in rare neuromuscular indications;
- Expand our pipeline in our current focus areas of neuromuscular and precision cardiology indications as well as into additional tissue types; and
- Build an agile and diverse company.

As we continue to expand the company, we remain focused on employing a disciplined strategy to maximize the value of our pipeline by retaining development and commercialization rights to those product candidates, indications and geographies that we believe we can ultimately commercialize successfully on our own if they are approved. We continue to collaborate on product candidates that we believe have promising utility in disease areas or patient populations that are better served by the resources or specific expertise of other biopharmaceutical companies. Through collaborations and our internal research, we plan to continue to invest our resources in our AOC platform to explore the full potential of our AOCs in additional previously inaccessible tissue and cell types.

Our AOC Product Platform

Overview

We are committed to delivering a new class of RNA therapeutics called AOCs designed to overcome the current limitations of oligonucleotide therapies in order to treat a wide range of serious diseases. We utilize our proprietary AOC platform to design, engineer and develop therapeutics that combine specificity of mAbs with the precision of oligonucleotide therapies to target the root cause of diseases previously untreatable with such therapeutics. All of our oligonucleotides target disease-related RNA. RNA is a polymeric molecule essential in the coding, decoding, regulation and expression of genes. We have accumulated deep experience regarding oligonucleotide therapeutics, modulation of RNA processes, antibody engineering and conjugation, and drug delivery techniques. We collectively refer to the know-how and proprietary technology borne out of this experience, and their systematic application in the design and development of our product candidates, as our AOC platform.

Our Approach

Based on the data-driven hypothesis that the delivery of oligonucleotides can be greatly enhanced by using antibodies as conjugates, our scientists have established a framework for screening potential cell surface protein-mAb pairs to determine which pairs we believe are well suited to deliver active oligonucleotides to specific cell types. We have identified multiple cell surface protein-mAb pairs that can deliver oligonucleotides into various tissue and cell types to induce pharmacologic changes. For example, we have employed AOCs built on a scaffold of a mAb or mAb fragment that binds with high selectivity and affinity to TfR1 to deliver oligonucleotides to cell types outside of the liver.

Our deep experience with oligonucleotide therapeutics, modulation of RNA processes, antibody engineering and conjugation, and drug delivery techniques provides the foundation for our efforts to address the current limitations of oligonucleotide therapies. Our disruptive and broad AOC platform also affords us the option to deploy various types of oligonucleotides, including small interfering RNAs, or siRNAs, and phosphorodiamidate morpholino oligomers, or PMOs, whose specific mechanisms of action modify RNA function in different ways. We have programs utilizing both siRNAs and PMOs in clinical development. This flexibility allows us to use oligonucleotides that are tailored to modulate a given disease process. Mechanisms of these oligonucleotides can range from reducing the expression of a disease-related RNA with siRNAs, to correction of aberrant processing of RNAs with splice modifying oligonucleotides. AOCs are designed to do the following:

- Combine the proven technologies of approved mAbs and oligonucleotides;
- Deliver to tissues previously untreatable with RNA therapeutics, starting with muscle and broadening to other tissues and cell types; and

- Scale with experienced manufacturers who are able to utilize well-established and scalable methods for manufacturing mAbs and oligonucleotides. We also have the ability to use a single mAb across multiple programs, providing significant leverage around development costs and timelines associated with each incremental program.

Advantages of our AOC Platform

We believe that the product candidates derived from our AOC platform will have the potential to offer the following distinct advantages:

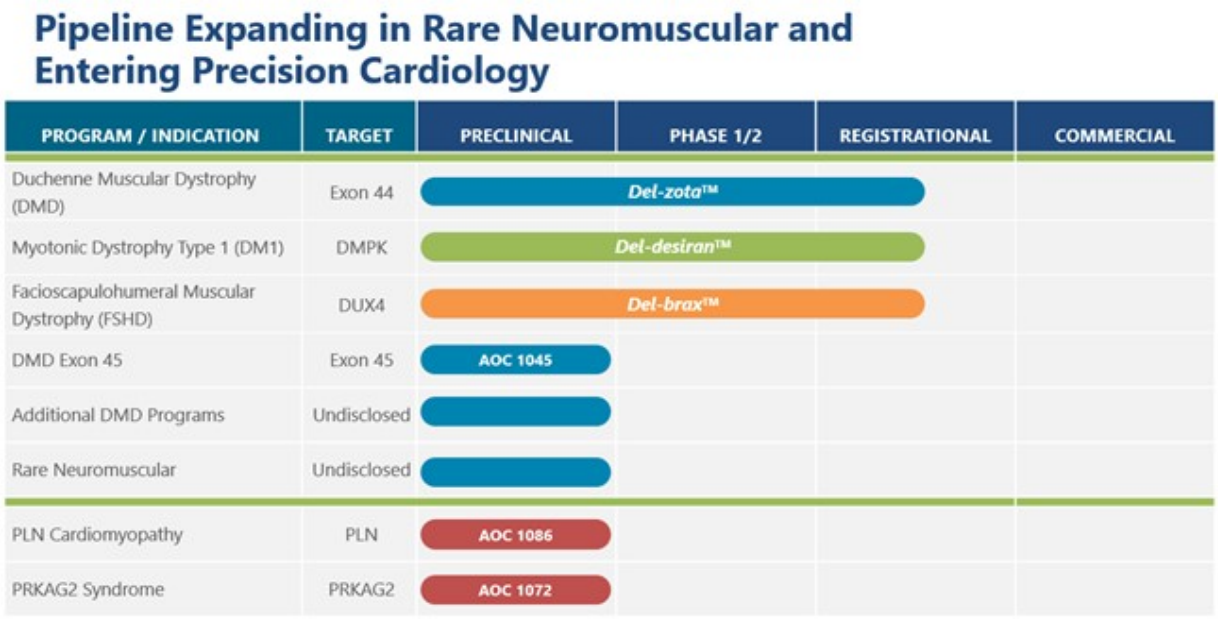
- *Expand scope of diseases addressable with oligonucleotides*: (i) utilize identified cell surface protein-antibody pairs to design oligonucleotides to precisely target the underlying cause of diseases previously untreatable with RNA therapeutics; (ii) flexibility to deploy an appropriate oligonucleotide type for different diseases; and (iii) optimize all structural components of our AOCs for effective delivery—the oligonucleotide, the mAb and the antibody conjugate design;
- *Potential to mitigate toxicity by limiting drug exposure:* (i) selection of the most potent oligonucleotide type; (ii) targeted delivery to tissues and cells; and (iii) infrequent administration;
- *Infrequent dosing:* (i) ability to deliver oligonucleotides to tissues and cells at concentrations that produce pronounced and prolonged pharmacodynamic effects as observed in our preclinical models; and (ii) ability to select appropriate oligonucleotide mechanisms to maximize durability; and
- *Readily reproducible and scalable*: (i) AOCs synthesized using well-established and scalable methods for manufacturing mAbs and oligonucleotides; and (ii) ability to use a single mAb across multiple programs provides significant leverage around development costs and timelines associated with each incremental muscle program. For example, we use the same mAb targeting TfR1 across our current muscle franchise.

Data from our three clinical stage programs has demonstrated as of their latest respective data cutoff dates that AOC-derived product candidates can consistently and reproducibly deliver oligonucleotides to muscle and engage the relevant RNA target.

Our Development Programs

We are advancing and expanding our innovative AOC pipeline to develop potential treatment options for patients and their families across a wide range of therapeutic areas. Our first AOC programs are from our rare neuromuscular disease franchise where we have leveraged our deep experience with oligonucleotide therapeutics, modulation of RNA processes, antibody engineering and conjugation and drug delivery techniques. We now have programs in our early-stage development pipeline through internal efforts and external collaborations that explore utilizing AOCs in additional indications including cardiology and immunology. We have now expanded beyond rare neuromuscular disorders and into precision cardiology, advancing two wholly-owned precision cardiology development candidates targeting rare genetic cardiomyopathies for PRKAG2 syndrome and PLN cardiomyopathy.

The research and development chart below represents a summary of our wholly-owned development programs.



We selected muscle as the first tissue type in which to explore the potential of our AOCs. In our early screening efforts, we observed a 95% reduction of target gene expression in mouse skeletal muscle with the AOC we tested, which in part led us to focus on developing a deep pipeline of AOCs that are designed to address multiple rare neuromuscular diseases including DM1, FSHD and DMD. We currently use the same proprietary mAb targeting TfR1 across our neuromuscular and precision cardiology programs, which we believe gives us significant leverage of development costs and timelines associated with each incremental neuromuscular program.

Our Clinical Programs

Del-desiran for the Treatment of DM1

Del-desiran is designed to address the root cause of DM1 by reducing levels of a disease-related mRNA called DMPK. Del-desiran consists of a proprietary mAb that binds to the transferrin receptor 1 (TfR1) conjugated with an siRNA targeting DMPK mRNA. Del-desiran is currently being studied in the global Phase 3 HARBOR trial and in the ongoing MARINA-OLE trial in people with DM1. Long-term data from the MARINA-OLE trial showed reversal of disease progression in people living with DM1 across multiple endpoints including video hand opening time (vHOT) as a measure of hand function and myotonia, muscle strength and activities of daily living when compared to END-DM1 natural history data. Del-desiran has received Breakthrough Therapy, Orphan Drug and Fast Track designations by the FDA and Orphan designation by the European Commission.

DM1 Disease Overview

DM1 is an underrecognized, progressive and often fatal neuromuscular disease with multiple organ involvement. DM1 is a monogenic, autosomal dominant disease caused by a triplet-repeat in the DMPK gene, resulting in a toxic gain of function mRNA. DM1 primarily affects skeletal, smooth and cardiac muscle and can be highly variable with respect to severity, presentation and age of onset. Patients can suffer from a constellation of manifestations including myotonia and muscle weakness, respiratory problems, fatigue, hypersomnia, cardiac abnormalities, gastrointestinal complications, and cognitive and behavioral impairment. DM1 is estimated to affect an estimated 80,000 in the United States and Europe. All forms, except the late-onset form, of DM1 are associated with high levels of disease burden and may cause premature mortality.

Current Treatment Landscape and Limitations

There are currently no approved therapies to treat DM1, and medical care is focused largely on symptom management. A previous attempt at treating DM1 with an unconjugated antisense oligonucleotide was discontinued due to challenges associated with delivery. Therefore, there remains a high unmet medical need for new disease modifying therapies.

Our Solution

Del-desiran consists of a proprietary mAb that binds to TfR1 conjugated with an siRNA, siDMPK.19, targeted to DMPK RNA, and is designed to be administered to the patient as an intravenous infusion. We believe that the following specific characteristics of del-desiran position it to have advantages over historical and current efforts to develop an effective therapy for people with DM1:

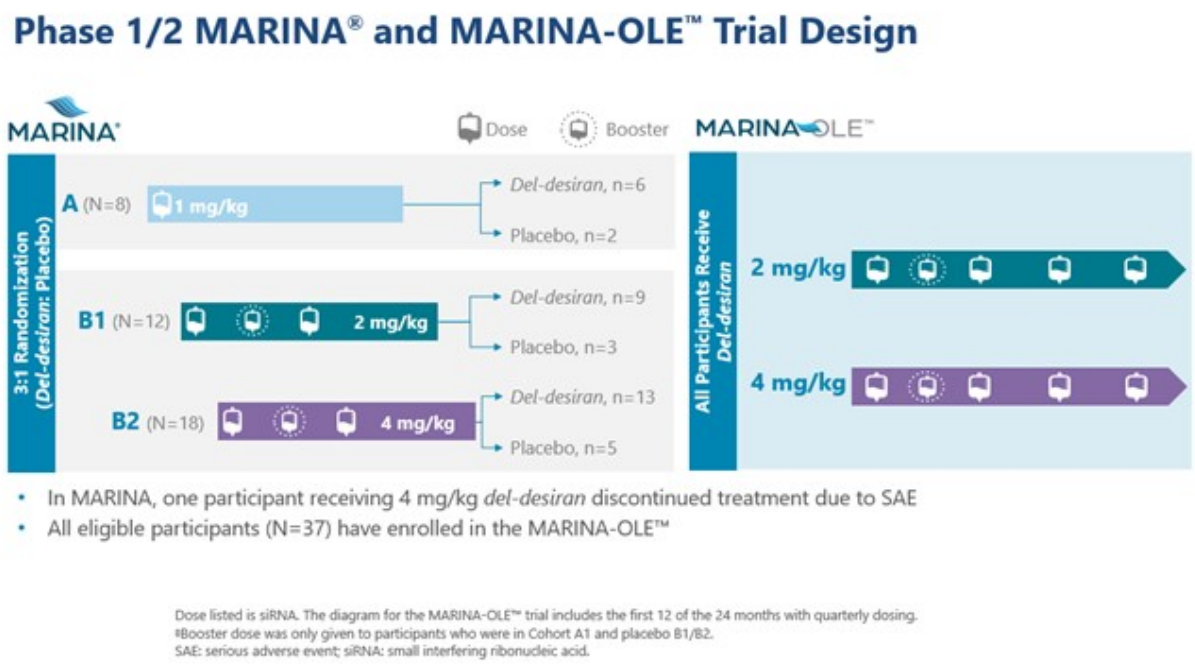
- *Addresses the underlying cause of the disease*—DM1 is caused by an increase in the number of CUG triplet repeats occurring in the DMPK gene product. Del-desiran is designed to reduce the expression levels of DMPK RNA, thereby reducing the CUG burden in the nucleus and thereby releasing muscle blind-like protein to allow for normal mRNA processing;
- *Efficient delivery of drug substance to diseased cells*—In an effort to solve for challenges identified in prior unsuccessful efforts to deliver an unconjugated oligonucleotide into muscle cells, the TfR1 antibody component of del-desiran facilitates efficient delivery of del-desiran to skeletal and cardiac muscle cells. Once inside the muscle cells, the siRNA component of del-desiran, siDMPK.19, acts to reduce levels of DMPK mRNA in both the nucleus and the cytoplasm;
- *Reproducible and scalable therapeutic*—As with all our AOCs, del-desiran is readily synthesized using well-established and scalable methods for manufacturing mAbs and oligonucleotides.

Phase 3 HARBOR Study

In June 2024, we announced the initiation of our global Phase 3 HARBOR trial and began administration of del-desiran. We anticipate completion of enrollment of the ongoing Phase 3 HARBOR trial in mid-2025. The HARBOR trial is a randomized, placebo-controlled, double-blind pivotal study designed to evaluate del-desiran in approximately 150 people (age 16 and older) living with DM1. The trial will be conducted at approximately 40 sites globally. Patients will be administered either del-desiran or placebo (1:1) every eight weeks. The trial is designed to assess del-desiran's impact on multiple key aspects of DM1 including myotonia, muscle strength and activities of daily living. All study participants, regardless of whether they receive active treatment or placebo, will have the option to enroll into an open-label extension trial.

Phase 1/2 MARINA Clinical Trial and MARINA-OLE Study

The MARINA trial was a randomized, double-blind, placebo-controlled, Phase 1/2 clinical trial that enrolled 38 adults with DM1. The primary objective of this study was to evaluate the safety and tolerability of single and multiple ascending doses of del-desiran administered intravenously. The MARINA trial assessed the activity of del-desiran across key biomarkers, including spliceopathy, an important biomarker for DM1, and knockdown of DMPK mRNA. Though the Phase 1/2 trial was not powered to assess functional benefit, it explored the clinical activity of del-desiran in multiple measures of muscle function including myotonia, muscle strength, measures of mobility as well as patient reported outcomes and quality of life measures. Patients had the option to enroll in MARINA-OLE, an open label extension study, at the end of the treatment period. MARINA-OLE is an open-label, multi-center trial designed to evaluate the long-term safety and tolerability of del-desiran in participants with DM1 who were previously enrolled in the MARINA Phase 1/2 trial. This trial continues to evaluate the safety, tolerability, PK, PD, and efficacy of del-desiran in participants enrolled in the randomized, placebo-controlled, Phase 1/2 MARINA clinical trial. All participants who completed the MARINA study rolled-over into the MARINA-OLE study and continue to receive del-desiran regardless of whether they received treatment or placebo in the MARINA study.



The sites participating in the MARINA-OLE study are all part of the Myotonic Dystrophy Clinical Research Network, or DMCRN. The DMCRN is running a natural history study called Establishing Biomarkers and Clinical Endpoints in Myotonic Dystrophy Type 1, or END-DM1. We have entered into an agreement supporting END-DM1, a non-interventional study designed to advance the understanding of disease progression in approximately 700 people with DM1. This agreement allows us to assess the data from END-DM1, which we believe continues to support the clinical development of del-desiran.

Long-Term Del-desiran Data Reported in March 2024 from the Phase 2 MARINA-OLE Trial

Del-desiran data reported in March 2024 showed reversal of disease progression in people living with DM1 across multiple endpoints including video hand opening time, or vHOT, muscle strength and activities of daily living when compared to END-DM1 natural history data._This del-desiran 4 mg/kg data from the MARINE-OLE study showed consistent and durable improvements in the following:

- Myotonia (vHOT)
- Multiple measures of strength:
    - Hand grip
    - Quantitative Muscle Testing (QMT) total score which includes hand grip; elbow extension and elbow flexion; knee extension and knee flexion, and ankle dorsiflexion
- DM1-Activ, a patient reported outcome (PRO) that measures activities of daily living (e.g., taking a shower, visiting family or friends, and walking up stairs)

With over 265 infusions totaling 61.1 patient-years of exposure, del-desiran continued to demonstrate favorable safety and tolerability. Additionally:

- All related adverse events (AE) were mild or moderate;
- The most common related AEs reported in 2 or more participants in the MARINA-OLE were nausea and headache;
- There were no study drug related SAEs; and
- There have been no discontinuations in the MARINA-OLE study.

In January 2025, we announced that we will be presenting an update from the ongoing MARINE-OLE trial including long-term 4mg/kg and safety data in the fourth quarter of 2025. We anticipate providing publication of data analyses from the completed Phase 1/2 MARINA trial in 2025. We anticipate submitting marketing applications in 2026, including in the U.S. and European Union.

In October 2024, the FDA removed the partial clinical hold placed on del-desiran in September 2022, in response to a serious adverse event, or SAE, reported in a single participant in the 4mg/kg cohort of the MARINA study.

Del-brax for the Treatment of FSHD

We are developing del-brax to treat the underlying cause of FSHD, one of the most common forms of muscular dystrophy. FSHD is a genetic muscle disorder in which the muscles of the face, shoulder blades, and upper arms are among the most affected. Symptoms usually begin before age 20, with weakness and atrophy of the muscles around the eyes and mouth, shoulders, abdominal muscles, upper arms, and lower legs, usually with asymmetric involvement. FSHD is caused by the aberrant expression, and subsequent translation, of a gene called double homeobox 4, or DUX4, which leads to cell death, immune response and oxidative stress.

Our therapeutic strategy in FSHD employs an AOC based on our proprietary mAb that targets TfR1 to deliver an siRNA targeted to DUX4 mRNA. By directly targeting DUX4 RNA in the muscle, leading to destruction of the DUX4 transcripts, we can reduce the downstream effects including cell death and oxidative stress. There are no currently approved treatments for people living with FSHD and a significant unmet need remains. The FDA and European Commission have granted Orphan Designation for del-brax. The FDA also granted Fast Track designation to del-brax for the treatment of FSHD.

Disease Overview

FSHD is characterized by progressive and often asymmetric skeletal muscle loss that initially causes weakness in muscles in the face, shoulders, arms and trunk and progresses to weakness in muscles in lower body. FSHD is an autosomal dominant disease caused by the aberrant expression of the DUX4 gene in the skeletal muscle, which activates genes that are toxic to muscle cells and leads to a series of downstream events that result in skeletal muscle wasting and compromised muscle function. Skeletal muscle weakness results in physical limitations throughout the whole body, including an inability to lift arms for more than a few seconds, loss of ability to show facial expressions and serious speech impediments. These symptoms cause many people affected by FSHD to become dependent on the use of a wheelchair for mobility. FSHD affects both sexes equally, with onset typically in teenage and young adult years. The FSHD Society estimated FSHD affects approximately one in 20,000 people in the United States. A recent study conducted in the Netherlands reported a more frequent prevalence of one in 8,333 people. We estimate that the FSHD patient population is between 45,000–87,000 in the United States and Europe. As is typical in diseases with no approved therapies, we believe that these patient population estimates are conservative.

Current Treatment Landscape and Limitations

Currently there is no treatment for FSHD, and there are no therapies to treat the underlying cause of FSHD. Current approaches are focused on support for activities of daily living and mobility, improved functioning and lowering the risk of complications. They include physical therapy, exercise, pain management and orthopedic interventions.

Our Solution

Del-brax consists of our proprietary mAb that is designed to bind to TfR1 conjugated with an siRNA targeted to DUX4 mRNA to be administered as an intravenous infusion. We believe that data shown with del-brax to date supports our belief that infrequent administration of del-brax can target the root cause of FSHD in relevant muscle tissues.

We believe that the following specific characteristics of del-brax position it to have advantages over historical and current efforts to develop an effective therapy for people with FSHD:

- *Addresses the underlying cause of the disease*—del-brax is designed to reduce the expression of the DUX4 mRNA, thereby reducing the expression of the DUX4 protein resulting in reduced expression of the downstream genes that are believed to cause FSHD. We believe these downstream genes can be used as biomarkers to assess the disease state and therapeutic activity.
- *Efficient delivery of drug substance to diseased cells*— The TfR1 antibody component of the AOC is designed to facilitate efficient delivery to skeletal and cardiac muscle cells, an advantage over other companies' previous unsuccessful efforts to deliver an unconjugated oligonucleotide into muscle cells.

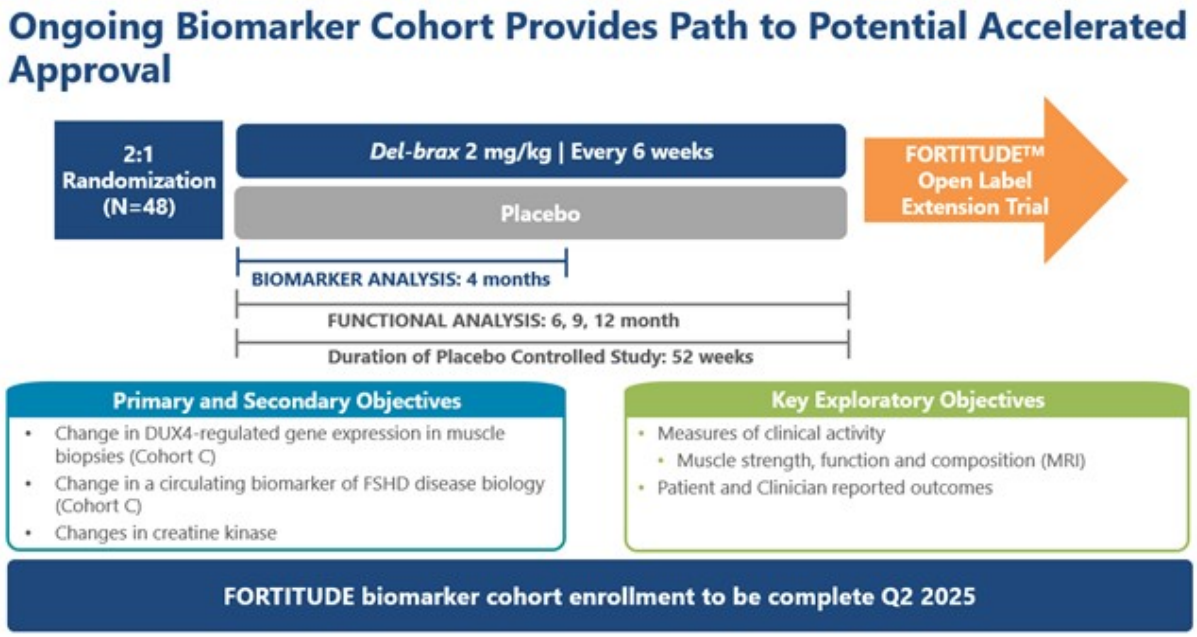
Once inside the muscle cells, the siRNA component of del-brax, siDUX4, acts to reduce levels of DUX4 mRNA.

- *Reproducible and scalable therapeutic*—As with all our AOCs, del-brax is readily synthesized using well-established and scalable methods for manufacturing mAbs and oligonucleotides.

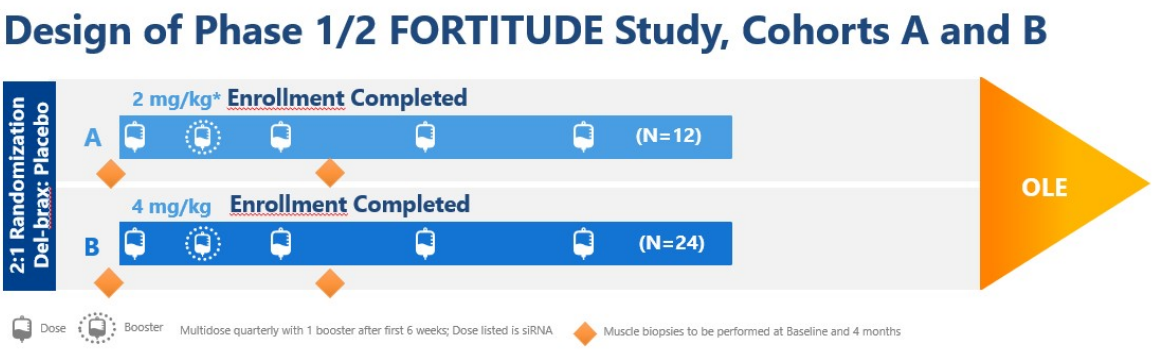
Phase 1/2 FORTITUDE Clinical Trial

Del-brax is currently being studied in the Phase 1/2 FORTITUDE trial in adult and adolescent participants with FSHD. The FORTITUDE trial is a randomized, placebo-controlled, double-blind clinical trial designed to evaluate single and multiple doses of del-brax in approximately 100 participants with FSHD. The study is ongoing with dose escalation cohorts A and B fully enrolled and the biomarker cohort currently enrolling participants. The FORTITUDE study will evaluate the safety, tolerability, pharmacokinetics, and pharmacodynamics of del-brax administered intravenously. Activity of del-brax will be assessed using key biomarkers, including DUX4-regulated muscle and circulating biomarkers and magnetic resonance imaging (MRI) measures of muscle volume and composition. Though the Phase 1/2 trial is not statistically powered to assess functional benefit, it will explore the clinical activity of del-brax including measures of mobility and muscle strength as well as patient reported outcomes and quality of life measures. Participants will have the option to enroll in FORTITUDE-OLE™, an open-label extension study, once their participation in the FORTITUDE study is complete. As of January 2025, all 39 patients enrolled in FORTITUDE cohorts A and B to date remain enrolled in FORTITUDE or FORTITUDE-OLE.

In October 2024, we announced the initiation of the biomarker cohort in the FORTITUDE trial. The biomarker cohort will assess the impact of del-brax 2 mg/kg every six weeks in people living with FSHD, ages 16-70. The primary endpoints of the study are changes in DUX4 regulated gene expression and DUX4 regulated circulating biomarker. Enrollment is expected to be completed in the second quarter of 2025. In addition, enrollment of the FORTITUDE-OLE is ongoing.



The majority of sites participating in the FORTITUDE trial are part of the FSHD clinical trial research network, or FSHD CTRN. We are partnering with the FSHD CTRN on the ongoing natural history study called Motor Outcomes to Validate Evaluations in FSHD or MOVE FSHD. We are sponsoring the MOVE Plus, or MOVE+, sub-study which is enrolling approximately 100 participants in the US. The goal of MOVE+ is to enhance the community's understanding of how to utilize whole-body MRI and other tools to identify specific biomarkers for FSHD that can accelerate and support future clinical trial design.



In June 2024, we reported positive initial 2 mg/kg del-brax data from the Phase 1/2 FORTITUDE trial which demonstrated remarkable and consistent reductions of greater than 50% in DUX4 regulated genes, trends of functional improvement, and favorable safety and tolerability in people living with FSHD.

Additionally, this data demonstrated:

- Greater than 50% mean reductions in DUX4 regulated genes across multiple panels for DUX4 regulated gene expression in muscle.
- All participants treated with del-brax showed reductions greater than 20% in DUX4 regulated genes.
- Mean reductions of 25% or greater in novel circulating biomarker and creatine kinase.
- Trends of functional improvements including increased strength in upper and lower limb muscles, and muscle function as measured by reachable workspace (RWS) compared to placebo and the ReSolve natural history study.
- Trends of improvement in patient and clinician reported outcomes.
- Favorable safety and tolerability with all adverse events (AEs) mild or moderate, no serious adverse events and no discontinuations.

In January 2025 we announced that we anticipate reaching regulatory alignment on a global Phase 3 trial design and alignment on a potential accelerated approval path for the ongoing FORTITUDE biomarker cohort in the second quarter of 2025. In addition, we announced that the presentation of topline data from the FORTITUDE trial and initiation of a global, potentially registrational trial in FSHD are also anticipated in the second quarter of 2025.

Del-zota for the Treatment of DMD44

Del-zota is currently being studied for the treatment of people living with DMD44 and is the first of multiple AOCs we are developing for DMD. Del-zota is designed to deliver PMO to skeletal muscle and heart tissue to specifically skip exon 44 of dystrophin mRNA to enable production of near full-length dystrophin. Del-zota is currently in Phase 2 development as part of the EXPLORE44-OLE study in people living with DMD44. The FDA and European Commission granted Orphan designation for del-zota. The FDA has granted del-zota Rare Pediatric Disease designation and Fast Track designation.

Disease Overview

The dystrophin protein maintains the integrity of muscle fibers and acts as a shock absorber through its role as the foundation of a group of proteins that connects the inner and outer elements of muscle cells. DMD causes a lack of functional dystrophin that leads to stress and tears of muscle cell membranes, resulting in muscle cell death and the progressive loss of muscle function. People living with DMD suffer from progressive muscle weakness that typically starts at a very young age. Over time, people with DMD will develop problems walking and breathing, and eventually, the heart and respiratory muscles will stop working. Creatine kinase, or CK, levels are often used as a serum measure of acute muscle damage and tracked in DMD patients over time to assess the potential benefit of treatments in development. Those living with the condition often require special aid and assistance throughout their lives and have significantly shortened life expectancy. While there are treatments approved to treat people with DMD, there remains a very high unmet need. DMD is a

monogenic, X-linked, recessive disease that primarily affects males, with one in 3,500 to 5,000 boys born worldwide having DMD.

Our Duchenne Muscular Dystrophy (DMD) Programs

We are developing AOCs to treat the underlying cause of DMD and restore dystrophin levels. The oligonucleotides in our AOCs are designed to promote the skipping of specific exons to allow the production of near full-length dystrophin protein. Our most advanced DMD program, del-zota, is designed to treat people with mutations amenable to Exon 44 skipping (DMD44). Del-zota is in clinical development in the Phase 2 EXPLORE44-OLE study. Additionally, our ongoing preclinical development programs target additional mutations that are amenable to exon-skipping, including Exon 45.

Current Treatment Landscape and Limitations

Currently people with DMD are treated with corticosteroids to manage the inflammatory component of the disease. There is currently one approved gene therapy for certain DMD patients. Additionally, there are currently three approved unconjugated PMO-based oligonucleotide therapies, each addressing a specific mutation. These drugs require weekly intravenous infusions and have demonstrated mean increases in dystrophin of 1 to 6% in clinical trials. The FDA-approved labels for these drugs state that a clinical benefit has not yet been established and continued approval may be contingent upon the verification of such clinical benefit in confirmatory clinical trials. Additional approaches currently in clinical development include peptide-conjugated PMOs, or PPMOs, and other gene therapies. While there are therapies approved and multiple programs in clinical development for other exons, there are no exon-skipping therapies approved targeting Exon 44.

Our Solution

Our development efforts in DMD are focused on AOCs based on PMOs that can induce exon skipping for Exon 44 and additional exons, including Exon 45, conjugated to our proprietary mAb targeting TfR1. Del-zota is our lead program in development for DMD and targets Exon 44. Exon skipping produces a near full-length dystrophin protein which is believed to have better functional benefit than the significantly shorter version of dystrophin delivered via gene therapy. We believe that our AOCs have the potential to increase the production of dystrophin in people with DMD for two reasons. First, based on recent advances in the understanding of the splicing process and placement of skipping agents on pre-mRNA described in published literature, we have screened for and identified PMOs with optimized skipping activity. Second, the mAb targeting TfR1 allows for more efficient delivery to muscle cells, therefore allowing for better uptake of the PMO. In preclinical studies, we also observed that our TfR1-based AOCs induced exon skipping in cardiac muscle, which we believe may address some of the cardiomyopathies in people with DMD, a key complication of the disease. Based on their mechanism of action, we believe that our AOCs could have utility in several additional DMD mutations.

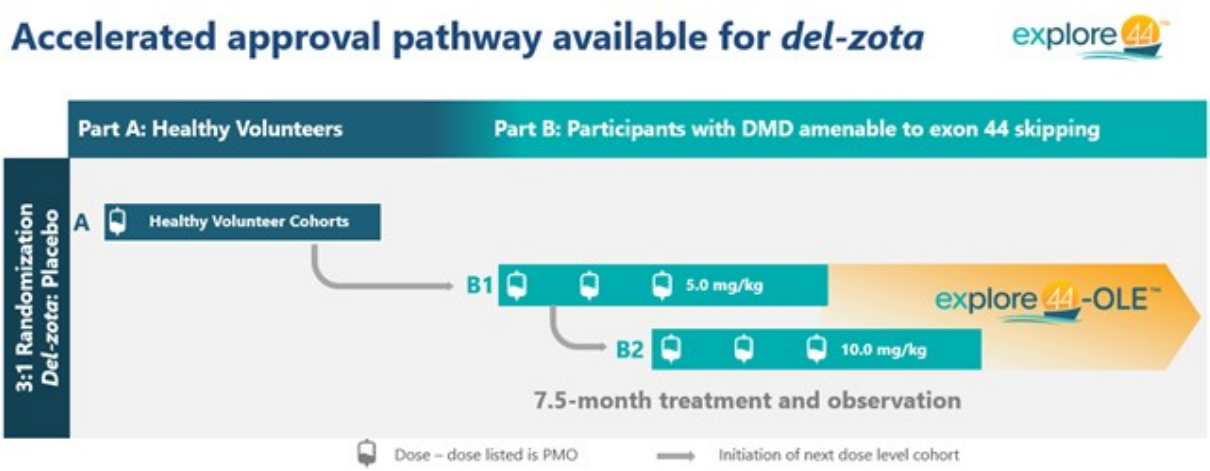
Phase 1/2 EXPLORE44 Clinical Trial and EXPLORE44-OLE Study

In August 2024, we reported initial data from the 5 mg/kg cohort of our EXPLORE44 trial in people living with DMD44. These data demonstrated consistent delivery of PMO in skeletal muscle, an increase in the mean dystrophin production of 25% of normal and a mean increase of 37% in exon 44 skipping. In addition, del-zota showed greater than 80% reduction of creatine kinase compared to baseline in people living with DMD44. Additional data presented in early 2025 from the EXPLORE44 and EXPLORE44-OLE™ studies demonstrated significant and sustained reductions in CK in the 5 mg/kg cohort. Placebo-treated patients who continued into the EXPLORE44-OLE study showed a rapid decrease in CK after beginning treatment with del-zota.

The initial assessment from the randomized, double-blind, placebo-controlled EXPLORE44 trial assessed the safety and tolerability for 26 participants across two dose levels (5 mg/kg and 10 mg/kg). Del-zota demonstrated favorable safety and tolerability, with most treatment emergent AEs mild or moderate in participants with DMD44. Two participants discontinued from the study due to treatment emergent adverse events: one due to a serious adverse event of anaphylaxis which fully resolved, and one due to moderate infusion related reaction. For the 5 mg/kg cohort, participants received three doses of 5 mg/kg of del-zota, or placebo, every six weeks.

Enrollment is now complete for the EXPLORE44 study. Participants in the EXPLORE44 trial had the option to enroll in the EXPLORE44-OLE for del-zota. In addition, we announced we were enrolling additional participants in the EXPLORE44-OLE study to support a BLA submission anticipated at year-end 2025.

Enrollment in the EXPLORE44-OLE study is now complete. We also announced plans to advance additional exon-skipping candidates from our DMD franchise. Exon 45 is currently in IND-enabling studies for the treatment of people living with DMD mutations amendable to exon 45 skipping (DMD45).



In January 2025, we announced that the FDA confirmed an accelerated approval path is available for del-zota and the clinical data package from the EXPLORE44 program could support a BLA filing. Avidity is now planning a potential BLA submission anticipated at year-end 2025. We also announced that we will be presenting topline data from the EXPLORE44 trial in the first quarter of 2025, and topline data from the ongoing EXPLORE44-OLE study in the fourth quarter of 2025.

Our Discovery Programs

Opportunities in Additional Neuromuscular Diseases, Cardiology and Immunology

We are committed to the advancement and expansion of our pipeline with multiple research and development candidates to treat conditions in skeletal muscle, cardiology and immunology as part of our internal discovery efforts and our collaborations with Eli Lilly and Company, or Lilly, and Bristol-Myers Squibb Company, or BMS. In November 2024, we announced we had expanded beyond rare neuromuscular disorders and opened up a new therapeutic field, precision cardiology, to address the root cause of genetic diseases of the heart. We are advancing our first two wholly-owned precision cardiology development candidates targeting rare genetic cardiomyopathies: AOC 1086 targeting PLN (phospholamban) cardiomyopathy and AOC 1072 targeting PRKAG2 (Protein Kinase AMP-activated non-catalytic subunit Gamma 2) syndrome. All of the preclinical programs have been engineered using our AOC platform technology.

We are collaborating with Lilly for the discovery, development and commercialization of AOCs directed to up to six selected mRNA targets in immunology and other select indications outside of muscle. Through our research collaboration with BMS and our internal discovery efforts, our development activities target multiple cardiac-specific indications.

We have multiple early stage research programs ongoing that look at other indications as well as new receptor and antibody pairs to target additional diseases, tissues and cell types with AOCs.

Manufacturing

We do not own or operate manufacturing facilities. We currently rely on third-party manufacturers and suppliers for the antibodies, oligonucleotides and linkers used to make our AOCs, and we expect to continue to do so to meet our preclinical, clinical and commercial activities. Our third-party manufacturers are required to manufacture our product candidates under current Good Manufacturing Practice, or cGMP, requirements and other applicable laws and regulations. We believe there are multiple sources for all of the materials required for the manufacture of our product candidates to supply our clinical trials and anticipated commercial requirements.

Competition

The biotechnology and biopharmaceutical industries are characterized by rapid technological advancement, significant competition and an emphasis on intellectual property. We face potential competition from many different sources, including major pharmaceutical, specialty pharmaceutical and biotechnology

companies, academic institutions, governmental agencies, and public and private research institutions. Any product candidates that we successfully develop and commercialize will compete with current therapies and new therapies that may become available in the future.

There are currently no approved therapies to treat the underlying cause of DM1. Products currently in development to treat DM1 include: tideglusib, a GSK3-ß inhibitor in late-stage clinical development by AMO Pharma, Ltd. for the congenital phenotype of DM1; DYNE-101, an antibody fragment, or Fab, linked antisense-oligonucleotide (ASO) that is being evaluated in a Phase 1/2 clinical trial by Dyne Therapeutics, Inc.; PGN-EDODM1, a peptide conjugated ASO by PepGen Inc. being evaluated in a Phase 2 trial expected to initiate by in 2025; VX-670, an EEV-conjugated PMO developed by Vertex Pharmaceuticals, Inc. in collaboration with Entrada Therapeutics, Inc. being evaluated outside the US in a Phase 1/2 clinical trial; and gene editing and RNA targeting small molecule treatments in preclinical development by various companies. There is a growing number of companies in preclinical development pursuing different paths to treat DM1 and we expect that the space will continue to evolve as additional investigational therapies advance.

There are currently no approved therapies to treat the underlying cause of FSHD. Products currently in development to treat FSHD include: RO7204239, a monoclonal antibody against latent myostatin, which is currently being evaluated in a Phase 2 clinical trial by F. Hoffmann-La Roche AG; ARO-DUX4, an investigational RNAi therapeutic by Arrowhead Pharmaceuticals which was out-licensed in November 2024 to Sarepta Therapeutics, Inc., is currently being evaluated outside the U.S. in a Phase 1/2a trial. There is a growing number of companies in preclinical development pursuing different paths to treat FSHD, including, Dyne Therapeutics, Inc., miRecule, Inc./Sanofi S.A., Kate Therapeutics Inc./Novartis, Armatus Bio, Inc./Solid Biosciences Inc., and Celularity Inc. We expect that the space will continue to evolve as additional investigational therapies advance.

Currently, people with DMD are treated with corticosteroids to manage the inflammatory component of the disease. Deflazacort is an FDA approved corticosteroid marketed by PTC Therapeutics, Inc. Agamree is another approved corticosteroid marketed by Catalyst Pharmaceuticals, Inc. Duvyzat is an HDAC inhibitor from Italfarmaco S.p.A. Additionally, there are three FDA approved exon skipping drugs utilizing unconjugated PMOs marketed by Sarepta Therapeutics, Inc.: EXONDYS 51 (Eteplirsen) for people with DMD amenable to skipping Exon 51; VYONDYS 53 (golodirsen) for people with DMD amenable to Exon 53 skipping; and AMONDYS 45 (casimersen) for people with DMD amenable to skipping Exon 45. There is an FDA approved exon skipping drug marketed by Nippon Shinyaku Co., Inc.: VILTEPSO (viltolarsen), an unconjugated PMO approved for people with DMD amenable to Exon 53 skipping. We are developing treatments for DMD that target dystrophin mechanisms. Other companies pursuing a similar mechanism include Dyne Therapeutics with DYNE-251, a PMO conjugated to a Fab currently being evaluated in a Phase 1/2 clinical trial for patients amendable to Exon 51 skipping; Wave Life Sciences, Ltd. with WVE-N531, an unconjugated PN-modified exon-skipping oligonucleotide currently being evaluated in a Phase 1/2 clinical trial for patients amenable to Exon 53 skipping; PepGen with PGN-EDO51, a peptide-conjugated oligonucleotide for patients amenable to Exon 51 skipping being evaluated in a Phase 2 clinical trial; and PTC Therapeutics with ataluren, a small molecule targeting nonsense mutations in a Phase 3 clinical trial. While there are multiple programs in development for people with DMD amenable to skipping Exon 51 or 53, there are very few targeting Exon 44. NS Pharma, Inc. is running a Phase 2 trial with NS-089/NCNP-02 in people amenable to Exon 44 skipping in the US. In December 2022, Entrada's program ENTR-601-44 was placed on a clinical hold prior to initiating Phase 1 development but has been evaluated in a Phase 1 study outside of the U.S. Companies are also approaching DMD with viral-vector based gene therapy programs that are a one-time treatment versus oligonucleotide-based exon skipping chronic treatments. There is one approved gene therapy for the delivery of microdystrophin mRNA, marketed as ELEVIDYS by Sarepta Therapeutics, Inc., fully approved for ambulatory DMD patients above the age of three and has received accelerated approval for non-ambulatory DMD patients above the age of three. Several other companies are developing microdystrophin-based gene therapies, including REGENEXBIO Inc. (RGX-202), Solid Biosciences Inc. (SGT-003), and Genethon (GNT-004). We are also aware of several companies targeting non-dystrophin mechanisms for the treatment of DMD. There is a growing number of companies in pursuing different paths to treat DMD, including Capricor Therapeutics, Inc., and we expect that the space will continue to evolve as additional candidates advance.

We will also compete more generally with other companies developing alternative scientific and technological approaches, including other companies working to develop conjugates with oligonucleotides for extra-hepatic delivery, including Alnylam Pharmaceuticals, Inc., Aro Biotherapeutics Company, Dyne Therapeutics, Ionis Pharmaceuticals, Inc., Sarepta Therapeutics, PepGen, PeptiDream Inc. and Bicycle Therapeutics plc, as well as gene therapy and CRISPR approaches.

Many of our competitors, either alone or with strategic partners, have substantially greater financial, technical and human resources than we do. Accordingly, our competitors may be more successful than us in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining approval for treatments and achieving widespread market acceptance, which could render our product candidates, if approved, obsolete or non-competitive. Merger and acquisition activity in the biotechnology and biopharmaceutical industries may result in even more resources being concentrated among a smaller number of our competitors. These companies also compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and patient registration for clinical trials and acquiring technologies complementary to, or necessary for, our programs. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. Our commercial opportunity could be substantially limited if our competitors develop and commercialize products that are more effective, safer, less toxic, more convenient or less expensive than our comparable products. In geographies that are critical to our commercial success, competitors may also obtain regulatory approvals before us, resulting in our competitors building a strong market position in advance of the entry of our products, if any. In addition, our ability to compete may be affected in many cases by insurers or other third-party payors seeking to encourage the use of other drugs. The key competitive factors affecting the success of our programs are likely to be efficacy, safety, convenience, level of promotional activity, intellectual property protection and availability of reimbursement.

Intellectual Property

We strive to protect our product candidates and our AOC product platform through a variety of methods, including seeking and maintaining patents intended to cover our AOC product platform, our products and compositions, their methods of use and processes for their manufacture, and any other inventions that are commercially important to the development of our business. We also rely on know-how, continuing technological innovation and in-licensing opportunities to develop and maintain our proprietary position. We also rely on trade secrets and know-how that may be important to the development of our business. We seek to obtain domestic and international patent protection and endeavor to promptly file patent applications for new commercially valuable inventions to expand our intellectual property portfolio.

We believe that we have a significant global intellectual property position and substantial know-how relating to our AOC product candidates and our technology platform. As of December 31, 2024, the intellectual property portfolio consisted of 40 issued U.S. patents and 30 pending U.S. patent applications that we own or co-own. Collectively, these patent rights relate to various aspects of our AOC product candidates and technology platform. In addition, we have an exclusive license to certain patent rights from the University of Alberta and Fred Hutchinson Cancer Center. In addition to filing and prosecuting patent applications in the United States, we often file counterpart patent applications in additional countries and jurisdictions where we believe such foreign filing is likely to be beneficial, including Australia, Brazil, Canada, China, Europe, Hong Kong, Israel, Japan, Mexico, Singapore, New Zealand, Taiwan, and South Korea. We also file patent applications pursuant to the Patent Cooperation Treaty, or PCT. Our PCT patent applications are in the first phase of the PCT process, which is the international phase, in which patent protection is pending under a single patent application filed with the United States Patent and Trademark Office, or USPTO, as a contracting state of the PCT. These PCT patent applications have not yet entered the second phase of the PCT process, which is the national and regional phase, in which rights are continued by filing necessary documents with the patent offices of separate contracting states of the PCT. The national phase of the PCT patent application process occurs 30 months after the earliest priority date of the PCT patent application.

We continually assess and refine our intellectual property strategy as we develop new product candidates and platform technologies. To that end, we are prepared to file additional patent applications in any appropriate fields if our intellectual property strategy requires such filings, or where we seek to adapt to competition or seize business opportunities. Further, we are prepared to file patent applications, as we consider appropriate under the circumstances, relating to the new technologies that we develop.

We cannot be sure that patents will be granted with respect to any of our pending patent applications or with respect to any patent applications we may own or license in the future, nor can we be sure that any of our existing patents or any patents we may own or license in the future will be useful in protecting our technology. Please see “Risk Factors—Risks Related to Our Intellectual Property” for additional information on the risks associated with our intellectual property strategy and portfolio.

Intellectual Property Relating to Del-Desiran (AOC 1001)

With regard to del-desiran, as of December 31, 2024, we owned 5 issued U.S. patents, 3 pending U.S. patent applications, 7 granted foreign patents, and 23 pending patent applications in foreign jurisdictions, including Australia, Brazil, Canada, China, Europe, Hong Kong, Israel, Japan, Mexico, Singapore, Taiwan, New Zealand, and South Korea. These patent rights relate to del-desiran composition of matter, formulations containing del-desiran, methods of manufacturing, and methods of treating diseases, using del-desiran. Any patents issued from these applications are expected to expire in 2038-2041; however, a patent term extension may be available.

Intellectual Property Relating to Del-Brax (AOC 1020) and Other FSHD AOC Product Candidates

With regard to del-brax and other FSHD AOC product candidates, as of December 31, 2024, we owned or co-owned 8 issued U.S. patents, 5 pending U.S. patent applications, 1 granted foreign patent, 24 pending patent applications in foreign jurisdictions including Australia, Brazil, Canada, China, Europe, Hong Kong, Israel, Japan, Mexico, Singapore, Taiwan, New Zealand, and South Korea. These patent rights relate to the del-brax and other FSHD AOC composition of matter, formulations containing del-brax and other the FSHD AOC, methods of manufacturing, and methods of treating diseases, using our FSHD AOC. Any patents issued from these applications are expected to expire in 2041-2042; however, a patent term extension may be available. We have one patent family licensed from Fred Hutchinson Cancer Center, which includes one issued U.S. patent, one pending U.S. patent application, one granted foreign patent, and one pending application in Europe.

Intellectual Property Relating to Del-Zota (AOC 1044) and Other DMD AOC Product Candidates

With regard to del-zota and other DMD AOC product candidates, as of December 31, 2024, we owned 6 issued U.S. patents, 8 pending U.S. patent applications, 3 granted foreign patents, 39 pending patent applications in various countries and regions including Australia, Canada, China, Europe, Hong Kong, Israel, Japan, Mexico, Singapore, Taiwan, New Zealand, and South Korea, and one pending patent application filed pursuant to the PCT. These patent rights relate to del-zota and other DMD AOCs composition of matter, formulations containing del-zota and other DMD AOCs, methods of manufacturing, and methods of treating diseases, using del-zota and other DMD AOCs. Any patents issued from these applications are expected to expire in 2038-2044; however, a patent term extension may be available.

Intellectual Property Relating to AOC 1072 and Other PRKAG2 AOC Product Candidates

With regard to AOC 1072 and other PRKAG2 AOC product candidates, as of December 31, 2024, we owned two pending U.S. patent applications, and one pending patent application filed pursuant to the PCT. These patent rights relate to the AOC 1072 and other PRKAG2 AOC composition of matter, formulations containing AOC 1072 and other the PRKAG2 AOC, methods of manufacturing, and methods of treating diseases, using our PRKAG2 AOC. Any patents issued from these applications are expected to expire in 2044-2045; however, a patent term extension may be available.

Intellectual Property Relating to AOC 1086 and Other PLN AOC Product Candidates

With regard to AOC 1086 and other PLN AOC product candidates, as of December 31, 2024, we owned one pending U.S. patent applications, and one pending patent application filed pursuant to the PCT. These patent rights relate to the AOC 1086 and other PLN AOC composition of matter, formulations containing AOC 1086 and other the PLN AOC, methods of manufacturing, and methods of treating diseases, using our PLN AOC. Any patents issued from these applications are expected to expire in 2044; however, a patent term extension may be available.

Intellectual Property Relating to Our AOC Product Platform

As of December 31, 2024, we owned 29 families of U.S. and foreign patents and patent applications generally covering our AOC product platform. These families include 37 issued U.S. patents, 26 granted foreign patents, 30 pending U.S. patent applications, 4 pending PCT patent applications and 133 pending foreign patent applications in Europe, Australia, Brazil, Canada, China, Israel, Hong Kong, Japan, South Korea, Mexico, Singapore, New Zealand, and Taiwan, relating to key aspects and components of our AOC product platform systems. Our patent applications contain claims covering (i) proprietary antibodies; (ii) proprietary oligonucleotide chemical structures; (iii) proprietary oligonucleotide sequences; (iv) proprietary AOC structures; and (v) methods for manufacturing and using our AOC technologies. Some of these AOC platform cases

generically cover our various product candidates. The issued U.S. patents and any U.S. patents issuing from our pending U.S. patent applications are expected to expire between 2037 and 2045. We have one patent family licensed from the University of Alberta, which includes 2 issued U.S. patent, one pending U.S. patent application, 4 granted foreign patents, and six pending applications in Europe, Canada, China, Japan, South Korea and Hong Kong. We also have one patent family licensed from GenAhead Bio Inc, which includes 2 pending U.S. applications, 4 granted foreign patents, and 3 pending applications in Europe, China, and Japan.

The term of individual patents depends upon the laws of the countries in which they are obtained. In most countries in which we file, the patent term is 20 years from the earliest date of filing of a non-provisional patent application. However, the term of United States patents may be extended for delays incurred due to compliance with the FDA requirements or by delays encountered during prosecution that are caused by the USPTO. For example, for drugs that are regulated by the FDA under the Hatch-Waxman Act, it is permitted to extend the term of a patent that covers such drug for up to five years beyond the normal expiration date of the patent. In the future, if and when our biopharmaceutical product candidates receive FDA approval, we expect to apply for patent term extensions on patents covering those product candidates. We intend to seek patent term extensions to any of our issued patents in any jurisdiction where these are available; however, there is no guarantee that the applicable authorities, including the USPTO and FDA, will agree with our assessment of whether such extensions should be granted, and even if granted, the length of such extensions. If patents are issued on our pending patent applications, the resulting patents are projected to expire on dates ranging from 2037 to 2045, unless we receive patent term extension or patent term adjustment, or both.

However, the actual protection afforded by a patent varies on a product-by-product basis, from country-to-country, and depends upon many factors, including the type of patent, the scope of its coverage, the availability of regulatory-related extensions, the availability of legal remedies in a particular country and the validity and enforceability of the patent.

The patent positions of companies like ours are generally uncertain and involve complex legal and factual questions. No consistent policy regarding the scope of claims allowable in patents in the field of oligonucleotide therapy has emerged in the United States. The patent situation outside of the United States is even more uncertain. Changes in the patent laws and rules, either by legislation, judicial decisions, or regulatory interpretation in the United States and other countries may diminish our ability to protect our inventions and enforce our intellectual property rights, and more generally could affect the value of our intellectual property. In particular, our ability to stop third parties from making, using, selling, offering to sell, importing or otherwise commercializing any of our patented inventions, either directly or indirectly, will depend in part on our success in obtaining, defending and enforcing patent claims that cover our technology, inventions, and improvements. With respect to both licensed and company-owned intellectual property, we cannot be sure that patents will be granted with respect to any of our pending patent applications or with respect to any patent applications filed by us in the future, nor can we be sure that any of our existing patents or any patents that may be granted to us in the future will be commercially useful in protecting our platform and product candidates and the methods used to manufacture them. Moreover, our issued patents and those that may issue in the future may not guarantee us the right to practice our technology in relation to the commercialization of our platform's product candidates. The area of patent and other intellectual property rights in biotechnology is an evolving one with many risks and uncertainties, and third parties may have blocking patents that could be used to prevent us from commercializing our AOC product platform and product candidates and practicing our proprietary technology. Our issued patents and those that may issue in the future may be challenged, narrowed, circumvented or invalidated, which could limit our ability to stop competitors from marketing related platforms or product candidates or limit the length of the term of patent protection that we may have for our AOC product platform and product candidates. In addition, the rights granted under any issued patents may not provide us with protection or competitive advantages against competitors with similar technology. Furthermore, our competitors may independently develop similar technologies. For these reasons, we may have competition for our AOC product platform and product candidates. Moreover, because of the extensive time required for development, testing and regulatory review of a potential product, it is possible that before any product candidate can be commercialized, any related patent may expire or remain in force for only a short period following commercialization, thereby reducing any advantage of the patent. For this and other risks related to our proprietary technology, inventions, improvements, platforms and product candidates, please see the section entitled "Risk Factors—Risks Related to Our Intellectual Property."

We have filed trademark applications for registration of the Avidity, Avidity Bioscience logo, del-brax, del-desiran, del-zota, EXPLORE44, EXPLORE44 logo, EXPLORE44-OLE logo, FORTITUDE, FORTITUDE

logo, HARBOR, HARBOR logo mark, MARINA, MARINA logo, MARINA-OLE, and MARINA-OLE logo marks with the United States Patent and Trademark Office and certain foreign trademark offices.

We also rely on trade secret protection for our confidential and proprietary information. Although we take steps to protect our confidential and proprietary information as trade secrets, including through contractual means with our employees, consultants, outside scientific collaborators, sponsored researchers and other advisors, third parties may independently develop substantially equivalent proprietary information and techniques or otherwise gain access to our trade secrets or disclose our technology. Thus, we may not be able to meaningfully protect our trade secrets. It is our policy to require our employees, consultants, outside scientific collaborators, sponsored researchers and other advisors to execute confidentiality agreements under 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 during the individual'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 by the individual, and which are related to our current or planned business or research and development or made during normal working hours, on our premises or using our equipment or proprietary information, are our exclusive property. In many cases our confidentiality and other agreements with consultants, outside scientific collaborators, sponsored researchers and other advisors require them to assign or grant us licenses to inventions they invent as a result of the work or services they render under such agreements or grant us an option to negotiate a license to use such inventions. Despite these efforts, we cannot provide any assurances that all such agreements have been duly executed, and any of these parties may breach the agreements and disclose our proprietary information, and we may not be able to obtain adequate remedies for such breaches.

We also seek to preserve the integrity and confidentiality of our proprietary technology and processes by maintaining physical security of our premises and physical and electronic security of our information technology systems. Although we have confidence in these individuals, organizations and systems, agreements or security measures may be breached, and we may not have adequate remedies for any breach. To the extent that our employees, contractors, consultants, collaborators and advisors use intellectual property owned by others in their work for us, disputes may arise as to the rights in relation to the resulting know-how or inventions. For more information, please see the section entitled "Risk Factors—Risks Related to Our Intellectual Property."

Research Collaboration with Bristol Myers Squibb

In November 2023, we entered into (i) a Research Collaboration and License Agreement with BMS, or the BMS Collaboration Agreement, to expand on the research with MyoKardia for up to five targets utilizing our proprietary AOC platform technology and (ii) a Securities Purchase Agreement with BMS, or the BMS Purchase Agreement, for the purchase by BMS in a private placement of 5,075,304 shares of our common stock at a purchase price of $7.8813 per share, for an aggregate purchase price of approximately $40 million. We refer to the BMS Collaboration Agreement and the BMS Purchase Agreement together as the "BMS Agreements." Under the terms of the BMS Agreements, we received approximately $100 million upfront, which includes a $60 million cash payment under the terms of the BMS Collaboration Agreement, and approximately $40 million for the purchase of our common stock under the terms of the BMS Purchase Agreement. We are also eligible to receive up to approximately $1.35 billion in research and development milestone payments, up to approximately $825 million in commercial milestone payments, and tiered royalties from high single digits to low double-digits on net sales. We are responsible for our own research collaboration costs incurred under the agreement, subject to a cumulative spending limit of $40 million. BMS will fund all future clinical development, regulatory and commercialization activities coming from this collaboration.

Research Collaboration with Lilly

In April 2019, we entered into a research collaboration and license agreement, or the Lilly Agreement, with Lilly for the discovery, development and commercialization of antibody-oligonucleotide conjugate products, or Products, in immunology and other select indications on a worldwide basis. Under the Lilly Agreement, the parties will collaborate on preclinical research and discovery activities for Products and Lilly will be responsible for funding the cost of preclinical research and discovery activities of both parties for all Products. Lilly will lead the clinical development, regulatory approval and commercialization of all Products, at Lilly's sole cost.

Under the Lilly Agreement, we granted Lilly an exclusive, worldwide, royalty-bearing license under our technology to research, develop, manufacture, and sell Products directed to up to six mRNA targets. Lilly has the right to sublicense its rights under the Lilly Agreement subject to certain conditions. Lilly granted us a non-exclusive license under certain Lilly technology solely to conduct research under the Lilly Agreement. We retain

the right to use our technology to perform our obligations under the Lilly Agreement and for all purposes not granted to Lilly. We agreed that we will not, ourselves or with a third party, research, develop, manufacture or commercialize or otherwise exploit any compound or product directed against targets subject to the collaboration.

Lilly paid us an upfront license fee of $20.0 million, and we are eligible to receive up to $60.0 million in development milestone payments, up to $140.0 million in regulatory milestone payments and up to $205.0 million in commercialization milestone payments per target. In addition, Lilly is obligated to pay us a tiered royalty ranging from the mid-single to low-double digits on worldwide annual net sales of licensed Products, subject to specified and capped reductions for the market entry of biosimilar products, loss of patent coverage of licensed Products and for payments owed to third parties for additional rights necessary to commercialize licensed Products in the territory. Lilly's royalty obligations and the Lilly Agreement will expire on a licensed Product-by-licensed Product and country-by-country basis on the later of ten years from the date of the first commercial sale or when there is no longer a valid patent claim covering such licensed Product in such country.

Concurrently with the Lilly Agreement, we issued a convertible promissory note to Lilly, or the Lilly Note, and received cash proceeds of $15.0 million. The Lilly Note accrued simple interest of 8.0% per annum and converted into shares of our Series C convertible preferred stock in November 2019.

Research Collaboration with MyoKardia, a wholly-owned subsidiary of BMS

In December 2020, we entered into a research collaboration, or the MyoKardia Agreement, with MyoKardia, a wholly-owned subsidiary of BMS, to demonstrate the potential utility of AOCs in cardiac tissue by leveraging MyoKardia's genetic cardiomyopathy platform including, among other aspects, its novel target discovery engine and proprietary cardiac disease models. Under the terms of the MyoKardia Agreement, in July 2023, BMS as the successor in interest to MyoKardia, exercised its option to negotiate and enter into a license agreement covering AOCs that modulate the function of cardiovascular targets. The research collaboration with MyoKardia was terminated in November 2023 upon execution of the BMS Collaboration Agreement.

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 products such as those we are developing. We, along with third-party contractors, will be required to navigate the various preclinical, clinical and commercial approval requirements of the governing regulatory agencies of the countries in which we wish to conduct studies or seek approval or licensure of our product candidates.

U.S. Biologics Regulation

In the United States, biological products are subject to regulation under the federal Food, Drug and Cosmetic Act, or FDCA, the Public Health Service Act, or PHSA, and other federal, state, and local statutes and regulations. The process required by the FDA before a biological product may be marketed in the United States generally involves the following:

- completion of preclinical laboratory tests, animal studies and formulation studies in accordance with GLP regulations 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, or 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 Practice, or GCP, requirements to establish the safety, purity and potency of the proposed biologic for its intended use;
- submission to the FDA of a biologics license application, or BLA, after completion of all pivotal trials;
- satisfactory completion of an FDA advisory committee review, if applicable;
- a determination by the FDA within 60 days of its receipt of a BLA to file the application for review;

- satisfactory completion of an FDA inspection of the manufacturing facility or facilities at which the biological product is produced to assess compliance with cGMP, requirements to assure that the facilities, methods and controls are adequate to preserve the product's identity, strength, quality and purity, and potential inspection of selected clinical investigation sites and/or the trial sponsor to assess compliance with GCP; and
- FDA review and approval of the BLA to permit commercial marketing of the product for particular indications for use in the United States.

Once a pharmaceutical candidate is identified for development, it enters the preclinical testing stage. Preclinical tests include laboratory evaluations of product chemistry, toxicity and formulation, as well as animal studies, 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 an IND to the FDA. An IND is a request for allowance from the FDA to introduce an investigational drug into interstate commerce and administer the 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, PK, pharmacology, and PD 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 clinical trial on a clinical hold. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. Clinical holds also may be imposed by the FDA at any time before or during clinical trials due to safety concerns about ongoing or proposed clinical trials or non-compliance with specific FDA requirements, and the trials may not begin or continue until the FDA notifies the sponsor that the hold has been lifted or modified to allow such continuation. 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 one or more qualified investigators, generally physicians not employed by or under the trial sponsor's control, in accordance with GCP regulations, which, among other things, 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 as well as 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 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. Some studies also include oversight by an independent group of qualified experts organized by the clinical study sponsor, known as a data safety monitoring board, which provides authorization for whether or not a study may move forward at designated check points based on access to certain data from the study and may halt the clinical trial if it determines that there is an unacceptable safety risk for subjects or other grounds, such as no demonstration of efficacy.

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 volunteers or patients with the target disease or condition. These studies are designed to test for safety, dosage tolerance, absorption, metabolism, distribution and excretion and, if possible, to gain an early indication of its effectiveness.

- ***Phase 2***: The product candidate is administered to a limited patient population with a specified disease or condition to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product for specific targeted diseases and to determine dosage tolerance and appropriate dosage. Multiple Phase 2 trials may be conducted to obtain information prior to beginning larger and more expensive Phase 3 trials.
- ***Phase 3***: The product candidate is administered to an expanded patient population to further evaluate dosage, to provide statistically significant evidence of clinical efficacy, and to further test for safety in an expanded patient population, generally at geographically dispersed clinical study sites. These clinical trials are intended to establish the overall risk-benefit ratio of the product candidate and provide, if appropriate, an adequate basis for product approval and labeling.

Post-approval trials, sometimes referred to as Phase 4 studies, may be conducted after initial marketing approval. These trials are 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 a BLA.

Concurrent with clinical trials, companies usually complete additional animal studies and must also develop additional information about the chemistry and biological characteristics of the product 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.

There are also requirements governing the reporting of ongoing clinical trials and completed trial results to public registries. Sponsors of certain clinical trials of FDA-regulated products are required to register and disclose specified clinical trial information, which is publicly available at www.clinicaltrials.gov. Information related to the product, patient population, phase of investigation, trial sites and investigators and other aspects of the clinical trial is then made public as part of the registration. Sponsors are also obligated to discuss the results of their clinical trials after completion. Disclosure of the results of these trials can be delayed until the new product or new indication being studied has been approved.

BLA Review and Approval Process

Assuming successful completion of all required testing in accordance with all applicable regulatory requirements, the results of product development, including from preclinical and other non-clinical studies and clinical trials, along with descriptions of the manufacturing process, analytical tests conducted on the chemistry of the drug, proposed labeling and other relevant information are submitted to the FDA as part of a BLA requesting approval to market the product for one or more indications. The submission of a BLA is subject to the payment of substantial user fees, unless a waiver or exemption applies.

Within 60 days following submission of the application, the FDA reviews a BLA submitted to determine if it is substantially complete before the FDA accepts it for filing. The FDA may refuse to file any BLA that it deems incomplete or not properly reviewable at the time of submission and may request additional information. In this event, the BLA must be resubmitted with the additional information. Once a BLA has been accepted for filing, the FDA's goal is to review standard applications within ten months after the filing date, or, if the application qualifies for priority review, six months after the FDA accepts the application for filing. In both standard and priority reviews, the review process may also be extended for a three-month period by the FDA in response to new data or other information designated as a major amendment to the application. The FDA reviews a BLA to determine, among other things, whether a product is safe, pure and potent and the facility in which it is manufactured, processed, packed or held meets standards designed to assure the product's continued safety, purity and potency.

The FDA may also convene an advisory committee to provide clinical insight on application review questions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions.

Before approving a BLA, the FDA will inspect the facility or facilities where the product is manufactured. The FDA will not approve an application unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product within

required specifications. Additionally, before approving a BLA, the FDA may inspect one or more clinical trial sites as well as the trial sponsor to assure compliance with GCP requirements.

After the FDA evaluates a BLA, it will issue an approval letter or a Complete Response Letter, or CRL. An approval letter authorizes commercial marketing of the biologic 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 BLA identified by the FDA and may require additional clinical data, including additional clinical trials, or other significant and time-consuming requirements related to clinical trials, nonclinical studies or manufacturing. If a CRL is issued, the sponsor must resubmit the BLA, addressing all of the deficiencies identified in the letter, or withdraw the application. Even if such data and information are submitted, the FDA may decide that the BLA 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 so-called Phase 4 clinical testing to further assess a biological product's safety and effectiveness after BLA 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, or REMS, to assure the safe use of the product. If the FDA concludes a REMS is needed, the sponsor of the BLA must submit a proposed REMS. The FDA will not approve the BLA without an approved REMS, if required, 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. 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, or 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 BLAs 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

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

A product candidate intended to treat a serious or life-threatening disease or condition may also be eligible for Breakthrough Therapy designation to expedite its development and review. A product candidate can receive Breakthrough Therapy designation if preliminary clinical evidence indicates that the product candidate, alone or in combination with one or more other drugs or biologics, may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. The designation includes all of the Fast Track program features, as well

as more intensive FDA interaction and guidance beginning as early as Phase 1 and an organizational commitment to expedite the development and review of the product candidate, including involvement of FDA senior managers.

Any product submitted to the FDA for approval, including a product candidate with a Fast Track designation or Breakthrough Therapy designation, may also be eligible for other types of FDA programs intended to expedite development and review, such as priority review. A product is eligible for priority review if it is designed to treat a serious condition and, if approved, would provide a significant improvement in safety or effectiveness. The FDA will attempt to direct additional resources to the evaluation of an application for the product candidate designated for priority review in an effort to facilitate the review. For original BLAs, priority review designation means the FDA's goal is to take action on the marketing application within six months of the 60-day filing date (as compared to ten months under standard review).

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 receive 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 benefit, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments. As a condition of approval, the FDA will generally require the sponsor of a drug receiving accelerated approval to perform adequate and well-controlled confirmatory clinical trials to verify and describe the anticipated effect on irreversible morbidity or mortality or other clinical benefit, and may require that such studies be underway before granting any accelerated approval. 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. FDA may withdraw approval of a drug or indication approved under accelerated approval on an expedited basis if, for example, the sponsor fails to conduct the required confirmatory trial in a timely manner or if such confirmatory trial fails to verify the predicted clinical benefit of the product.

Fast Track designation, priority review and Breakthrough Therapy designation do not change the standards for approval but may expedite the development or approval process. Even if a product 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.

Rare Pediatric Disease Designation and Priority Review Vouchers

In 2012, Congress authorized the FDA to award priority review vouchers to sponsors of certain rare pediatric disease product applications. This program is designed to encourage development of new drug and biological products for prevention and treatment of certain rare pediatric diseases. Specifically, under this program, a sponsor who receives an approval for a drug or biologic for a "rare pediatric disease" may qualify for a voucher that can be redeemed to receive a priority review of a subsequent marketing application for a different product. The sponsor of a rare pediatric disease drug product receiving a priority review voucher may transfer (including by sale) the voucher to another sponsor. The voucher may be further transferred any number of times before the voucher is used, as long as the sponsor making the transfer has not yet submitted the application. The FDA may also revoke any priority review voucher if the rare pediatric disease drug for which the voucher was awarded is not marketed in the United States within one year following the date of approval.

For purposes of this program, a "rare pediatric disease" is a (a) serious or life-threatening disease in which the serious or life-threatening manifestations primarily affect individuals aged from birth to 18 years; and (b) rare diseases or conditions within the meaning of the Orphan Drug Act. Congress has only authorized the Rare Pediatric Disease Priority Review Voucher program until December 20, 2024. Consequently, sponsors of marketing applications approved after that date will not receive the voucher unless Congress reauthorizes the program. If the program is not reauthorized, if a drug candidate receives Rare Pediatric Disease designation before December 20, 2024, the sponsor of the marketing application for such drug will only be eligible to receive a voucher if the application for the designated drug is approved by the FDA before October 1, 2026.

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 or other labeling claims, are subject to prior FDA review and approval. There also are continuing, annual program fees for any marketed products. Biologic manufacturers and their subcontractors are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with cGMP, which impose certain procedural and documentation requirements. Changes to the manufacturing process are strictly regulated, and, depending on the significance of the change, may require prior FDA approval before being implemented. FDA regulations also require investigation and correction of any deviations from cGMP and impose reporting requirements upon us and any third-party manufacturers that we may decide to use. Accordingly, manufacturers must continue to expend time, money and effort in the area of production and quality control to maintain compliance with cGMP and other aspects of regulatory compliance. The FDA may withdraw approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in revisions to the approved labeling to add new safety information, imposition of post-market studies or clinical 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 license 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.

In addition, the FDA closely regulates the marketing, labeling, advertising and promotion of drug products. A company can make only those claims relating to safety and efficacy, purity and potency that are approved by the FDA and in accordance with the provisions of the approved label. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses. Failure to comply with these requirements can result in, among other things, adverse publicity, warning letters, corrective advertising and potential civil and criminal penalties. Physicians may prescribe legally available products for uses that are not described in the product's labeling and that differ from those tested by the manufacturer and approved by the FDA. Such off-label uses are common across medical specialties. Physicians may believe that such off-label uses are the best treatment for 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.

Orphan Drug Designation and Exclusivity

Under the Orphan Drug Act, the FDA may grant Orphan designation to a drug or biologic intended to treat a rare disease or condition, which is a disease or condition that affects fewer than 200,000 individuals in the United States or, if it affects more than 200,000 individuals in the United States, there is no reasonable expectation that the cost of developing and making a drug product available in the United States for this type of disease or condition will be recovered from sales of the product. Orphan designation must be requested before submitting a BLA. After the FDA grants Orphan designation, the 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 designation subsequently receives the first FDA approval 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 to market the same drug or biologic 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 exclusivity or inability to manufacture the product in sufficient quantities of the Orphan drug to meet the needs of patients with the disease or condition for which the drug was designated. Orphan drug exclusivity does not prevent the FDA from approving a different drug or biologic for the same disease or condition, or the same drug or biologic for a different disease or condition. Among the other benefits of Orphan drug designation are tax credits for certain research and a waiver of the BLA application user fee.

A designated Orphan drug may not receive Orphan drug exclusivity if it is approved for a use that is broader than the 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.

Biosimilars and reference product exclusivity

The Affordable Care Act, signed into law in 2010, includes a subtitle called the Biologics Price Competition and Innovation Act, or BPCIA, which created an abbreviated approval pathway for biological products that are biosimilar to or interchangeable with an FDA-licensed reference biological product.

Biosimilarity, which requires that there be no clinically meaningful differences between the biological product and the reference product in terms of safety, purity, and potency, can be shown through analytical studies, animal studies, and a clinical study or studies. Interchangeability requires that a product is biosimilar to the reference product and the product must demonstrate that it can be expected to produce the same clinical results as the reference product in any given patient and, for products that are administered multiple times to an individual, the biologic and the reference biologic may be alternated or switched after one has been previously administered without increasing safety risks or risks of diminished efficacy relative to exclusive use of the reference biologic.

Under the BPCIA, an application for a biosimilar product may not be submitted to the FDA until four years following the date that the reference product was first licensed by the FDA. In addition, the approval of a biosimilar product may not be made effective by the FDA until 12 years from the date on which the reference product was first licensed. During this 12-year period of exclusivity, another company may still market a competing version of the reference product if the FDA approves a full BLA for the competing product containing that applicant's own preclinical data and data from adequate and well-controlled clinical trials to demonstrate the safety, purity and potency of its product. The BPCIA also created certain exclusivity periods for biosimilars approved as interchangeable products.

A biological product can also obtain pediatric market exclusivity in the United States. Pediatric exclusivity, if granted, adds six months to existing exclusivity periods and patent terms. This six-month exclusivity, which runs from the end of existing exclusivity protection or patent terms, may be granted based on the voluntary completion of a pediatric study in accordance with an FDA-issued "Written Request" for such a study.

U.S. Healthcare Fraud and Abuse Laws and Compliance Requirements

In addition to FDA regulation of pharmaceutical products, U.S. federal and state healthcare laws and regulations restrict business practices in the pharmaceutical industry. These laws may impact, among other things, our current and future business operations, including our clinical research activities, and constrain the business or financial arrangements and relationships with healthcare providers and other parties. These laws include anti-kickback and false claims laws, civil monetary penalties laws, and physician and other healthcare provider payment transparency laws. In addition to the federal laws summarized below, we may also be subject to similar state and local laws and regulations that may apply to business practices, including but not limited to, research, distribution, sales and marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers, or by patients themselves.

The federal Anti-Kickback Statute prohibits, among other things, individuals or entities from knowingly and willfully offering, paying, soliciting or receiving remuneration, directly or indirectly, overtly or covertly, in cash

or in kind to induce or in return for purchasing, leasing, ordering or arranging for or recommending the purchase, lease or order of any item or service reimbursable under Medicare, Medicaid or other federal healthcare programs. A person or entity does not need to have actual knowledge of this statute or specific intent to violate it in order to have committed a violation.

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

The federal civil monetary penalties laws impose civil fines for, among other things, the offering or transfer of remuneration to a Medicare or state healthcare program beneficiary if the person knows or should know it is likely to influence the beneficiary's selection of a particular provider, practitioner, or supplier of services reimbursable by Medicare or a state healthcare program, unless an exception applies.

The federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, created additional federal criminal statutes that prohibit, among other things, knowingly and willfully executing a scheme to defraud any healthcare benefit program, including private third-party payors and knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services. Similar to the U.S. federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation.

The federal Physician Payments Sunshine Act requires certain manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program, with specific exceptions, to report annually to the Centers for Medicare & Medicaid Services, or CMS, information related to payments or other transfers of value made during the previous year to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors), certain other health care providers including, among others, physician assistants and nurse practitioners, and teaching hospitals, and applicable manufacturers and applicable group purchasing organizations to report annually to CMS ownership and investment interests held during the previous year by physicians as defined under statute and their immediate family members.

Similar state and local laws and regulations may also restrict business practices in the pharmaceutical industry, such as state anti-kickback and false claims laws, which may apply to business practices, including but not limited to, research, distribution, sales and marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers, or by patients themselves; state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government, or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state laws and regulations that require drug manufacturers to file reports relating to pricing and marketing information or which require tracking gifts and other remuneration and items of value provided to physicians, other healthcare providers and entities; and state and local laws that require the registration of pharmaceutical sales representatives.

Violation of any of such laws or any other applicable governmental regulations may result in significant criminal, civil and administrative penalties including damages, fines, imprisonment, disgorgement, additional reporting requirements and oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws, contractual damages, reputational harm, diminished profits and future earnings, disgorgement, exclusion from participation in government healthcare programs and the curtailment or restructuring of our operations.

U.S. Coverage and Reimbursement

Significant uncertainty exists as to the coverage and reimbursement status of any product candidate for which we may seek regulatory approval. Sales in the United States will depend, in part, on the availability of sufficient coverage and adequate reimbursement from third-party payors, which include government health programs such as Medicare, Medicaid, TRICARE and the Veterans Health Administration, as well as managed

care organizations and private health insurers. Prices at which we or our customers seek reimbursement for our product candidates can be subject to challenge, reduction or denial by third-party payors. For products administered under the supervision of a physician, obtaining coverage and adequate reimbursement may be particularly difficult because of the higher prices often associated with such drugs.

The process for determining whether a third-party payor will provide coverage for a product is typically separate from the process for setting the reimbursement rate that the payor will pay for the product. In the United States, there is no uniform policy among payors for coverage or reimbursement. Decisions regarding whether to cover a product, the extent of coverage and amount of reimbursement to be provided are made on a plan-by-plan basis. Third-party payors often rely upon Medicare coverage policy and payment limitations in setting their own coverage and reimbursement policies, but also have their own methods and approval processes. Therefore, coverage and reimbursement for products can differ significantly from payor to payor. As a result, the coverage determination process is often a time-consuming and costly process that can require manufacturers to provide scientific and clinical support for the use of a product to each payor separately, with no assurance that coverage and adequate reimbursement will be applied consistently or obtained in the first instance.

Third-party payors are increasingly challenging the price and examining the medical necessity and cost-effectiveness of medical products and services, in addition to their safety and efficacy. 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 that receives approval. Third-party payors may not consider our product candidates to be medically necessary or cost-effective compared to other available therapies, or the rebates required to secure favorable coverage may not yield an adequate margin over cost or may not enable us to maintain price levels sufficient to realize an appropriate return on our investment in drug development. Additionally, 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.

U.S. Healthcare Reform

In the United States, there has been, and continues to be, several 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.

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. For example, in March 2010, the Patient Protection and Affordable Care Act, or the ACA, was passed, which substantially changed the way healthcare is financed by both governmental and private insurers, and significantly affected the pharmaceutical industry. ACA provisions of importance to our product candidates established an annual, nondeductible fee on any entity that manufactures or imports specified branded prescription drugs and biologic agents; extended manufacturers' Medicaid rebate liability to covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations; expanded the entities eligible for enrollment in the 340B program; increased the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program; established a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in and conduct comparative clinical effectiveness research, along with funding for such research; and established a Center for Medicare and Medicaid Innovation at CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug spending.

Since its enactment, there have been judicial, executive 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 will remain in force in its current form.

In addition, other legislative changes have been proposed and adopted since the ACA was enacted. These changes 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 through 2032. 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. In addition, on March

11, 2021, the American Rescue Plan Act of 2021 was signed into law, which eliminated the statutory Medicaid drug rebate cap, as of January 1, 2024. The rebate was previously capped at 100% of a drug's average manufacturer price.

Moreover, there has recently been heightened governmental scrutiny over the manner in which manufacturers set prices for their marketed products, which has resulted in several Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for pharmaceutical products.

Most significantly, in August 2022, President Biden signed the Inflation Reduction Act of 2022, or IRA, into law. This statute marks the most significant action by Congress with respect to the pharmaceutical 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, with prices that can be negotiated subject to a cap; imposes rebates under Medicare Part B and Medicare Part D to penalize price increases that outpace inflation (first due in 2023); redesigns the Medicare Part D benefit (beginning in 2024); and replaces the Part D coverage gap discount program with a new manufacturer discount program (beginning in 2025). CMS has published the negotiated prices for the initial ten drugs, which will first be effective in 2026, and has published the list of the subsequent 15 drugs that will be subject to negotiation. The IRA permits the Secretary of the Department of Health and Human Services (HHS) to implement many of these provisions through guidance, as opposed to regulation, for the initial years. HHS has and will continue to issue and update guidance as these programs are implemented, although the Medicare drug price negotiation program is currently subject to legal challenges. 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. Some states have also enacted legislation creating so-called prescription drug affordability boards, which ultimately may attempt to impose price limits on certain drugs in these states. In addition, regional healthcare authorities and individual hospitals are increasingly using bidding procedures to determine which drugs and suppliers will be included in their healthcare programs Furthermore, there has been increased interest by third party payors and governmental authorities in reference pricing systems and publication of discounts and list prices.

Foreign Regulation

In order to market any product outside of the United States, we would need to comply with numerous and varying regulatory requirements of other countries and jurisdictions regarding quality, safety and efficacy and governing, among other things, clinical trials, marketing authorization, or MA, commercial sales and distribution of our products. Whether or not we obtain FDA approval for a product, we would need to obtain the necessary approvals by the comparable foreign regulatory authorities before we can commence clinical trials or marketing of the product in foreign countries and jurisdictions. Although many of the issues discussed above with respect to the United States apply similarly in the context of the European Union, or EU, the approval process varies between countries and jurisdictions and can involve additional product testing and additional administrative review periods. The time required to obtain approval in other countries and jurisdictions might differ from and be longer than that required to obtain FDA approval. Regulatory approval in one country or jurisdiction does not ensure regulatory approval in another, but a failure or delay in obtaining regulatory approval in one country or jurisdiction may negatively impact the regulatory process in others.

Non-clinical Studies and Clinical Trials

Similarly to the United States, the various phases of non-clinical and clinical research in 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, or 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, or ICH, guidelines on Good Clinical Practices, or 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, or 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 EU Clinical Trials Directive required a separate clinical trial application, or 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 transition period ended on January 31, 2025, and all clinical trials (and related applications) are now fully subject to the provisions of the CTR.

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

Marketing Authorization

To market a medicinal product in the EU, we must obtain separate regulatory approvals. More concretely, in the EU, medicinal product candidates can only be commercialized after obtaining a MA. To obtain regulatory approval of a product candidate under EU regulatory systems, we must submit a MA application, or 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, or CHMP, of the EMA and are valid throughout the entire territory of the EU. The centralized procedure is mandatory for certain types of products, such as (i) biotechnology medicinal products, (ii) designated orphan medicinal products, (iii) advanced therapy medicinal products, and (iv) medicinal products containing a new active substance indicated for the treatment certain diseases, such as AIDS, cancer, neurodegenerative disorders, diabetes, auto-immune 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; and
- "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 EMA is 210 days, excluding clock stops.

Under the above described procedures, before granting 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.

Data and Marketing Exclusivity

In the EU, new products authorized for marketing, or reference products, generally receive eight years of data exclusivity and an additional two years of market exclusivity upon MA. If granted, the data exclusivity period prevents generic or biosimilar applicants from relying on the pre-clinical and clinical trial data contained in the dossier of the reference product when applying for a generic or biosimilar MA in the EU during a period of eight years from the date on which the reference product was first authorized in the EU. The market exclusivity period prevents a successful generic or biosimilar applicant from commercializing its product in the EU until 10 years have elapsed from the initial authorization of the reference product in the EU. The 10-year market exclusivity period can be extended to a maximum of 11 years if, during the first eight years of those 10 years, the MA holder obtains an authorization for one or more new therapeutic indications which, during the scientific evaluation prior to their authorization, are held to bring a significant clinical benefit in comparison with existing therapies. However, there is no guarantee that a product will be considered by the EU's regulatory authorities to be a new chemical or biological entity, and products may not qualify for data exclusivity.

There is a special regime for biosimilars, or biological medicinal products that are similar to a reference medicinal product but that do not meet the definition of a generic medicinal product, for example, because of differences in raw materials or manufacturing processes. For such products, the results of appropriate preclinical or clinical trials must be provided, and guidelines from the EMA detail the type of quantity of supplementary data to be provided for different types of biological product. There are no such guidelines for complex biological products, such as gene or cell therapy medicinal products, and so it is unlikely that biosimilars of those products will currently be approved in the EU. However, guidance from the EMA states that they will be considered in the future in light of the scientific knowledge and regulatory experience gained at the time.

Orphan Medicinal Products

The criteria for designating an “orphan medicinal product” in the EU are similar in principle to those in the United States. A medicinal product can be designated as an orphan if its sponsor can establish that: (1) the product is intended for the diagnosis, prevention or treatment of a life threatening or chronically debilitating condition (2) either (a) such condition affects not more than five in 10,000 persons in the EU when the application is made, or (b) the product, without the benefits derived from the orphan status, would not generate sufficient return in the EU to justify the necessary investment; and (3) there exists no satisfactory method of diagnosis, prevention or treatment of the condition in question that has been authorized for marketing in the EU or, if such method exists, the product will be of significant benefit to those affected by that condition.

Orphan designation must be requested before submitting an MAA. An EU orphan designation entitles a party to incentives such as reduction of fees or fee waivers, protocol assistance, and access to the centralized procedure. Upon grant of a MA, orphan medicinal products are entitled to ten years of market exclusivity for the approved indication, which means that the competent authorities cannot accept another MAA, or grant a MA, or accept an application to extend a MA for a similar medicinal product for the same indication for a period of ten years. The period of market exclusivity is extended by two years for orphan medicinal products that have also complied with an agreed pediatric investigation plan, or PIP. No extension to any supplementary protection certificate can be granted on the basis of pediatric studies for orphan indications. Orphan designation does not convey any advantage in, or shorten the duration of, the regulatory review and approval process.

The orphan exclusivity period may be reduced to six years if, at the end of the fifth year, it is established that the product no longer meets the criteria for which it received orphan designation, including where it is shown that the product is sufficiently profitable not to justify maintenance of market exclusivity or where the prevalence of the condition has increased above the threshold. Additionally, MA may be granted to a similar product for the same indication at any time if (i) the second applicant can establish that its product, although

similar, is safer, more effective or otherwise clinically superior; (ii) the applicant consents to a second orphan medicinal product application; or (iii) the applicant cannot supply enough orphan medicinal product.

Pediatric Development

In the EU, MAAs for new medicinal products have to include sponsor plans for the results of studies conducted in the pediatric population, in compliance with a pediatric investigation plan, or PIP, agreed with the EMA's Pediatric Committee, or PDCO. The PIP sets out the timing and measures proposed to generate data to support a pediatric indication of the drug for which MA is being sought. The PDCO can grant a deferral of the obligation to implement some or all of the measures of the PIP until there are sufficient data to demonstrate the efficacy and safety of the product in adults. Further, the obligation to provide pediatric clinical trial data can be waived by the PDCO when these data are not needed or appropriate because the product is likely to be ineffective or unsafe in children, the disease or condition for which the product is intended occurs only in adult populations, or when the product does not represent a significant therapeutic benefit over existing treatments for pediatric patients. Once the MA is obtained in all EU member states and study results are included in the product information, even when negative, the product is eligible for six months' supplementary protection certificate extension (if any is in effect at the time of approval) or, in the case of orphan medicinal products, a two year extension of the orphan market exclusivity is granted.

The aforementioned EU rules are generally applicable in the European Economic Area, or 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.

Data Privacy and Security Laws

We are subject to laws and regulations governing data privacy and security, including the protection of health-related and other personal information. In the United States, numerous federal and state laws and regulations, including data breach notification laws, health information privacy and security laws, including HIPAA, and federal and state consumer protection laws and regulations (e.g., Section 5 of the FTC Act), that govern the collection, use, disclosure, and protection of health-related and other personal information could apply to our operations or the operations of our partners. In addition, certain state and non-U.S. laws, such as the California Consumer Privacy Act, as amended by the California Privacy Rights Act, or the CCPA, and the General Data Protection Regulation, or the GDPR, govern the privacy and security of personal information, including health-related information in certain circumstances, some of which are more stringent than HIPAA and many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts. Failure to comply with these laws, where applicable, can result in the imposition of significant civil and/or criminal penalties and private litigation. Data privacy and security laws, regulations, and related obligations are constantly evolving, may conflict with each other, and can result in investigations, proceedings, or actions that lead to significant civil and/or criminal penalties and restrictions on data processing, any of which could cause a significant disruption to our business.

Human Capital

As of February 14, 2025, we had 391 full-time employees, 90 of whom have a Ph.D. or M.D. degree. None of our employees are represented by labor unions or covered by collective bargaining agreements. We consider our relationship with our employees to be good.

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

Corporate Information

We were originally founded as a Delaware limited liability company on November 13, 2012, under the name Avidity NanoMedicines LLC. On June 4, 2016, we changed our name to Avidity Biosciences LLC, and on April 1, 2019, we converted into a Delaware corporation under the name Avidity Biosciences, Inc. Our principal executive offices are located at 10578 Science Center Drive, Suite 125, San Diego, California 92121, and our telephone number is (858) 401-7900.

Available Information

Our internet address is www.aviditybiosciences.com. Our investor relations website is located at https://aviditybiosciences.investorroom.com/home. We make available free of charge on our investor relations website under "SEC Filings" our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, our directors' and officers' Section 16 reports and any amendments to those reports as soon as reasonably practicable after filing such materials with, or furnishing them to, the SEC. They are also available for free on the SEC's website at www.sec.gov.

We use our investor relations website as a means of disclosing material non-public information and for complying with our disclosure obligations under Regulation FD. Investors should monitor such website, in addition to following our press releases, SEC filings and public conference calls and webcasts. Information relating to our corporate governance is also included on our investor relations website. The information in or accessible through the SEC and our website are not incorporated into, and are not considered part of, this Annual Report on Form 10-K.

ITEM 1A. Risk Factors

You should carefully consider the following risk factors, together with the other information contained in this annual report on Form 10-K, including our consolidated financial statements and the related notes and "Management's Discussion and Analysis of Financial Condition and Results of Operations," before making a decision to purchase or sell shares of our common stock. We cannot assure you that any of the events discussed in the risk factors below will not occur. These risks could have a material and adverse impact on our business, results of operations, financial condition and growth prospects. If that were to happen, the trading price of our common stock could decline substantially. Additional risks and uncertainties not presently known to us or that we currently deem immaterial also may impair our business operations or financial condition.

Summary of Risk Factors

The principal risks and uncertainties affecting our business include the following:

- We have a limited operating history, have incurred significant operating losses since our inception and expect to incur significant losses for the foreseeable future. We may never generate any product revenue or become profitable or, if we achieve profitability, we may not be able to sustain it.
- We will require substantial additional financing to achieve our goals, and a failure to obtain this necessary capital when needed on acceptable terms, or at all, could force us to delay, limit, reduce or terminate our development programs, commercialization efforts or other operations.
- We have three product candidates in clinical development. All of our other development programs are in the preclinical or discovery stage. If we are unable to successfully develop, obtain regulatory approval for and ultimately commercialize product candidates, or experience significant delays in doing so, our business will be materially harmed.
- Any difficulties or delays in the commencement or completion, or the termination or suspension, of our ongoing and planned clinical trials could result in increased costs to us, or delay or limit our ability to generate revenue and adversely affect our commercial prospects.
- Use of our product candidates could be associated with side effects, adverse events or other properties or safety risks, which could delay or preclude approval, cause us to suspend or discontinue clinical trials, abandon a product candidate, limit the commercial profile of an approved label or result in other significant negative consequences that could severely harm our business, prospects, operating results and financial condition.

- We may find it difficult to enroll patients in our clinical trials. If we encounter difficulties enrolling subjects in our clinical trials, our clinical development activities could be delayed or otherwise adversely affected.
- Our product candidates are subject to extensive regulation and compliance, which is costly and time consuming, and such regulation may cause unanticipated delays or prevent the receipt of the approvals required to commercialize our product candidates.
- We rely on third parties for the manufacture of our product candidates for preclinical and clinical development. This reliance on third parties increases the risk that we will not have sufficient quantities of our product candidates or products or such quantities at an acceptable cost, which could delay, prevent or impair our development or commercialization efforts.
- Interim, topline and preliminary data from our preclinical studies and clinical trials that we announce or publish from time to time may change as more patient data become available and are subject to audit and verification procedures that could result in material changes in the final data.
- Our approach to the discovery and development of product candidates based on our AOC platform is unproven, and we do not know whether we will be able to develop any products of commercial value, or if competing technological approaches will limit the commercial value of our product candidates or render our AOC platform obsolete.
- Preclinical and clinical development involves a lengthy and expensive process with an uncertain outcome, and the results of preclinical studies and early clinical trials are not necessarily predictive of future results. Our product candidates may not have favorable results in clinical trials or receive regulatory approval on a timely basis, if at all.
- We rely on third parties to conduct our preclinical studies and clinical trials, and these parties may not perform satisfactorily.
- We face significant competition, and if our competitors develop technologies or product candidates more rapidly than we do or their technologies are more effective, our business and our ability to develop and successfully commercialize products may be adversely affected.
- We may encounter difficulties in managing our growth and expanding our operations successfully.
- Recently enacted legislation, future legislation and healthcare reform measures may increase the difficulty and cost for us to commercialize our product candidates and may affect the prices we may set.
- Our success depends on our ability to protect our intellectual property and our proprietary technologies.
- Unstable market and economic conditions and adverse developments with respect to financial institutions and associated liquidity risk may have serious adverse consequences on our business, financial condition and stock price.

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

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

Biopharmaceutical product development is a highly speculative undertaking and involves a substantial degree of risk. We are a clinical-stage biopharmaceutical company with a limited operating history upon which you can evaluate our business and prospects. We have three product candidates, del-desiran, del-brax and del-zota, in clinical development while all of our other development programs are in preclinical development or in the drug discovery stage. We commenced operations in 2012, and to date, we have focused primarily on organizing and staffing our company, business planning, raising capital, developing our proprietary AOC technology platform, identifying product candidates, establishing our intellectual property portfolio and conducting research and clinical and preclinical studies. Our approach to the discovery and development of product candidates based on our AOC platform is unproven, and we do not know whether we will be able to

develop any product candidates that succeed in clinical development or products of commercial value. As an organization, we have not yet completed any clinical trials, obtained regulatory approvals, manufactured a commercial-scale product or arranged for a third party to do so on our behalf, or conducted sales and marketing activities necessary for successful product commercialization. Consequently, any predictions made about our future success or viability may not be as accurate as they could be if we had a history of successfully developing and commercializing biopharmaceutical products.

We have incurred significant operating losses since our inception. We do not have any products approved for sale and have not generated any product revenue since our inception. If our product candidates are not successfully developed and approved, we may never generate any significant revenue. Our net losses were $322.3 million, $212.2 million, and $174.0 million for the years ended December 31, 2024, 2023, and 2022, respectively. As of December 31, 2024, we had an accumulated deficit of $893.1 million. Substantially all of our losses have resulted from expenses incurred in connection with our research and development programs and from general and administrative costs associated with our operations. All of our product candidates will require additional development time and resources, which would be substantial, before we would be able to apply for or receive regulatory approvals and begin generating revenue from product sales. We expect to continue to incur losses for the foreseeable future, and we anticipate these losses will increase as we continue our development of, seek regulatory approval for and potentially commercialize any of our product candidates.

To become and remain profitable, we must succeed in developing and eventually commercializing products that generate significant revenue. This will require us to be successful in a range of challenging activities, including completing preclinical studies and clinical trials of our product candidates, identifying lead product candidates, discovering additional product candidates, obtaining regulatory approval for these product candidates and manufacturing, marketing and selling any products for which we may obtain regulatory approval. We may never succeed in these activities and, even if we do, may never generate revenues that are significant enough to achieve profitability. In addition, we have not yet demonstrated an ability to successfully overcome many of the risks and uncertainties frequently encountered by companies in new and rapidly evolving fields, particularly in the biopharmaceutical industry. Because of the numerous risks and uncertainties associated with biopharmaceutical product 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. Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable may have an adverse effect on the value of our company and could impair our ability to raise capital, expand our business, maintain our research and development efforts, diversify our product candidates or even continue our operations. A decline in the value of our company could also cause you to lose all or part of your investment.

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

The development of biopharmaceutical product candidates is capital-intensive. We expect our expenses to increase in connection with our ongoing activities, particularly as we conduct our ongoing and planned clinical trials and preclinical studies for our development programs and seek regulatory approval for our current product candidates and any future product candidates we may develop. If we obtain regulatory approval for any of our product candidates, we also expect to incur significant commercialization expenses related to product manufacturing, marketing, compliance, sales and distribution. Because the outcome of any preclinical study or clinical trial is highly uncertain, we cannot reasonably estimate the actual amounts necessary to successfully complete the development and commercialization of our product candidates. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. If we are unable to raise capital when needed or on attractive terms, we could be forced to delay, reduce or eliminate our research and development programs or any commercialization efforts.

We believe that our existing cash, cash equivalents and marketable securities will enable us to fund our operations for at least the next 12 months. We have based these estimates on assumptions that may prove to be wrong, and we could exhaust our capital resources sooner than we currently expect. Our operating plans and other demands on our cash resources may change as a result of many factors currently unknown to us, and we may need to seek additional funds sooner than planned, through public or private equity or debt financings or other capital sources, including potentially additional collaborations, licenses and other similar arrangements. In addition, we may seek additional capital due to favorable market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. For

example, in August 2024, we entered into a sales agreement, or the 2024 Sales Agreement, with TD Securities (USA) LLC, or the Sales Agent, under which we may, from time to time, sell shares of common stock having an aggregate offering price of up to $400.0 million through the Sales Agent. However, there can be no assurance that the Sales Agent will be successful in consummating future sales based on prevailing market conditions or in the quantities or at the prices that we deem appropriate. In addition, the 2024 Sales Agreement may be terminated by us or the Sales Agent at any time upon specified notice to the other party, or by the Sales Agent at any time in certain circumstances, including the occurrence of a material adverse change. 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 type, number, scope, progress, expansions, results, costs and timing of, discovery, preclinical studies and clinical trials of our product candidates which we are pursuing or may choose to pursue in the future;
- the costs and timing of manufacturing for our product candidates and commercial manufacturing if any product candidate is approved;
- the costs, timing and outcome of regulatory review of our product candidates;
- the terms and timing of establishing and maintaining collaborations, licenses and other similar arrangements;
- the costs of obtaining, maintaining and enforcing our patents and other intellectual property rights;
- our efforts to enhance operational systems and hire additional personnel to satisfy our obligations as a public company, including enhanced internal controls over financial reporting;
- the costs associated with hiring additional personnel and consultants as our preclinical, clinical and compliance activities increase;
- the timing and amount of the milestone or other payments made to us under our current or future research and collaboration agreements;
- the costs and timing of establishing or securing sales and marketing capabilities if any product candidate is approved;
- our ability to achieve sufficient market acceptance, coverage and adequate reimbursement from third-party payors and adequate market share and revenue for any approved products;
- the terms and timing of establishing and maintaining collaborations, licenses and other similar arrangements; and
- costs associated with any products or technologies that we may in-license or acquire.

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

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

Until such time, if ever, as we can generate substantial product revenues, we expect to finance our cash needs through equity offerings, debt financings, or other capital sources, including potential additional collaborations, licenses and other similar arrangements. We do not have any committed external source of funds. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect your rights as a common stockholder. Any future debt financing and preferred equity financing, if available, may involve agreements that include covenants limiting or restricting our ability to take

specific actions, such as incurring additional debt, selling or licensing our assets, making capital expenditures, declaring dividends or encumbering our assets to secure future indebtedness. Such restrictions could adversely impact our ability to conduct our operations and execute our business plan.

If we raise additional funds through future collaborations, licenses and other similar arrangements, we may have to relinquish valuable rights to our future revenue streams, research programs, product candidates or AOC platform, or grant licenses on terms that may not be favorable to us and/or that may reduce the value of our common stock. If we are unable to raise additional funds through equity or debt financings or other arrangements when needed or on terms acceptable to us, we would be required to delay, limit, reduce, or terminate our product development or future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

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

We have three product candidates in clinical development. All of our other development programs are in the preclinical or discovery stage. If we are unable to successfully develop, obtain regulatory approval for and ultimately commercialize product candidates, or experience significant delays in doing so, our business will be materially harmed.

We have three product candidates in clinical development. All of our other development programs are in the preclinical or drug discovery stage. We have invested substantially all of our efforts in developing our AOC platform, identifying potential product candidates and conducting preclinical and clinical studies. We will need to progress our preclinical-stage candidates through IND-enabling studies and receive allowance from the FDA, or the equivalent regulatory authority in other countries, to proceed under an IND, or its equivalent, prior to initiating their clinical development. Our ability to generate product revenues, which we do not expect will occur in the immediate near term, if ever, will depend heavily on the successful development and eventual commercialization of our product candidates. The success of our product candidates will depend on several factors, including the following:

- successful completion of preclinical studies with favorable results, including those compliant with GLP, toxicology studies, biodistribution studies and minimum effective dose studies in animals;
- allowance to proceed with clinical trials under INDs by the FDA, or under similar regulatory submissions by comparable foreign regulatory authorities for the conduct of clinical trials of our product candidates and our proposed design of future clinical trials;
- successful enrollment in clinical trials and completion of clinical trials with favorable results;
- demonstrating safety, purity, potency and efficacy of our product candidates to the satisfaction of applicable regulatory authorities;
- receipt of marketing approvals from applicable regulatory authorities, including BLAs from the FDA, and maintaining such approvals;
- making arrangements with our third-party manufacturers for, or establishing, commercial manufacturing capabilities;
- establishing sales, marketing and distribution capabilities and launching commercial sales of our products, if and when approved, whether alone or in collaboration with others;
- establishing and maintaining patent and trade secret protection or regulatory exclusivity for our product candidates, and defending these items, as required;
- maintaining an acceptable safety profile of our products following approval; and
- maintaining and growing an organization of people who can develop and commercialize our products and technology.

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

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

From time to time, we may publicly disclose preliminary or topline data from our clinical trials and preclinical studies, which is based on a preliminary analysis of then-available data as of certain data cutoff dates, and the results and related findings and conclusions are subject to change following a more comprehensive review of the data related to the particular trial. We also make assumptions, estimations, calculations and conclusions as part of our analyses of data, and we may not have received or had the opportunity to fully and carefully evaluate all data. As a result, the preliminary or topline results that we report may differ from future results of the same trials, or different conclusions or considerations may qualify such results, once additional data have been received and fully evaluated. Topline and preliminary data also remain subject to audit and verification procedures that may result in the final data being materially different from the 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 or as patients from our clinical trials continue other treatments for their disease. Adverse differences between preliminary, topline or interim data and final data could significantly harm our business prospects.

Further, others, including regulatory agencies, may not accept or agree with our assumptions, estimates, calculations, conclusions or analyses or may interpret or weigh the importance of data differently, which could impact the value of the particular program, the approvability or commercialization of the particular product candidate or product and the value of 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 the material or otherwise appropriate information to include in our disclosure, and any information we determine not to disclose may ultimately be deemed significant with respect to future decisions, conclusions, views, activities or otherwise regarding a particular product, product candidate or our business. If the topline data that we report differ from actual results, or if others, including regulatory authorities, disagree with the conclusions reached, our ability to obtain approval for, and commercialize, our product candidates may be harmed, which could harm our business, operating results, prospects and financial condition.

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

The success of our business depends primarily upon our ability to identify, develop and commercialize products based on our proprietary AOC platform, which leverages a novel and unproven approach. While we believe we have had favorable preclinical and early clinical study results based on our technology platform, we have not yet succeeded and may not succeed in producing final data demonstrating safety, purity or potency for any product candidates in clinical trials or in obtaining marketing approval thereafter. Our research methodology and novel approach to oligonucleotide based therapy may be unsuccessful in identifying additional product candidates, and any product candidates based on our technology platform may be shown to have harmful side effects or may have other characteristics that may necessitate additional clinical testing, or make the product candidates unmarketable or unlikely to receive marketing approval. We may also be unsuccessful in developing and demonstrating potential utility of our AOCs in cell types beyond the muscle, including under our Lilly Agreement for immunology and other select indications and under the BMS Collaboration Agreement for certain cardiovascular targets. Further, because all of our product candidates and development programs are based on our AOC platform, adverse developments with respect to one of our programs may have a significant adverse impact on the actual or perceived likelihood of success and value of our other programs.

In addition, the biotechnology and biopharmaceutical industries are characterized by rapidly advancing technologies. Our future success will depend in part on our ability to maintain a competitive position with our AOC approach. If we fail to stay at the forefront of technological change in utilizing our AOC platform to create and develop product candidates, we may be unable to compete effectively. Our competitors may render our AOC approach obsolete, or limit the commercial value of our product candidates, by advances in existing

technological approaches or the development of new or different approaches (including, for example, using different mAbs or transporter protein combinations with oligonucleotides than us), potentially eliminating the advantages in our drug discovery process that we believe we derive from our research approach and proprietary technologies. By contrast, adverse developments with respect to other companies that attempt to use a similar approach to our approach may adversely impact the actual or perceived value of our AOC platform and potential of our product candidates.

If any of these events occur, we may be forced to abandon our development efforts for a program or programs, which would have a material adverse effect on our business and could potentially cause us to cease operations.

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

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

The results from preclinical studies or clinical trials of a product candidate may not predict the results of later clinical trials of the product candidate, and interim, topline, or preliminary results of a clinical trial are not necessarily indicative of final results. Product candidates in later stages of clinical trials may fail to show the desired safety and efficacy characteristics despite having progressed through preclinical studies and early clinical trials. In particular, while we have conducted certain clinical trials and preclinical studies of del-desiran, del-brax and del-zota, and preclinical studies in other potential product candidates, we do not know whether these product candidates will perform in ongoing or future clinical trials as they have performed in these prior trials and studies. The positive results we have observed for our product candidates in preclinical animal models, and in certain cases, clinical studies, may not be predictive of our ongoing and future clinical trials in humans, including any late-stage or pivotal trials. Furthermore, for some indications that we are pursuing, there are no animal models of the human disease and therefore the animal models may not be predictive for human disease outcomes. It is not uncommon to observe results in clinical trials that are unexpected based on preclinical studies and early clinical trials, and many product candidates fail in clinical trials despite very promising early results. If unexpected observations or toxicities are observed in these studies, or in IND-enabling studies for any of our other development programs, this will delay clinical trials for such development programs. Moreover, preclinical and clinical data may be susceptible to varying interpretations and analyses. A number of companies in the biopharmaceutical and biotechnology industries have suffered significant setbacks in clinical development even after achieving promising results in earlier studies. For the foregoing reasons, we cannot be certain that our ongoing and planned preclinical studies and planned clinical trials will be successful. Any safety concerns observed in any of our preclinical studies or clinical trials in our targeted indications could limit the prospects for regulatory approval of our product candidates in those and other indications, which could have a material adverse effect on our business, financial condition and results of operations.

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 has recently evolved. The EU Clinical Trials Regulation, or CTR, which was adopted in April 2014 and repeals the EU Clinical Trials Directive, became applicable on January 31, 2022. While the EU Clinical Trials Directive required a separate clinical trial application, or 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 transition period ended on January 31, 2025, and all clinical trials (and related applications) are now fully

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, or CROs, may impact our developments plans.

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

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

Before we can initiate clinical trials for a product candidate, we must submit the results of preclinical studies to the FDA or comparable foreign regulatory authorities along with other information, including information about product candidate chemistry, manufacturing and controls and our proposed clinical trial protocol, as part of an IND or similar regulatory filing required for authorization to proceed with clinical development. The FDA or comparable foreign regulatory authorities may require us to conduct additional preclinical studies for any product candidate before it allows us to initiate clinical trials under any IND or similar regulatory filing, which may lead to delays and increase the costs of our preclinical development programs.

Moreover, even if these trials begin, issues may arise that could cause regulatory authorities to suspend or terminate such clinical trials. For example, the FDA placed a partial clinical hold on new participant enrollment in our Phase 1/2 MARINA clinical trial of del-desiran in adults with DM1 in response to a serious adverse event reported in a single participant in the 4mg/kg cohort of the MARINA study, which partial clinical hold was removed in October 2024. Any delays in the commencement or completion of our ongoing and planned clinical trials for our current and any future product candidates could significantly affect our product development timelines and product development costs.

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

- obtaining regulatory authorizations to commence a trial or reaching a consensus with regulatory authorities on trial design;
- the FDA or comparable foreign regulatory authorities disagreeing as to the design or implementation of our clinical studies;
- any failure or delay in reaching an agreement with CROs and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- obtaining approval from one or more IRBs or ethics committees;
- IRBs or ethics committees refusing to approve, suspending or terminating the trial at an investigational site, precluding enrollment of additional subjects, or withdrawing their approval of the trial;
- changes to clinical trial protocol;
- clinical sites deviating from trial protocol or dropping out of a trial;
- manufacturing sufficient quantities of product candidate for use in clinical trials;
- subjects failing to enroll or remain in our trials at the rate we expect, or failing to return for post-treatment follow-up;
- subjects choosing an alternative treatment for the indications for which we are developing our product candidates, or participating in competing clinical trials;
- lack of adequate funding to continue the clinical trial;
- subjects experiencing severe or unexpected drug-related adverse effects;
- occurrence of serious adverse events in trials of the same class of agents conducted by other companies;

- selection of clinical endpoints that require prolonged periods of clinical observation or analysis of the resulting data;
- a facility manufacturing our product candidates or any of their components being ordered by the FDA or comparable foreign regulatory authorities to temporarily or permanently shut down due to violations of cGMP, regulations or other applicable requirements, or infections or cross-contaminations of product candidates in the manufacturing process;
- any changes to our manufacturing process that may be necessary or desired;
- third-party clinical investigators losing the licenses or permits necessary to perform our clinical trials, not performing our clinical trials on our anticipated schedule or consistent with the clinical trial protocol, GCP, or other regulatory requirements;
- third-party contractors not performing data collection or analysis in a timely or accurate manner; or
- third-party contractors becoming debarred or suspended or otherwise penalized by the FDA or other government or regulatory authorities for violations of regulatory requirements, in which case we may need to find a substitute contractor, and we may not be able to use some or all of the data produced by such contractors in support of our marketing applications.

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

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

If we experience delays in the completion of, or the termination of, any clinical trial of our product candidates, the commercial prospects of our product candidates will be harmed, and our ability to generate product revenues from any of these product candidates will be delayed or eliminated. Moreover, any delays in completing our clinical trials will increase our costs, slow down our product candidate development and approval process and jeopardize our ability to commence product sales and generate revenues.

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

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

We may not be able to initiate or continue clinical trials for our product candidates if we are unable to identify and enroll a sufficient number of eligible patients to participate in these trials as may be required by the FDA or similar regulatory authorities outside the United States. Subject enrollment, a significant factor in the timing of clinical trials, is affected by many factors including the size and nature of the patient population, the

proximity of patients to clinical sites, the eligibility and exclusion criteria for the trial, the design of the clinical trial, the risk that enrolled patients will not complete a clinical trial, our ability to recruit clinical trial investigators with the appropriate competencies and experience, competing clinical trials and clinicians' and patients' perceptions as to the potential advantages and risks of the product candidate being studied in relation to other available therapies, including any new products that may be approved for the indications we are investigating as well as any product candidates under development. We will be required to identify and enroll a sufficient number of subjects for each of our clinical trials. Potential subjects for any planned clinical trials may not be adequately diagnosed or identified with the diseases which we are targeting or may not meet the entry criteria for such trials. We are initially developing product candidates targeting genetically defined, rare muscle disorders with limited patient pools from which to draw for clinical trials. Genetically defined diseases generally, including those for which our current product candidates are targeted, have low incidence and prevalence. We also may encounter difficulties in identifying and enrolling subjects with a stage of disease appropriate for our planned clinical trials and monitoring such subjects adequately during and after treatment. We may not be able to initiate or continue clinical trials if we are unable to locate a sufficient number of eligible subjects to participate in the clinical trials required by the FDA or comparable foreign regulatory authorities. In addition, the process of finding and diagnosing subjects may prove costly.

The timing of our clinical trials depends, in part, on the speed at which we can recruit patients to participate in our trials, as well as completion of required follow-up periods. The eligibility criteria of our clinical trials, once established, will further limit the pool of available trial participants. If patients are unwilling to participate in our trials for any reason, including the existence of concurrent clinical trials for similar patient populations or the availability of approved therapies, or we otherwise have difficulty enrolling a sufficient number of patients, the timeline for recruiting subjects, conducting studies and obtaining regulatory approval of our product candidates may be delayed. Our inability to enroll a sufficient number of subjects for any of our ongoing or future clinical trials would result in significant delays or may require us to abandon one or more clinical trials altogether. In addition, we expect to rely on CROs and clinical trial sites to ensure proper and timely conduct of our current and future clinical trials and, while we have entered and will enter into agreements governing their services, we have limited influence over their actual performance.

We cannot assure you that our assumptions used in determining expected clinical trial timelines are correct or that we will not experience delays in enrollment, which would result in the delay of completion of such trials beyond our expected timelines.

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

As is the case with biopharmaceuticals generally, it is likely that there may be side effects and adverse events associated with our product candidates' use. Results of our clinical trials could reveal a high and unacceptable severity and prevalence of side effects or unexpected characteristics. Although other oligonucleotide therapeutics have received regulatory approval, our AOCs, which combine oligonucleotides with a mAb, are a novel approach to oligonucleotide therapies, which may present enhanced risk and uncertainty for our product candidates compared to more well-established classes of therapies, or oligonucleotide or mAb-based therapies on their own. Moreover, there have been only a limited number of clinical trials involving the use of oligonucleotide therapeutics or the proprietary technology used in our AOC platform. It is impossible to predict when or if any product candidates we may develop will prove safe in humans. Undesirable side effects 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 regulatory authorities. The drug-related side effects could affect patient recruitment or the ability of enrolled patients to complete the trial or result in potential product liability claims. Any of these occurrences may harm our business, financial condition and prospects significantly.

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

testing have later been found to cause side effects that prevented further development of the compound. In addition, regulatory authorities may draw different conclusions or require additional testing to confirm these determinations.

It is possible that as we test our product candidates in larger, longer and more extensive clinical trials, 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.

Patients treated with our products, if approved, may experience previously unreported adverse reactions, and it is possible that the FDA or other regulatory authorities may ask for additional safety data as a condition of, or in connection with, our efforts to obtain approval of our product candidates. If safety problems occur or are identified after our products, if any, reach the market, we may make the decision or be required by regulatory authorities to amend the labeling of our products, recall our products or even withdraw approval for our products.

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

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

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

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

We are continuing to develop our product candidates and we will need to successfully complete our ongoing and planned early-stage clinical trials, and later-stage and pivotal clinical trials in order to obtain FDA or comparable foreign regulatory approval to market any of our product candidates, as well as complete IND-enabling studies for our preclinical product candidates. Carrying out clinical trials and the submission of a successful BLA is a complicated process. As an organization, we have not completed any pivotal clinical trials, have limited experience as a company in preparing, submitting and prosecuting regulatory filings and have not previously submitted a BLA or other comparable foreign regulatory submission for any product candidate. As interactions with the FDA may not be comprehensive, we cannot be certain how many clinical trials of any of our product candidates will be required or how such trials should be designed. Consequently, we may be unable to successfully and efficiently execute and complete necessary clinical trials in a way that leads to regulatory submission and approval of any of our product candidates. We may require more time and incur greater costs than our competitors and may not succeed in obtaining regulatory approvals of product candidates that we

develop. Failure to commence or complete, or delays in, our planned clinical trials, could prevent us from or delay us in submitting BLAs for and commercializing our product candidates.

Our product candidates are subject to extensive regulation and compliance, which is costly and time consuming, and such regulation may cause unanticipated delays or prevent the receipt of the approvals required to commercialize our product candidates.

The clinical development, manufacturing, labeling, packaging, storage, record-keeping, advertising, promotion, import, export, marketing, distribution and adverse event reporting, including the submission of safety and other information, of our product candidates are subject to extensive regulation by the FDA in the United States and by comparable foreign regulatory authorities in foreign markets. In the United States, we are not permitted to market our product candidates until we receive regulatory approval from the FDA. The process of obtaining regulatory approval is expensive, often takes many years following the commencement of clinical trials and can vary substantially based upon the type, complexity and novelty of the product candidates involved, as well as the target indications and patient population. Approval policies or regulations may change, and the FDA has substantial discretion in the drug approval process, including the ability to delay, limit or deny approval of a product candidate for many reasons. Despite the time and expense invested in clinical development of product candidates, regulatory approval is never guaranteed. Neither we nor any current or future collaborator is permitted to market any of our product candidates in the United States until we receive approval from the FDA.

Prior to obtaining approval to commercialize a product candidate in the United States or abroad, we or our collaborators must demonstrate with substantial evidence from adequate and well-controlled clinical trials, and to the satisfaction of the FDA or comparable foreign regulatory authorities, that such product candidates are safe, pure, potent or effective for their intended uses. Results from preclinical studies and clinical trials can be interpreted in different ways. Even if we believe the preclinical or clinical data for our product candidates are promising, such data may not be sufficient to support approval by the FDA and comparable foreign regulatory authorities. The FDA or comparable foreign regulatory authorities, as the case may be, may also require us to conduct additional preclinical studies or clinical trials for our product candidates either prior to or post-approval, or may object to elements of our clinical development program.

The FDA or comparable foreign regulatory authorities can delay, limit or deny approval of a product candidate for many reasons, including:

- such authorities may disagree with the design or implementation of our or our collaborators' current or future clinical trials;
- negative or ambiguous results from our clinical trials or results may not meet the level of statistical significance required by the FDA or comparable foreign regulatory agencies for approval;
- serious and unexpected drug-related side effects may be experienced by participants in our clinical trials or by individuals using drugs similar to our product candidates;
- such authorities may not accept clinical data from trials which are conducted at clinical facilities or in countries where the standard of care is potentially different from that of the United States;
- we or any of our current or future collaborators may be unable to demonstrate that a product candidate is safe and effective, and that product candidate's clinical and other benefits outweigh its safety risks;
- such authorities may disagree with our interpretation of data from preclinical studies or clinical trials;
- such authorities may not agree that the data collected from clinical trials of our product candidates are acceptable or sufficient to support the submission of a BLA or other submission or to obtain regulatory approval in the United States or elsewhere, and such authorities may impose requirements for additional preclinical studies or clinical trials;
- such authorities may disagree regarding the formulation, labeling and/or the specifications of our product candidates;
- approval may be granted only for indications that are significantly more limited than what we apply for and/or with other significant restrictions on distribution and use;

- such authorities may find deficiencies in the manufacturing processes, approval policies or facilities of our third-party manufacturers with which we or any of our current or future collaborators contract for clinical and commercial supplies;
- regulations of such authorities may significantly change in a manner rendering our or any of our potential future collaborators' clinical data insufficient for approval; or
- such authorities may not accept a submission due to, among other reasons, the content or formatting of the submission.

With respect to foreign markets, approval procedures vary among countries and, in addition to the foregoing risks, may involve additional product testing, administrative review periods and agreements with pricing authorities. In addition, events raising questions about the safety of certain marketed biopharmaceuticals may result in increased cautiousness by the FDA and comparable foreign regulatory authorities in reviewing new drugs and biologics based on safety, efficacy or other regulatory considerations and may result in significant delays in obtaining regulatory approvals. Any delay in obtaining, or inability to obtain, applicable regulatory approvals could prevent us or any of our potential future collaborators from commercializing our product candidates.

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

We currently plan to pursue an accelerated approval pathway in the United States with respect to del-brax and del-zota, and may in the future pursue accelerated approval for our one or more additional of our product candidates. Under the accelerated approval program, the FDA may grant accelerated approval to a product candidate designed to treat a serious or life-threatening condition that provides meaningful therapeutic benefit over available therapies upon a determination that the product candidate has an effect on a surrogate endpoint or intermediate clinical endpoint that is reasonably likely to predict clinical benefit. The FDA considers a clinical benefit to be a positive therapeutic effect that is clinically meaningful in the context of a given disease, such as irreversible morbidity or mortality. For the purposes of accelerated approval, a surrogate endpoint is a marker, such as a laboratory measurement, radiographic image, physical sign, or other measure that is thought to predict clinical benefit, but is not itself a measure of clinical benefit. An intermediate clinical endpoint is a clinical endpoint that can be measured earlier than an effect on irreversible morbidity or mortality that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit.

The accelerated approval pathway may be used in cases in which the advantage of a new biologic over available therapy may not be a direct therapeutic advantage, but is a clinically important improvement from a patient and public health perspective. If granted, accelerated approval is usually contingent on the sponsor's agreement to conduct, in a diligent manner, additional confirmatory studies to verity and describe the biologic's predicted clinical benefit. If such confirmatory studies fail to confirm the biologic's clinical benefit or are not completed in a timely manner, the FDA may withdraw its approval of the drug on an expedited basis. In addition, the Food and Drug Omnibus Reform Act of 2022 provided FDA statutory authority to mitigate potential risks to patients from continued marketing of ineffective drugs previously granted accelerated approval. Under these provisions, the FDA may require a sponsor of a product seeking accelerated approval to have a confirmatory trial underway prior to such approval being granted.

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

development, review or approval for our product candidate would result in a longer time period to commercialization of such product candidate, if any, could increase the cost of development of such product candidate and could harm our competitive position in the marketplace.

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

Because we have limited financial and managerial resources, we focus on specific product candidates and specific indications. As a result, we may forgo or delay pursuit of opportunities with other product candidates that could have had greater commercial potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. Our spending on current and future research and development programs and product candidates for specific indications may not yield any commercially viable product candidates. If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through collaborations, licenses and other similar arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such product candidate.

We may not be able to obtain or maintain Orphan drug designations for any of our product candidates, and we may be unable to maintain the benefits associated with Orphan drug designation, including the potential for market exclusivity.

Regulatory authorities in some jurisdictions, including the United States and Europe, may designate drugs or biologics for relatively small patient populations as Orphan drugs. Under the Orphan Drug Act of 1983, the FDA may designate a drug or biologic as an Orphan product if it is intended to treat a rare disease or condition, which is generally defined as a patient population of fewer than 200,000 individuals in the United States, or a patient population of greater than 200,000 individuals in the United States, but for which there is no reasonable expectation that the cost of developing the drug will be recovered from sales in the United States. In the EU, Orphan designation is granted by the European Commission based on a scientific opinion of the EMA Committee for Orphan Medicinal Products. A medicinal product may be designated as Orphan if its sponsor can establish that (i) the product is intended for the diagnosis, prevention or treatment of a life-threatening or chronically debilitating condition; (ii) either (a) such condition affects no more than 5 in 10,000 persons in the EU when the application is made, or (b) the product, without the benefits derived from Orphan status, would not generate sufficient return in the EU to justify investment; and (iii) there exists no satisfactory method of diagnosis, prevention or treatment of such condition authorized for marketing in the EU, or if such a method exists, the medicinal product will be of significant benefit to those affected by the condition. We have received orphan drug designation in the United States and the European Union for each of del-desiran for the treatment of DM1, del-brax for the treatment of FSHD and del-zota for the treatment of DMD44, and we may seek Orphan drug designation for future product candidates. There can be no assurance that we will be able to maintain such designation or that the FDA or European Commission will grant Orphan designation for any additional indication for which we apply.

In the United States, Orphan designation entitles a party to financial incentives such as opportunities for grant funding toward clinical trial costs, tax advantages and user-fee waivers. In addition, if a product candidate that has Orphan designation subsequently receives the first FDA approval for the disease or condition for which it has such designation, the product is entitled to Orphan drug exclusivity, which means that the FDA may not approve any other applications, including a BLA, to market the same product 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 where the manufacturer is unable to assure sufficient product quantity. The applicable exclusivity period is ten years in the EU, but such exclusivity period can be reduced to six years if, at the end of the fifth year, a product no longer meets the criteria for Orphan designation or if the product is sufficiently profitable that market exclusivity is no longer justified.

Even if we obtain Orphan drug exclusivity for a product, that exclusivity may not effectively protect the product from competition because different drugs can be approved for the same disease or condition. Even after an Orphan drug is approved, the FDA or comparable foreign regulatory authority can subsequently approve the same drug for the same disease or condition if such regulatory authority concludes that the later drug is clinically superior because it is shown to be safer, more effective or makes a major contribution to patient care. Orphan drug exclusivity in the United States may also be lost if the FDA later determines that the initial

request for designation was materially defective. In addition, Orphan drug exclusivity does not prevent the FDA from approving competing drugs containing different active ingredients for the same or similar indication. In addition, if a subsequent drug is approved for marketing for the same or a similar disease or condition as any of our product candidates that receive marketing approval, we may face increased competition and lose market share regardless of orphan drug exclusivity. Orphan drug designation neither shortens the development time or regulatory review time of a drug nor gives the drug any advantage in the regulatory review or approval process.

Receipt of Breakthrough Therapy designation or Fast Track designation by the FDA for one or more of our product candidates may not lead to a faster development or regulatory review or approval process and it does not increase the likelihood that our product candidates will receive marketing approval.

We may seek Breakthrough Therapy or Fast Track designation for some of our product candidates. If a product candidate is intended for the treatment of a serious or life-threatening condition and clinical or preclinical data demonstrate the potential to address unmet medical needs for this condition, the sponsor may apply for Fast Track designation. The FDA has granted Fast Track designation to each of del-desiran for the treatment of DM1, del-brax for the treatment of FSHD and del-zota for the treatment of DMD44. The sponsor of a Fast Track product candidate has opportunities for more frequent interactions with the applicable FDA review team during product development and, once a BLA is submitted, the application may be eligible for priority review if the relevant criteria are met. A Fast Track product candidate may also be eligible for rolling review, where the FDA may consider for review sections of the BLA on a rolling basis before the complete application is submitted, if the sponsor provides a schedule for the submission of the sections of the BLA, the FDA agrees to accept sections of the BLA and determines that the schedule is acceptable, and the sponsor pays any required user fees upon submission of the first section of the BLA.

Breakthrough Therapy designation may be granted to a drug or biologic that is intended, alone or in combination with one or more other drugs or biologics, to treat a serious or life-threatening disease or condition and preliminary clinical evidence indicates that the drug or biologic may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. For drugs or biologics that have been designated as Breakthrough Therapies, interaction and communication between the FDA and the sponsor of the trial can help to identify the most efficient path for clinical development while minimizing the number of patients placed in ineffective control regimens. The designation also includes the same benefits as Fast Track designation, including eligibility for rolling review of a BLA. The FDA has granted Breakthrough Therapy designation to del-desiran for the treatment of DM1.

Whether to grant Breakthrough Therapy or fast track designation is within the discretion of the FDA. Accordingly, even if we believe one of our product candidates meets the criteria for these designations, the FDA may disagree and instead determine not to make such designation. In any event, the receipt of either of these designations for a product candidate, including the Fast Track designations granted to del-desiran, del-brax and del-zota, or Breakthrough Therapy designation granted to del-desiran, may not result in a faster development process, review or approval compared to product candidates considered for approval under conventional FDA review procedures and does not assure ultimate approval by the FDA. In addition, the FDA may later decide that the product candidate no longer meets the conditions for qualification and rescind granted designations.

We have obtained Rare Pediatric Disease designation for del-zota for the treatment of DMD44. However, there is no guarantee that FDA approval of will result in issuance of a priority review voucher.

In 2012, Congress authorized the FDA to award priority review vouchers to sponsors of certain rare pediatric disease product applications. This program is designed to encourage development of new drug and biological products for prevention and treatment of certain rare pediatric diseases. Specifically, under this program, a sponsor who receives an approval for a drug or biologic for a “rare pediatric disease” that meets certain criteria may qualify for a voucher that can be redeemed to receive a priority review of a subsequent marketing application for a different product. The sponsor of a rare pediatric disease drug product receiving a priority review voucher may transfer (including by sale) the voucher to another sponsor. The voucher may be further transferred any number of times before the voucher is used, as long as the sponsor making the transfer has not yet submitted the application. The FDA may also revoke any priority review voucher if the Rare Pediatric Disease drug for which the voucher was awarded is not marketed in the U.S. within one year following the date of approval.

We have obtained Rare Pediatric Disease designation for del-zota for the treatment of DMD44. However, there is no guarantee that we will be able to obtain a priority review voucher, even if del-zota is approved by the FDA in the designated indication. For example, the FDA may determine that a BLA, even if ultimately approved, does not meet the eligibility criteria for a priority review voucher, including for the following reasons:

- the product no longer meets the definition of a rare pediatric disease;
- the product contains an active ingredient (including any ester or salt of the active ingredient) that has been previously approved in another marketing application;
- the application does not rely on clinical data derived from studies examining a pediatric population and dosages of the drug intended for that population; or
- the application is approved for a different adult indication than the rare pediatric disease for which the product is designated.

Moreover, Congress included a sunset provision in the statute authorizing the rare pediatric disease priority review voucher program. Under the current statutory sunset provisions, after December 20, 2024, FDA may only award a voucher for an approved rare pediatric disease product application if the sponsor has rare pediatric disease designation for the product candidate, and that designation was granted by December 20, 2024. After September 30, 2026, FDA may not award any rare pediatric disease priority review vouchers, regardless of any rare pediatric disease designation.

We are conducting certain of our clinical trials for our product candidates outside of the United States. However, the FDA and other foreign equivalents may not accept data from such trials, in which case our development plans will be delayed, which could materially harm our business.

We are conducting clinical trials for our product candidates outside the United States. Although the FDA may accept data from clinical trials conducted outside the United States, acceptance of this data is subject to certain conditions imposed by the FDA. Where data from foreign clinical trials are intended to serve as the basis for marketing approval in the United States, the FDA will not approve the application on the basis of foreign data alone unless those data are applicable to the U.S. population and U.S. medical practice; the studies were performed by clinical investigators of recognized competence; and the data are considered valid without the need for an on-site inspection by the FDA or, if the FDA considers such an inspection to be necessary, the FDA is able to validate the data through an on-site inspection or other appropriate means. For studies that are conducted only at sites outside of the United States and not otherwise subject to an IND, the FDA requires the clinical trial to have been conducted in accordance with GCPs, and the FDA must be able to validate the data from the clinical trial through an on-site inspection if it deems such inspection necessary. For such studies not subject to an IND, the FDA generally does not provide advance comment on the clinical protocols for the studies, and therefore there is an additional potential risk that the FDA could determine that the study design or protocol for a non-U.S. clinical trial was inadequate, which could require us to conduct additional clinical trials. There can be no assurance the FDA will accept data from clinical trials conducted outside of the United States. If the FDA does not accept data from our clinical trials of our product candidates, it would likely result in the need for additional clinical trials, which would be costly and time consuming and delay or permanently halt our development of our product candidates.

Conducting clinical trials outside the United States also exposes us to additional risks, including risks associated with:

- additional foreign regulatory requirements;
- foreign exchange fluctuations;
- compliance with foreign manufacturing, customs, shipment and storage requirements;
- cultural differences in medical practice and clinical research; and
- diminished protection of intellectual property in some countries.

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 and foreign regulatory authorities 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 and foreign regulatory authorities' abilities to hire and retain key personnel and accept the payment of user fees, and other events that may otherwise affect the FDA's and foreign regulatory authorities' abilities to perform routine functions. Average review times at the FDA and foreign regulatory authorities 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 and biologics or modifications to approved drugs and biologics to be reviewed and/or approved by necessary government agencies, which would adversely affect our business. For example, in recent years the U.S. government has shut down several times and certain regulatory agencies, such as the FDA, have had to furlough critical FDA employees and stop critical activities.

Separately, in response to the COVID-19 pandemic, the FDA postponed most inspections of domestic and foreign manufacturing facilities at various points. If a prolonged government shutdown occurs, or if global health concerns prevent the FDA or other regulatory authorities from conducting their regular inspections, reviews or other regulatory activities, it could significantly impact the ability of the FDA or other regulatory authorities to timely review and process our regulatory submissions, which could have a material adverse effect on our business.

Risks Related to Our Reliance on Third Parties

We rely on third parties 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, our development programs and our ability to seek or obtain regulatory approval for or commercialize our product candidates may be delayed.

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

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

of the clinical trial itself may be jeopardized, which could result in the delay or rejection by the FDA of any BLA we submit. Any such delay or rejection could prevent us from commercializing our product candidates. Similar risks may exist in foreign jurisdictions.

If any of our relationships with these third parties terminate, we may not be able to enter into arrangements with alternative third parties on commercially reasonable terms or at all. Switching or adding additional CROs, investigators and other third parties involve additional cost and requires our management's time and focus. In addition, there is a natural transition period when a new CRO commences work. As a result, delays occur, which can materially impact our ability to meet our desired clinical development timelines. Though we carefully manage our relationships with our CROs, investigators and other third parties, there can be no assurance that we will not encounter challenges or delays in the future or that these delays or challenges will not have a material adverse impact on our business, financial condition and prospects.

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

We do not own or operate manufacturing facilities and have no plans to develop our own clinical or commercial-scale manufacturing capabilities. We rely, and expect to continue to rely, on third parties for the manufacture of our product candidates and related raw materials for preclinical and clinical development, as well as for commercial manufacture if any of our product candidates receive marketing approval. The facilities used by third-party manufacturers to manufacture our product candidates must be approved by the FDA and any comparable foreign regulatory authority for the manufacture of our product candidates pursuant to inspections that will be conducted after we submit a BLA to the FDA or any comparable application to a foreign regulatory authority. We do not control the manufacturing process of, and are completely dependent on, third-party manufacturers for compliance with cGMP and similar foreign requirements for manufacture of products. If these third-party manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or any comparable foreign regulatory authority, they will not be able to secure and/or maintain regulatory approval for their manufacturing facilities. Our AOCs consist of a proprietary mAb conjugated with the oligonucleotide therapy. All of our mAbs are manufactured by starting with cells which are stored in a cell bank. We have multiple working cell banks and one master cell bank for our mAbs manufactured in accordance with cGMP and believe we would have adequate backup should any cell bank be lost in a catastrophic event. However, it is possible that we could lose multiple cell banks and have our manufacturing impacted by the need to replace the cell banks. In addition, we have no control over the ability of third-party manufacturers to maintain adequate quality control, quality assurance and qualified personnel. If the FDA or any comparable foreign regulatory authority does not approve these facilities for the manufacture of our product candidates or if it withdraws any such approval in the future, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop, obtain regulatory approval for or market our product candidates, if approved. Our failure, or the failure of our third-party manufacturers, to comply with applicable regulations could result in sanctions being imposed on us, including clinical holds, fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, seizures or recalls of product candidates or products, operating restrictions and criminal prosecutions, any of which could significantly and adversely affect supplies of our products.

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

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

In addition, we may be unable to establish any 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:

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

Our product candidates and any products that we may develop may compete with other product candidates and products for access to manufacturing facilities. There are a limited number of manufacturers that operate under cGMP regulations and that might be capable of manufacturing for us.

Any performance failure on the part of our existing or future manufacturers could delay clinical development or marketing approval, and any related remedial measures may be costly or time consuming to implement. We do not currently have arrangements in place for redundant supply or a second source for all required raw materials used in the manufacture of our product candidates. If our existing or future third-party manufacturers cannot perform as agreed, we may be required to replace such manufacturers and we may be unable to replace them on a timely basis or at all.

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

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

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

We are dependent on Lilly and BMS, as collaboration partners, for the development of certain targets. Under certain circumstances, Lilly or BMS may each unilaterally terminate its respective agreement with us for convenience, which could materially and adversely affect our business.

In April 2019, we entered into the Lilly Agreement for the discovery, development and commercialization of AOCs directed against certain targets in immunology and other select indications, or the Lilly AOCs. Under the Lilly Agreement, Lilly will be solely responsible for funding the cost of preclinical research and discovery activities, clinical development, regulatory approval and commercialization for the Lilly AOCs. Lilly primarily controls the research and development activities, pursuant to the terms of the Lilly Agreement, and our lack of control over such activities could result in delays or other difficulties in the development and commercialization of the Lilly AOCs. Any dispute with Lilly may result in the delay or termination of the research, development or commercialization of the Lilly AOCs, and may result in costly litigation that diverts our management's attention

and resources away from our day-to-day activities and which may adversely affect our business, financial condition, results of operation and prospects.

In November 2023, we entered into the BMS Collaboration Agreement for the development of up to five cardiovascular targets using our AOC platform, or the BMS AOCs. Under the BMS Collaboration Agreement, BMS will be solely responsible for funding all future clinical development, regulatory and commercialization activities for the BMS AOCs. Any dispute with BMS may result in the delay or termination of the research, development or commercialization of the BMS AOCs, either on an individual target basis or collectively, and may result in costly litigation that diverts our management's attention and resources away from our day-to-day activities and which may adversely affect our business, financial condition, results of operation and prospects.

In addition, Lilly or BMS may unilaterally terminate the Lilly Agreement or the BMS Collaboration Agreement, respectively (including for convenience), and in either such event, we would be prevented from receiving any research and development funding, milestone payments, royalty payments and other benefits under the respective agreement.

In addition, any decision by Lilly or BMS to terminate the Lilly Agreement or the BMS Collaboration Agreement, respectively, may negatively impact public perception of our AOC product candidates, which could adversely affect the market price of our common stock. We cannot provide any assurance with respect to the success of the collaborations with Lilly or BMS. Any of the foregoing events could have a materially adverse effect on our business, financial condition, results of operations and prospects.

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

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

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

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

Risks Related to Commercialization of Our Product Candidates

Even if we receive regulatory approval for any product candidate, we will be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense. Additionally, our product candidates, if approved, could be subject to labeling and other restrictions on marketing or withdrawal from the market, and we may be subject to penalties if we fail to

comply with regulatory requirements or if we experience unanticipated problems with our product candidates, when and if any of them are approved.

Following potential approval of any our product candidates, the FDA and foreign regulatory authorities may impose significant restrictions on a product's indicated uses or marketing or impose ongoing requirements for potentially costly and time-consuming post-approval studies, post-market surveillance or clinical trials to monitor the safety and efficacy of the product. The FDA may also require a REMS as a condition of approval of our product candidates, which could include requirements for a medication guide, physician communication plans or additional elements to ensure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. In addition, if the FDA or a comparable foreign regulatory authority approves our product candidates, the manufacturing processes, labeling, packaging, distribution, adverse event reporting, storage, advertising, promotion, import, export and recordkeeping for our products will be subject to extensive and ongoing regulatory requirements. These requirements include submissions of safety and other post-marketing information and reports, registration, as well as continued compliance with cGMPs, GCP and similar foreign requirements for any clinical trials that we conduct post-approval. Later discovery of previously unknown problems with our products, including adverse events of unanticipated severity or frequency, or with our third-party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in, among other things:

- restrictions on the marketing or manufacturing of our products, withdrawal of the product from the market or voluntary or mandatory product recalls;
- restrictions on product distribution or use, or requirements to conduct post-marketing studies or clinical trials;
- fines, restitutions, disgorgement of profits or revenues, warning letters, untitled letters or holds on clinical trials;
- refusal by the FDA or foreign regulatory authorities to approve pending applications or supplements to approved applications filed by us or suspension or revocation of approvals;
- product seizure or detention, or refusal to permit the import or export of our products; and
- injunctions or the imposition of civil or criminal penalties.

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

In addition, if any of our product candidates are approved, our product labeling, advertising and promotion will be subject to regulatory requirements and continuing regulatory review. The FDA strictly regulates the promotional claims that may be made about drug products. In particular, a product may not be promoted for uses that are not approved by the FDA as reflected in the product's approved labeling. If we receive marketing approval for a product candidate, physicians may nevertheless, in their independent medical judgment, prescribe it to their patients in a manner that is inconsistent with the approved label. The FDA does not regulate the behavior of physicians in their choice of treatments, but the FDA does restrict manufacturer's communications on the subject of off-label use of their products. If we are found to have promoted such off-label uses, we may become subject to significant liability. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses, and a company that is found to have improperly promoted off-label uses may be subject to significant sanctions. 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 FDA has also requested that companies enter into consent decrees or permanent injunctions under which specified promotional conduct is changed or curtailed.

The FDA's and other regulatory authorities' policies may change, and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. In addition, the FDA's and other regulatory authorities' policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. We also cannot predict the likelihood, nature or extent of government 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.

Our product candidates for which we intend to seek approval as biologic products may face competition sooner than anticipated.

The Affordable Care Act, or the ACA, includes a subtitle called the Biologics Price Competition and Innovation Act of 2009, or BPCIA, which created an abbreviated approval pathway for biological products that are biosimilar to or interchangeable with an FDA-licensed reference biological product. Under the BPCIA, an application for a "biosimilar" product may not be submitted to the FDA until four years following the date that the reference product was first approved by the FDA. In addition, the approval of a biosimilar product may not be made effective by the FDA until 12 years from the date on which the reference product was first licensed. During this 12-year period of exclusivity, another company may still market a competing version of the reference product if the FDA approves a full BLA for the competing product containing such company's own preclinical data and data from adequate and well-controlled clinical trials to demonstrate the safety, purity, and potency of their product.

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

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

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

- demonstration of clinical efficacy and safety compared to other more-established products;
- the indications for which our product candidates are approved;
- the limitation of our targeted patient population and other limitations or warnings contained in any FDA-approved labeling;
- acceptance of a new drug for the relevant indication by healthcare providers and their patients;
- the pricing and cost-effectiveness of our products, as well as the cost of treatment with our products in relation to alternative treatments and therapies;
- our ability to obtain and maintain sufficient third-party coverage and adequate reimbursement from government healthcare programs, including Medicare and Medicaid, private health insurers and other third-party payors;
- the willingness of patients to pay all, or a portion of, out-of-pocket costs associated with our products in the absence of sufficient third-party coverage and adequate reimbursement;
- any restrictions on the use of our products, and the prevalence and severity of any adverse effects;
- potential product liability claims;
- the timing of market introduction of our products as well as competitive drugs;
- the effectiveness of our or any of our current or potential future collaborators' sales and marketing strategies; and
- unfavorable publicity relating to the product.

If any product candidate is approved but does not achieve an adequate level of acceptance by physicians, hospitals, healthcare payors or patients, we may not generate sufficient revenue from that product

and may not become or remain profitable. Our efforts to educate the medical community and third-party payors regarding the benefits of our products may require significant resources and may never be successful.

The 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 prescription products, as our product candidates would be, if approved. In particular, a product may not be promoted for uses that are not approved by the FDA or such other regulatory agencies as reflected in the product's approved labeling. If we are found to have promoted such off-label uses, we may become subject to significant liability. The federal government has levied large civil and criminal fines against companies for alleged improper promotion and has enjoined several companies from engaging in off-label promotion. The FDA has also required companies to enter into consent decrees or permanent injunctions under which specified promotional conduct is changed or curtailed. If we cannot successfully manage the promotion of our product candidates, if approved, we could become subject to significant liability, which would materially adversely affect our business and financial condition.

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

The availability of coverage and the adequacy of reimbursement by governmental healthcare programs such as Medicare and Medicaid, private health insurers and other third-party payors are essential for most patients to be able to afford prescription medications such as our product candidates, if approved. Our ability to achieve coverage and acceptable levels of reimbursement for our products by third-party payors will have an effect on our ability to successfully commercialize those products. Moreover, we are initially developing product candidates targeting rare muscle disorders with small patient populations. In order for products that are designed to treat smaller patient populations to be commercially viable, the reimbursement for such products must be higher, on a relative basis, to account for the lack of volume. Accordingly, we will need to implement a coverage and reimbursement strategy for any approved product candidate with a smaller patient population that accounts for the smaller potential market size. Even if we obtain coverage for a given product by a third-party payor, the resulting reimbursement payment rates may not be adequate or may require co-payments that patients find unacceptably high. For products administered under the supervision of a physician, obtaining coverage and adequate reimbursement may be particularly difficult because of the higher prices often associated with such drugs. Additionally, separate reimbursement for the product itself or the treatment or procedure in which the product is used may not be available, which may impact physician utilization.

We cannot be sure that coverage and reimbursement in the United States, the EU or elsewhere will be available for any product that we may develop, and that any coverage will be adequate. Further, any reimbursement that may become available may be decreased or eliminated in the future.

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

There is significant uncertainty related to third-party payor coverage and reimbursement of newly approved products. In the United States, third-party payors, including private and governmental payors, such as the Medicare and Medicaid programs, play an important role in determining the extent to which new drugs will be covered. Some third-party payors may require pre-approval of coverage for new or innovative devices or

drug therapies before they will reimburse healthcare providers who use such therapies. It is difficult to predict at this time what third-party payors will decide with respect to the coverage and reimbursement for our products.

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

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

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

We face significant competition, and if our competitors develop technologies or product candidates more rapidly than we do or their technologies are more effective, our business and our ability to develop and successfully commercialize products may be adversely affected.

The biotechnology and biopharmaceutical industries are characterized by rapid advancing technologies, intense competition and a strong emphasis on proprietary and novel products and product candidates. Our competitors have developed, are developing or may develop products, product candidates and processes competitive with our product candidates. Any product candidates that we successfully develop and commercialize will compete with existing therapies and new therapies that may become available in the future. We believe that a significant number of products are currently under development, and may become commercially available in the future, for the treatment of conditions for which we may attempt to develop product candidates. In particular, there is intense competition amongst RNA targeted therapies. Our competitors include larger and better funded pharmaceutical, biopharmaceutical, biotechnological and therapeutics companies. Moreover, we may also compete with universities and other research institutions who may be active in the indications we are targeting and could be in direct competition with us. We also compete with these organizations to recruit management, scientists and clinical development personnel, which could negatively affect our level of expertise and our ability to execute our business plan.

We will also face competition in establishing clinical trial sites, enrolling subjects for clinical trials and in identifying and in-licensing new product candidates. Smaller or early stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. Our clinical trials may compete with other clinical trials for product candidates that are in the same therapeutic areas as our product candidates, and this competition could reduce the number and types of patients available to us, because some patients who might have opted to enroll in our trials may instead opt to enroll in a trial being conducted by one of our competitors. Since the number of qualified clinical investigators is limited, we may conduct some of our clinical trials at the same clinical trial sites that some of our competitors use, which could reduce the number of patients who are available for our clinical trials in such clinical trial site.

We expect to face competition from existing products and products in development for each of our product candidates. There are currently no approved therapies to treat the underlying cause of DM1. Products currently in development to treat DM1 include: AMO-02, a GSK3-ß inhibitor in late-stage clinical development by AMO Pharma, Ltd. for the congenital phenotype of DM1; DYNE-101, an antibody fragment, or Fab, linked oligonucleotide that is being evaluated outside of the US in a Phase 1/2 clinical trial by Dyne Therapeutics Inc.; gene editing treatments in preclinical development by various companies collaborating with Vertex Pharmaceuticals, Inc., including Entrada Therapeutics, Inc.'s ENTR-701, an EEV-conjugated PMO. There is a growing number of companies in preclinical development pursuing different paths to treat DM1, including Design Therapeutics, Inc. and PepGen, Inc., and we expect that the space will continue to evolve as additional investigational therapies advance.

There are currently no approved therapies to treat the underlying cause of FSHD. Products currently in development to treat FSHD include: RO7204239, a monoclonal antibody against latent myostatin, which is currently being evaluated in a Phase 2 clinical trial by F. Hoffmann-La Roche AG; ARO-DUX4, an investigational RNAi therapeutic by Arrowhead Pharmaceuticals which was out-licensed to Sarepta Therapeutics, Inc. in November 2024, is currently being evaluated outside the U.S. in a Phase 1/2a trial. There is a growing number of companies in preclinical development pursuing different paths to treat FSHD, including, Dyne Therapeutics, miRecule, Inc./Sanofi S.A., Kate Therapeutics/Novartis, Armatus Bio/Solid Bio, and Celularity. We expect that the space will continue to evolve as additional investigational therapies advance.

Currently people with DMD are treated with corticosteroids to manage the inflammatory component of the disease. Deflazacort is an FDA approved corticosteroid marketed by PTC Therapeutics, Inc. Agameee is another approved corticosteroid marketed by Catalyst. Duvyzat is an HDAC inhibitor from Italfarmaco. In addition, there are three FDA approved exon skipping drugs utilizing unconjugated PMOs marketed by Sarepta Therapeutics, Inc.: EXONDYS 51 (Eteplirsen) for people with DMD amenable to Exon 51 skipping; VYONDYS 53 (golodirsen) for people with DMD amenable to Exon 53 skipping; and AMONDYS 45 (casimersen) for people with DMD amenable to Exon 45 skipping. There is an FDA approved exon skipping drug marketed by Nippon Shinyaku Co., Inc.: VILTEPSO (viltolarsen), an unconjugated PMO approved for people with DMD amenable to skipping Exon 53. We are developing treatments for DMD that target dystrophin mechanisms. Other companies pursuing a similar mechanism include Dyne Therapeutics with DYNE-251, a PMO conjugated to a Fab currently being evaluated in a Phase 1/2 clinical trial for patients amendable to Exon 51 skipping; Wave Life Sciences, Ltd. with WVE-N531, an unconjugated PN-modified exon-skipping oligonucleotide currently being evaluated in a Phase 1/2 clinical trial for patients amenable to Exon 53 skipping; PepGen with PGN-EDO51, a peptide-conjugated oligonucleotide for patients amenable to Exon 51 skipping being evaluated in a Phase 2 clinical trial; and PTC Therapeutics with ataluren, a small molecule targeting nonsense mutations in a Phase 3 clinical trial. While there are multiple programs in development for people with DMD amenable to skipping Exon 51 or 53, there are very few targeting Exon 44. NS Pharma, Inc. is running a Phase 2 trial with NS-089/NCNP-02 in people amenable to Exon 44 skipping in the US. In December 2022, Entrada’s program ENTR-601-44 was placed on a clinical hold prior to initiating Phase 1 development but has been evaluated in a Phase 1 study outside of the U.S. Companies are also approaching DMD with viral-vector based gene therapy programs that are a one-time treatment versus oligonucleotide-based exon skipping chronic treatments. There is one approved gene therapy for the delivery of microdystrophin mRNA, marketed as ELEVIDYS by Sarepta Therapeutics, Inc., fully approved for ambulatory DMD patients above the age of three and has received accelerated approval for non-ambulatory DMD patients above the age of three. Several other companies are developing microdystrophin-based gene therapies, including REGENEXBIO Inc. (RGX-202), Solid Biosciences Inc. (SGT-003), and Genethon (GNT-004). We are also aware of several companies targeting non-dystrophin mechanisms for the treatment of DMD. There is a growing number of companies in pursuing different paths to treat DMD, including Capricor Therapeutics, Inc., and we expect that the space will continue to evolve as additional investigational therapies advance.

We will also compete more generally with other companies developing alternative scientific and technological approaches, including other companies working to develop conjugates with oligonucleotides for extra-hepatic delivery, including Alnylam Pharmaceuticals, Inc., Aro Biotherapeutics Company, Dyne Therapeutics, Ionis Pharmaceuticals, Inc., Sarepta Therapeutics, PepGen, PeptiDream Inc. and Bicycle Therapeutics plc, as well as gene therapy and CRISPR approaches.

Many of our competitors, either alone or with strategic partners, have substantially greater financial, technical and human resources than we do. Accordingly, our competitors may be more successful than us in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining approval for treatments and achieving widespread market acceptance, rendering our treatments obsolete or non-

competitive. Merger and acquisition activity in the biotechnology and biopharmaceutical industries may result in even more resources being concentrated among a smaller number of our competitors. These companies also compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and patient registration for clinical trials and acquiring technologies complementary to, or necessary for, our programs. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. Our commercial opportunity could be substantially limited if our competitors develop and commercialize products that are more effective, safer, less toxic, more convenient or less expensive than our comparable products. In geographies that are critical to our commercial success, competitors may also obtain regulatory approvals before us, resulting in our competitors building a strong market position in advance of the entry of our products. In addition, our ability to compete may be affected in many cases by insurers or other third-party payors seeking to encourage the use of other drugs. The key competitive factors affecting the success of our programs are likely to be their efficacy, safety profile, convenience, level of promotional activity, intellectual property protection and availability of reimbursement.

If the market opportunities for our products are smaller than we believe they are, our revenue may be adversely affected, and our business may suffer.

The precise incidence and prevalence for all the conditions we aim to address with our product candidates are unknown. Our projections of both the number of people who have these diseases, as well as the subset of people with these diseases who have the potential to benefit from treatment with our product candidates, are based on our beliefs and estimates. These estimates have been derived from a variety of sources, including the scientific literature, surveys of clinics, patient foundations or market research, and may prove to be incorrect. Further, new trials may change the estimated incidence or prevalence of these diseases. The total addressable market across all of our product candidates will ultimately depend upon, among other things, the diagnosis criteria included in the final label for each of our product candidates approved for sale for these indications, the availability of alternative treatments and the safety, convenience, cost and efficacy of our product candidates relative to such alternative treatments, acceptance by the medical community and patient access, drug pricing and reimbursement. The number of patients in the United States and other major markets and elsewhere may turn out to be lower than expected, patients may not be otherwise amenable to treatment with our products or new patients may become increasingly difficult to identify or gain access to, all of which would adversely affect our results of operations and our business. Further, even if we obtain significant market share for our product candidates, because some of our potential target populations are very small, we may never achieve profitability despite obtaining such significant market share.

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

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

our products, either on our own or through arrangements with one or more third parties, we may not be able to generate any future product revenue and we would incur significant additional losses.

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

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

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

Risks Related to Our Business Operations and Industry

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

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

- the timing and cost of, and level of investment in, research, development, regulatory approval and commercialization activities relating to our product candidates, which may change from time to time;
- coverage and reimbursement policies with respect to our product candidates, if approved, and potential future drugs that compete with our products;
- the cost of manufacturing our product candidates, which may vary depending on the quantity of production and the terms of our agreements with third-party manufacturers;
- the timing and amount of the milestone or other payments we may receive under our current or future research and collaboration agreements; expenditures that we may incur to acquire, develop or commercialize additional product candidates and technologies;
- the level of demand for any approved products, which may vary significantly;

- future accounting pronouncements or changes in our accounting policies; and
- the timing and success or failure of preclinical studies or clinical trials for our product candidates or competing product candidates, or any other change in the competitive landscape of our industry, including consolidation among our competitors or partners.

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

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

We are dependent on the services of our management and other clinical and scientific personnel, and if we are not able to retain these individuals or recruit additional management or clinical and scientific personnel, our business will suffer.

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

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

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

We had 391 full-time employees as of February 14, 2025. As we continue development and pursue the potential commercialization of our product candidates, as well as function as a public company, we will need to expand our financial, development, regulatory, manufacturing, marketing and sales capabilities or contract with third parties to provide these capabilities for us. As our operations expand, we expect that we will need to manage additional relationships with various strategic partners, suppliers and other third parties.

Our future financial performance and our ability to develop and commercialize our product candidates and to compete effectively will depend, in part, on our ability to manage any future growth effectively.

We are subject to various federal, state and foreign healthcare laws and regulations, which could increase compliance costs, and our failure to comply with these laws and regulations could harm our results of operations and financial condition.

Our business operations and current and future arrangements with investigators, healthcare professionals, consultants, third-party payors and customers expose us to broadly applicable foreign, federal and state fraud and abuse and other healthcare laws and regulations. These laws may constrain the business

or financial arrangements and relationships through which we conduct our operations, including how we research, market, sell and distribute any products for which we obtain marketing approval. Such laws include:

- the federal Anti-Kickback Statute prohibits, among other things, individuals or entities from knowingly and willfully offering, paying, soliciting or receiving remuneration, directly or indirectly, overtly or covertly, in cash or in kind to induce or in return for purchasing, leasing, ordering or arranging for or recommending the purchase, lease or order of any item or service reimbursable under Medicare, Medicaid or other federal healthcare programs. A person or entity does not need to have actual knowledge of this statute or specific intent to violate it in order to have committed a violation;
- the federal civil and criminal false claims laws, including the civil False Claims Act, and civil monetary penalties laws prohibit, among other things, any individual or entity from knowingly presenting, or causing to be presented, a false claim for payment to the federal government, knowingly making, using or causing to be made or used a false record or statement material to a false or fraudulent claim to the federal government, or from knowingly making a false statement to avoid, decrease or conceal an obligation to pay money to the federal government. In addition, the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the civil False Claims Act;
- the federal civil monetary penalties laws, impose civil fines for, among other things, the offering or transfer of remuneration to a Medicare or state healthcare program beneficiary if the person knows or should know it is likely to influence the beneficiary's selection of a particular provider, practitioner, or supplier of services reimbursable by Medicare or a state healthcare program, unless an exception applies;
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, created additional federal criminal statutes that prohibit, among other things, knowingly and willfully executing a scheme to defraud any healthcare benefit program, including private third-party payors and knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services. Similar to the U.S. federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;
- the federal Physician Payments Sunshine Act requires certain manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children’s Health Insurance Program, with specific exceptions, to report annually to the Centers for Medicare & Medicaid Services, or CMS, information related to payments or other transfers of value made during the previous year to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors), certain other health care providers including, among others, physician assistants and nurse practitioners, and teaching hospitals, and applicable manufacturers and applicable group purchasing organizations to report annually to CMS ownership and investment interests held during the previous year by physicians as defined under statute and their immediate family members;
- analogous state and foreign laws and regulations, such as state anti-kickback and false claims laws, may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers;
- some state laws require biotechnology companies to comply with the biotechnology industry’s voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government and may require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures; and
- some state laws that require biotechnology companies to report information on the pricing of certain drug products; and some state and local laws require the registration or pharmaceutical sales representatives.

Efforts to ensure that our current and future business arrangements with third parties will comply with applicable healthcare laws and regulations will involve ongoing substantial costs. It is possible that

governmental authorities will conclude that our business practices may not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant penalties, including civil, criminal and administrative penalties, damages, fines, disgorgement, imprisonment, exclusion from participation in government funded healthcare programs, such as Medicare and Medicaid, integrity oversight and reporting obligations, contractual damages, reputational harm, diminished profits and future earnings and the curtailment or restructuring of our operations. Defending against any such actions can be costly, time-consuming and may require significant financial and personnel resources. Therefore, even if we are successful in defending against any such actions that may be brought against us, our business may be impaired. Further, if any of the physicians or other healthcare providers or entities with whom we expect to do business is found to be not in compliance with applicable laws, they may be subject to significant criminal, civil or administrative sanctions, including exclusions from government funded healthcare program.

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

In the United States and some foreign jurisdictions, there have been, and we expect there will continue to be, a number of legislative and regulatory changes and proposed changes to the healthcare system, including cost-containment measures that may reduce or limit coverage and reimbursement for newly approved drugs and affect our ability to profitably sell any product candidates for which we obtain marketing approval. In particular, there have been and continue to be a number of initiatives at the U.S. federal and state levels that seek to reduce healthcare costs and improve the quality of healthcare.

For example, in March 2010, the Patient Protection and Affordable Care Act, or the ACA, was enacted in the United States, which substantially changed the way healthcare is financed by both governmental and private insurers, and significantly affected the pharmaceutical industry. ACA provisions of importance to our product candidates established an annual, nondeductible fee on any entity that manufactures or imports specified branded prescription drugs and biologic agents; extended manufacturers' Medicaid rebate liability to covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations; expanded the entities eligible for enrollment in the 340B program; increased the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program; established a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in and conduct comparative clinical effectiveness research, along with funding for such research; and established a Center for Medicare and Medicaid Innovation at CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending.

Since its enactment, there have been executive, judicial and Congressional challenges to certain aspects of the ACA, and 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 will remain in force in its current form.

In addition, other legislative changes have been proposed and adopted since the ACA was enacted. These changes 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 through 2032. 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. On March 11, 2021, the American Rescue Plan Act of 2021 was signed into law, which eliminated the statutory Medicaid drug rebate cap, as of January 1, 2024. The rebate was previously capped at 100% of a drug's average manufacturer price.

Moreover, there has recently been heightened governmental scrutiny over the manner in which manufacturers set prices for their marketed products, which has resulted in several Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for pharmaceutical products.

Most significantly, in August 2022, President Biden signed the Inflation Reduction Act of 2022, or IRA, into law. This statute marks the most significant action by Congress with respect to the pharmaceutical 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, with prices that can be negotiated subject to a cap; imposes

rebates under Medicare Part B and Medicare Part D to penalize price increases that outpace inflation (first due in 2023); redesigns the Medicare Part D benefit (beginning in 2024); and replaces the Part D coverage gap discount program with a new manufacturer discount program (beginning in 2025). CMS has published the negotiated prices for the initial ten drugs, which will first be effective in 2026, and has published the list of the subsequent 15 drugs that will be subject to negotiation. The IRA permits the Secretary of the Department of Health and Human Services (HHS) to implement many of these provisions through guidance, as opposed to regulation, for the initial years. HHS has and will continue to issue and update guidance as these programs are implemented, although the Medicare drug price negotiation program is currently subject to legal challenges. 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. Some states have also enacted legislation creating so-called prescription drug affordability boards, which ultimately may attempt to impose price limits on certain drugs in these states. In addition, regional healthcare authorities and individual hospitals are increasingly using bidding procedures to determine which drugs and suppliers will be included in their healthcare programs Furthermore, there has been increased interest by third party payors and governmental authorities in reference pricing systems and publication of discounts and list prices.

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

We intend to participate in the Medicaid Drug Rebate Program and other governmental pricing programs. If we fail to comply with our reporting and payment obligations under any programs we participate in, we could be subject to additional reimbursement requirements, penalties, sanctions and fines, which could have a material adverse effect on our business, financial condition, results of operations and growth prospects.

Medicaid is a joint federal and state program administered by the states for low income and disabled beneficiaries. Manufacturers that participate in the Medicaid Drug Rebate Program, or MDRP, have certain price reporting obligations as a condition of having their covered outpatient drugs payable under Medicaid and, if applicable, under Medicare Part B. The MDRP requires the manufacturer to pay a rebate to state Medicaid programs every quarter for each unit of its covered outpatient drugs dispensed to Medicaid beneficiaries and paid for by a state Medicaid program. The rebate is based on pricing data that the manufacturer must report on a monthly and quarterly basis to the Centers for Medicare & Medicaid Services, or CMS, the federal agency that administers the MDRP and other governmental healthcare programs. These data include the average manufacturer price (AMP) for each drug and, in the case of innovator products, the best price, which in general represents the lowest price available from the manufacturer to certain entities in the U.S. in any pricing structure, calculated to include all sales and associated rebates, discounts and other price concessions. The Medicaid rebate consists of two components, the basic rebate and the additional rebate, which is triggered if the AMP for a drug increases faster than inflation. If the manufacturer becomes aware that its MDRP government price reporting submission for a prior quarter was incorrect or has changed as a result of recalculation of the pricing data, it must resubmit the corrected data for up to three years after those data originally were due. If the manufacturer fails to provide information timely or is found to have knowingly submitted false information to the government, it may be subject to civil monetary penalties and other sanctions, including termination from the MDRP. In the event that CMS terminates the manufacturer's rebate agreement pursuant to which the manufacturer participates in the MDRP, no federal payments would be available under Medicaid or Medicare Part B for its covered outpatient drugs. If we participate in the MDRP, our failure to comply with MDRP price reporting and rebate payment obligations could negatively impact our financial results.

In connection with Medicare Part B, a pharmaceutical manufacturer must provide CMS with average sales price (ASP) information for its drugs or biologicals payable under Part B on a quarterly basis. ASP is calculated based on a statutorily defined formula, as well as regulations and interpretations of the statute by

CMS. CMS uses this information to compute Medicare Part B payment rates, which consist of ASP plus a specified percentage. The Part B payment rate is the amount that CMS reimburses the provider for drugs and biologicals administered to Medicare beneficiaries.

The IRA imposes rebates under Medicare Part B and Medicare Part D that are triggered by price increases that outpace inflation (first due in 2023), as described under the risk factor "Recently enacted legislation, future legislation and healthcare reform measures may increase the difficulty and cost for us to commercialize our product candidates and may affect the prices we may set," above. The Medicare Part D rebate, if applicable, will be calculated on the basis of the AMP figures we will be required to report pursuant to the MDRP if we enroll in the MDRP. The Medicare Part B rebate, if applicable, will be calculated on the basis of the Part B payment rate, which in turn is based on the reported ASP figures.

Federal law requires that any company that participates in the MDRP also participate in the Public Health Service's 340B drug pricing program in order for federal funds to be available for the manufacturer's drugs under Medicaid and, if applicable, Medicare Part B. We intend to participate in the 340B program, which is administered by the Health Resources and Services Administration, or HRSA, and will requires us to charge statutorily defined covered entities no more than the 340B "ceiling price" for our covered outpatient drugs that receive approval. These 340B covered entities include a variety of community health clinics and other entities that receive health services grants from the Public Health Service, as well as hospitals that serve a disproportionate share of low income patients. The ACA expanded the list of covered entities to include certain free standing cancer hospitals, critical access hospitals, rural referral centers and sole community hospitals, but exempts "orphan drugs" from the ceiling price requirements for these covered entities. The 340B ceiling price is calculated using a statutory formula based on the AMP and rebate amount for the covered outpatient drug as calculated under the MDRP, and in general, products subject to Medicaid price reporting and rebate liability are also subject to the 340B ceiling price calculation and discount requirement. If we enroll in the 340B program, we must report 340B ceiling prices to HRSA on a quarterly basis, and HRSA publishes those prices to 340B covered entities. In addition, HRSA has finalized regulations regarding the calculation of the 340B ceiling price and the imposition of civil monetary penalties on manufacturers that knowingly and intentionally overcharge covered entities for 340B eligible drugs. HRSA has also finalized a revised regulation implementing an administrative dispute resolution process through which 340B covered entities may pursue claims against participating manufacturers for overcharges, and through which manufacturers may pursue claims against 340B covered entities for engaging in unlawful diversion or duplicate discounting of 340B drugs. If we enroll in the 340B program, our failure to comply 340B program requirements could negatively impact our financial results. Any additional future changes to the definition of average manufacturer price and the Medicaid rebate amount under legislation or regulation could affect our 340B ceiling price calculations and also negatively impact our financial results if we enroll in the 340B program.

In order for any product candidates, if approved, to be paid for with federal funds under the Medicaid and Medicare Part B programs and purchased by certain federal agencies and grantees, we also intend to participate in the U.S. Department of Veterans Affairs, or VA, Federal Supply Schedule, or FSS, pricing program. As part of this program, we will be required to make our products, if approved, available for procurement on an FSS contract under which we must comply with standard government terms and conditions and charge a price that is no higher than the statutory Federal Ceiling Price, or FCP, to four federal agencies (VA, U.S. Department of Defense, or DOD, Public Health Service, and U.S. Coast Guard). The FCP is based on the Non-Federal Average Manufacturer Price, or Non-FAMP, which we will be required to calculate and report to the VA on a quarterly and annual basis. Pursuant to applicable law, knowing provision of false information in connection with a Non-FAMP filing can subject a manufacturer to significant civil monetary penalties for each item of false information. The FSS pricing and contracting obligations also contain extensive disclosure and certification requirements.

We also intend to participate in the Tricare Retail Pharmacy program, under which we will be required to pay quarterly rebates on utilization of innovator products that are dispensed through the Tricare Retail Pharmacy network to Tricare beneficiaries. The rebates are calculated as the difference between the annual Non-FAMP and FCP. We will be required to list our innovator products on a Tricare Agreement in order for them to be eligible for DOD formulary inclusion. If we participate in the program and overcharge the government in connection with our FSS contract or Tricare Agreement, whether due to a misstated FCP or otherwise, we will be required to refund the difference to the government. Failure to make necessary disclosures and/or to identify contract overcharges could result in allegations against us under the False Claims Act and other laws and regulations. Unexpected refunds to the government, and responding to a government investigation or

enforcement action, would be expensive and time-consuming, and could have a material adverse effect on our business, financial condition, results of operations and growth prospects if we enroll in the program.

Individual states continue to consider and have enacted legislation to limit the growth of healthcare costs, including the cost of prescription drugs and combination products. A number of states have either implemented or are considering implementation of drug price transparency legislation. Requirements of pharmaceutical manufacturers under such laws include advance notice of planned price increases, reporting price increase amounts and factors considered in taking such increases, wholesale acquisition cost information disclosure to prescribers, purchasers, and state agencies, and new product notice and reporting. Such legislation could limit the price or payment for certain drugs, and a number of states are authorized to impose civil monetary penalties or pursue other enforcement mechanisms against manufacturers who fail to comply with drug price transparency requirements, including the untimely, inaccurate, or incomplete reporting of drug pricing information.

Pricing and rebate calculations vary among products and programs. The calculations are complex and are often subject to interpretation by us, governmental or regulatory agencies, and the courts. CMS, the Department of Health & Human Services Office of Inspector General, and other governmental agencies have pursued manufacturers that were alleged to have failed to report these data to the government in a timely or accurate manner. Governmental agencies may also make changes in program interpretations, requirements or conditions of participation, some of which may have implications for amounts previously estimated or paid. If we enroll in the government pricing programs, we cannot assure you that any submissions we are required to make under the MDRP, the 340B program, the VA/FSS program, the Tricare Retail Pharmacy Program, and other governmental drug pricing programs will not be found to be incomplete or incorrect.

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

We face an inherent risk of product liability as a result of the clinical trials of our product candidates and will face an even greater risk if we commercialize our product candidates. For example, we may be sued if our product candidates allegedly cause injury or are found to be otherwise unsuitable during product testing, manufacturing, marketing or sale. Any such product liability claims may include allegations of defects in manufacturing, defects in design, a failure to warn of dangers inherent in the product candidate, negligence, strict liability and a breach of warranties. Claims may be brought against us by clinical trial participants, patients or others using, administering or selling products that may be approved in the future. Claims could also be asserted under state consumer protection acts.

If we cannot successfully defend ourselves against product liability claims, we may incur substantial liabilities or be required to limit or cease the commercialization of our products. Even a successful defense would require significant financial and management resources. Regardless of the merits or eventual outcome, liability claims may result in:

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

We currently hold approximately $10 million in product liability insurance coverage in the aggregate. We may need to increase our insurance coverage as we expand our clinical trials or if we commence commercialization of our product candidates. Insurance coverage is increasingly expensive. Our inability to obtain and retain sufficient product liability insurance at an acceptable cost to protect against potential product

liability claims could prevent or inhibit the commercialization of our product candidates. Although we will maintain such insurance, any claim that may be brought against us could result in a court judgment or settlement in an amount that is not covered, in whole or in part, by our insurance or that is in excess of the limits of our insurance coverage. Our insurance policies will also have various exclusions, and we may be subject to a product liability claim for which we have no coverage. We may have to pay any amounts awarded by a court or negotiated in a settlement that exceed our coverage limitations or that are not covered by our insurance, and we may not have, or be able to obtain, sufficient capital to pay such amounts.

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

We do not carry insurance for all categories of risk that our business may encounter. Some of the policies we currently maintain include property, general liability, employment benefits liability, business automobile, workers' compensation, malicious invasion of our electronic systems, directors' and officers', employment practices, fiduciary liability, and product liability insurance. We do not know, however, if we will be able to maintain insurance with adequate levels of coverage. Any significant uninsured liability may require us to pay substantial amounts, which would adversely affect our financial position and results of operations.

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

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

Our business, including ongoing and planned clinical trials and preclinical studies, and financial condition, is subject to risks arising from pandemic and epidemic diseases.

Future pandemics or other public health epidemics, present substantial public health and economic challenges and may affect, as they have in the past, our employees, clinical trial subjects, physicians and other healthcare providers, communities and business operations, as well as the U.S. and global economies, supply chains and financial markets. Any resurgence of COVID-19 or emergence of variants thereof and any future pandemic or epidemic diseases may cause disruptions that could severely impact our business, preclinical studies, clinical trials and financial condition, including impairing our ability to raise capital when needed.

The extent to which the other outbreak of a pandemic or epidemic disease, impacts our results will depend on future developments that are highly uncertain and cannot be predicted, including new information that may emerge concerning the severity of the virus and the actions to contain its impact.

Further, to the extent any pandemic or epidemic disease, adversely affects our business and financial results, it may also have the effect of heightening many of the other risks described in this section.

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

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

sanctions against us, and remediation of any such findings could have an adverse effect on our business operations.

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

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

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

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

From time to time, we may consider strategic transactions, such as acquisitions of companies, asset purchases and out-licensing or in-licensing of intellectual property, products or technologies. For example, we have collaborations with Lilly and BMS pursuant to which we have granted them licenses to our intellectual property in connection with certain targets and issued to them certain of our securities. Additional potential transactions that we may consider in the future include a variety of business arrangements, including spin-offs, strategic partnerships, joint ventures, restructurings, divestitures, business combinations and investments. Any future transactions could increase our near and long-term expenditures, result in potentially dilutive issuances of our equity securities, including our common stock, or the incurrence of debt, contingent liabilities, amortization expenses or acquired in-process research and development expenses, any of which could affect our financial condition, liquidity and results of operations. Future acquisitions may also require us to obtain additional financing, which may not be available on favorable terms or at all.

These transactions may never be successful and may require significant time and attention of our management. In addition, the integration of any business that we may acquire in the future may disrupt our existing business and may be a complex, risky and costly endeavor for which we may never realize the full benefits of the acquisition. Accordingly, although there can be no assurance that we will undertake or successfully complete any additional transactions of the nature described above, any additional transactions

that we do complete could have a material adverse effect on our business, results of operations, financial condition and prospects.

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

We have incurred substantial losses during our history, do not expect to become profitable in the near future and may never achieve profitability. To the extent that we continue to incur losses for tax purposes, or NOLs, such NOLs will carry forward to offset future taxable income, if any, until such unused losses expire (if subject to expiration). At December 31, 2024, we had federal and state NOLs of approximately $249.4 million and $439.3 million, respectively.

Under the Tax Cuts and Jobs Act of 2017, or the Tax Act, as modified by the Coronavirus Aid, Relief, and Economic Security Act, or the CARES Act, federal NOLs generated in periods after December 31, 2017, may be carried forward indefinitely but may only be used to offset 80% of our taxable income in years beginning after December 31, 2020. Under the CARES Act, NOLs arising in tax years beginning after December 31, 2017 and before January 1, 2021 may be carried back to each of the five tax years preceding the tax year of such loss. Because we had no taxable income in our tax year ended December 31, 2019, which was our first corporate tax year, we do not anticipate that such provision of the CARES Act will be relevant to us. It is uncertain if and to what extent various states will conform to the Tax Act or the CARES Act.

In addition, our NOLs and other tax attributes are subject to review and possible adjustment by the IRS, and state tax authorities. Under Section 382 of the Internal Revenue Code of 1986, as amended, or the Code, our federal NOLs may become subject to an annual limitation in the event of certain cumulative changes in the ownership of our company. An “ownership change” pursuant to Section 382 of the Code generally occurs if one or more stockholders or groups of stockholders who own at least 5% of a company’s stock increase their ownership by more than 50 percentage points over their lowest ownership percentage within a rolling three-year period. Our ability to utilize our NOLs and other tax attributes to offset future taxable income or tax liabilities may be limited as a result of ownership changes, including potential changes in connection with our initial public offering, or IPO, that was completed in June 2020, our subsequent public offerings or any future offerings. Similar rules may apply under state tax laws.

Inflation could adversely affect our business and results of operations.

From 2021 to 2024, the U.S. economy experienced a material level of inflation. The impact of geopolitical developments, such as the conflicts in Ukraine and the Middle East may continue to increase uncertainty in the outlook of near-term and long-term economic activity, including any impacts on inflation. Increases in inflation raise our costs for commodities, labor, materials and services and other costs required to grow and operate our business, and failure to secure these on reasonable terms may adversely impact our financial condition. Additionally, increases in inflation, along with the uncertainties surrounding geopolitical developments and global supply chain disruptions, have caused, and may in the future cause, global economic uncertainty and uncertainty about the interest rate environment, which may make it more difficult, costly or dilutive for us to secure additional financing. Historically, the price of our common stock has been highly sensitive to actual or anticipated changes in the interest rate environment. A failure to adequately respond to these risks could have a material adverse impact on our financial condition, results of operations or cash flows.

Risks Related to Our Intellectual Property

If we are unable to obtain and maintain patent protection for our therapeutic programs and other proprietary technologies we develop, or if the scope of the patent protection obtained is not sufficiently broad, our competitors could develop and commercialize products and technology similar or identical to ours, and our ability to successfully commercialize our therapeutic programs and other proprietary technologies we may develop may be adversely affected.

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 therapeutic programs and other proprietary technologies we may develop. We seek to protect our proprietary position, in part, by filing patent applications in the United States and abroad relating to our therapeutic programs and other proprietary technologies we may develop. If we are unable to obtain or maintain patent protection with respect to our therapeutic programs and other proprietary technologies we may develop, our business, financial condition, results of operations and prospects could be materially harmed.

Changes in either the patent laws or their interpretation in the United States and other countries 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 protection. We cannot predict whether the patent applications we are currently pursuing will issue as patents in any particular jurisdiction or whether the claims of any issued patents will provide sufficient protection against competitors or other third parties.

The patent prosecution process is expensive, time-consuming, and complex, and we may not be able to file, prosecute, maintain, enforce, or license all necessary or desirable patent applications at a reasonable cost or in a timely manner. It is also possible that we will fail to identify patentable aspects of our research and development output in time to obtain patent protection. Although we enter into non-disclosure and confidentiality agreements with parties who have access to confidential or patentable aspects of our research and development output, such as our employees, corporate collaborators, outside scientific collaborators, CROs, contract manufacturers, consultants, advisors and other third parties, any of these parties may breach the agreements and disclose such output before a patent application is filed, thereby jeopardizing our ability to seek patent protection. In addition, our ability to obtain and maintain valid and enforceable patents depends on whether the differences between our inventions and the prior art allow our inventions to be patentable over the prior art.

Furthermore, publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, or in some cases not at all. Therefore, we cannot be certain that we or our licensors were the first to make the inventions claimed in any of our owned or licensed patents or pending patent applications, or that we or our licensors were the first to file for patent protection of such inventions. The patent position of biotechnology and pharmaceutical companies generally is highly uncertain, involves complex legal and factual questions and has been the subject of much litigation in recent years. As a result, the issuance, scope, validity, enforceability and commercial value of our patent rights are highly uncertain. Our patent applications may not result in patents being issued which protect our therapeutic programs and other proprietary technologies we may develop, or which effectively prevent others from commercializing competitive technologies and products.

Moreover, the claim coverage in a patent application can be significantly reduced before the patent is granted. Even if our patent applications issue as patents, they may not issue in a form that will provide us with any meaningful protection, prevent competitors or other third parties from competing with us or otherwise provide us with any competitive advantage. Any patents issuing from our patent applications may be challenged, narrowed, circumvented or invalidated by third parties. Consequently, we do not know whether our therapeutic programs and other proprietary technology will be protectable or remain protected by valid and enforceable patents. Even if a patent is granted, our competitors or other third parties may be able to circumvent the patent by developing similar or alternative technologies or products in a non-infringing manner which could materially adversely affect our business, financial condition, results of operations and prospects. In addition, given the amount of time required for the development, testing and regulatory review of our therapeutic programs and eventual product candidates, patents protecting the product candidates might expire before or shortly after such product candidates are commercialized. As a result, our intellectual property may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours.

The issuance of a patent is not conclusive as to its inventorship, scope, validity, or enforceability and our patents may be challenged in the courts or patent offices in the United States and abroad. We may be subject to a third-party pre-issuance submission of prior art to the United States Patent and Trademark Office, or the USPTO, or become involved in opposition, derivation, revocation, reexamination, post-grant and inter partes review, or other similar proceedings challenging our patent rights. An adverse determination in any such submission, proceeding or litigation could reduce the scope of, or invalidate or render unenforceable, our patent rights, allow third parties to commercialize our therapeutic programs and other proprietary technologies we may develop and compete directly with us, without payment to us, or result in our inability to manufacture or commercialize products without infringing third-party patent rights. Such proceedings also may result in substantial cost and require significant time from our scientists and management, even if the eventual outcome is favorable to us.

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

Filing, prosecuting and defending patents on our therapeutic programs and other proprietary technologies we may develop in all countries throughout the world would be prohibitively expensive, and the

laws of foreign countries may not protect our rights to the same extent as the laws of 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 is not as strong as that in the United States. These products may compete with our products, and our patents or other intellectual property rights may not be effective or sufficient 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 protection, particularly those relating to biotechnology products, which could make it difficult for us to stop the infringement of our patents or marketing of competing products in violation of our intellectual property and proprietary rights generally. In addition, some jurisdictions, such as Europe, Japan and China, may have a higher standard for patentability than in the United States, including, for example, the requirement of claims having literal support in the original patent filing and the limitation on using supporting data that is not in the original patent filing. Under those heightened patentability requirements, we may not be able to obtain sufficient patent protection in certain jurisdictions even though the same or similar patent protection can be secured in U.S. and other jurisdictions.

Proceedings to enforce our intellectual property and proprietary rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly, could put our patent applications at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate, and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property and proprietary rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop.

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

In Europe, beginning June 1, 2023, European applications and patents may be subject to the jurisdiction of the Unified Patent Court, or UPC, unless they explicitly opt out. Also, European applications will have the option, upon grant of a patent, of becoming a Unitary Patent, which will be subject to the jurisdiction of the UPC. This will present a significant change in European patent practice. As the UPC is a new entity, there is no applicable precedent on which we may rely, increasing the uncertainty of any outcome from the UPC. As a single entity can now invalidate a European patent, we may opt out of the UPC in certain cases, in which case each of our European patents would need to be challenged on a country-by-country basis.

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

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

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

Changes in either the patent laws or interpretation of the patent laws in the United States could increase the uncertainties and costs surrounding the prosecution of patent applications and the enforcement or defense of issued patents. Assuming that other requirements for patentability are met, prior to March 2013, in the United States, the first to invent the claimed invention was entitled to the patent, while outside the United States, the first to file a patent application was entitled to the patent.

After March 2013, under the Leahy-Smith America Invents Act, or the America Invents Act, enacted in September 2011, the United States transitioned to a first inventor to file system in which, assuming that other requirements for patentability 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 us 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 were the first to either (i) file any patent application related to our therapeutic programs and other proprietary technologies we may develop or (ii) invent any of the inventions claimed in our patent applications.

The America Invents Act also includes a number of significant changes that affect the way patent applications will be prosecuted and also may affect patent litigation. 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. Because of a lower evidentiary standard in USPTO proceedings compared to the evidentiary standard in United States federal courts necessary to invalidate a patent claim, a third party could potentially provide evidence in a USPTO proceeding sufficient for the USPTO to hold a claim invalid even though the same evidence would be insufficient to invalidate the claim if first presented in a district court action. Accordingly, a third party may attempt to use the USPTO procedures to invalidate our patent claims that would not have been invalidated if first challenged by the third party as a defendant in a district court action. Therefore, the America Invents Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of patents issuing from those patent applications, all of which could have a material adverse effect on our business, financial condition, results of operations and prospects.

In addition, the patent positions of companies in the development and commercialization of biologics and pharmaceuticals are particularly uncertain. The U.S. Supreme Court has ruled on several patent cases in recent years, either narrowing the scope of patent protection available in certain circumstances or weakening the rights of patent owners in certain situations. It is unpredictable how decisions by the U.S. federal courts, the U.S. Congress or the USPTO may impact the value of our patent rights. For example, the U.S. Supreme Court held in Amgen v. Sanofi (2023) that a functionally claimed genus was invalid for failing to comply with the enablement requirement of the Patent Act. In addition, the U.S. Court of Appeals for the Federal Circuit recently issued a decision involving the interaction of a patent term adjustment, terminal disclaimers, and obvious-type double patenting. This combination of events has created uncertainty with respect to the validity and enforceability of patents, once obtained. Depending on future actions by the U.S. Congress, the U.S. federal courts and the USPTO, the laws and regulations governing patents could change in unpredictable ways that could have a material adverse effect on our existing patent portfolio and our ability to protect and enforce our intellectual property in the future.

Issued patents covering our therapeutic programs and other proprietary technologies we may develop could be found invalid or unenforceable if challenged in court or before administrative bodies in the United States or abroad.

If we initiated legal proceedings against a third party to enforce a patent covering our therapeutic programs and other proprietary technologies we may develop, the defendant could counterclaim that such patent is invalid or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness or non-enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent

withheld relevant information from the USPTO, or made a misleading statement, during prosecution. Third parties may raise claims challenging the validity or enforceability of a patent before administrative bodies in the United States or abroad, even outside the context of litigation. Such mechanisms include re-examination, post-grant review, inter partes review, derivation proceedings, and equivalent proceedings in foreign jurisdictions (e.g., opposition proceedings). Such proceedings could result in the revocation of, cancellation of or amendment to our patents in such a way that they no longer cover our therapeutic programs and other proprietary technologies we may develop. The outcome following legal assertions of invalidity and unenforceability is unpredictable. With respect to the validity question, for example, we cannot be certain that there is no invalidating prior art, of which we or our licensing partners and the patent examiner were unaware during prosecution. If a third party were to prevail on a legal assertion of invalidity or unenforceability, we would lose at least part, and perhaps all, of the patent protection on our therapeutic programs and other proprietary technologies we may develop. Such a loss of patent protection would have a material adverse impact on our business, financial condition, results of operations and prospects.

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

Depending upon the timing, duration and specifics of any FDA marketing approval of any product candidate we may develop, one or more of patents issuing from our U.S. patent applications may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Action of 1984, or the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent term extension, or PTE, of up to five years as compensation for patent term lost during the FDA regulatory review process. A PTE cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval, only one patent may be extended and only those claims covering the approved drug, a method for using it or a method for manufacturing it may be extended. Similar patent term restoration provisions to compensate for commercialization delay caused by regulatory review are also available in certain foreign jurisdictions, such as in Europe under Supplemental Protection Certificate, or SPC.

We may be subject to claims challenging the inventorship 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 patent rights, trade secrets, or other intellectual property as an inventor or co-inventor. For example, we may have inventorship disputes arise from conflicting obligations of consultants or others who are involved in developing our therapeutic programs and other proprietary technologies we may develop. Litigation may be necessary to defend against these and other claims challenging inventorship or our patent rights, trade secrets or other intellectual property. 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, intellectual property that is important to our therapeutic programs and other proprietary technologies we may develop. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to our management and other employees. Any of the foregoing could have a material adverse effect on our business, financial condition, results of operations and prospects.

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

In addition to seeking patent protection for our therapeutic programs and other proprietary technologies we may develop, we also rely on trade secrets and confidentiality agreements to protect our unpatented know-how, technology, and other proprietary information and to maintain our competitive position. With respect to our AOC platform and development programs, we consider trade secrets and know-how to be one of our important sources of intellectual property, including our extensive knowledge of the modulation of RNA processes using oligonucleotides and siRNA, oligonucleotide drug delivery techniques and antibody conjugation. Trade secrets and know-how can be difficult to protect. In particular, the trade secrets and know-how in connection with our AOC platform, development programs and other proprietary technology we may develop may over time be disseminated within the industry through independent development, the publication of journal articles describing the methodology and the movement of personnel with scientific positions in academic and industry.

We seek to protect these trade secrets and other proprietary technology, in part, by entering into non-disclosure and confidentiality agreements with parties who have access to them, such as our employees, corporate collaborators, outside scientific collaborators, CROs, contract manufacturers, consultants, advisors

and other third parties. We also enter into confidentiality and invention or patent assignment agreements with our employees and consultants. We cannot guarantee that we have entered into such agreements with each party that may have or have had access to our trade secrets or proprietary technology and processes. 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. In addition, some courts inside and outside the United States are less willing or unwilling to protect trade secrets. 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. If any of our trade secrets were to be disclosed to or independently developed by a competitor or other third party, our competitive position would be materially and adversely harmed.

We may be subject to claims that third parties have an ownership interest in our trade secrets. For example, we may have disputes arise from conflicting obligations of our employees, consultants or others who are involved in developing our product candidate. Litigation may be necessary to defend against these and other claims challenging ownership of our trade secrets. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable trade secret rights, such as exclusive ownership of, or right to use, trade secrets that are important to our therapeutic programs and other proprietary technologies we may develop. 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 our management and other employees.

We may not be successful in obtaining necessary rights to any product candidate we may develop through acquisitions and in-licenses.

We currently solely own intellectual property rights covering our therapeutic programs. Other pharmaceutical companies and academic institutions may also have filed or are planning to file patent applications potentially relevant to our business. In order to avoid infringing these third-party patents, we may find it necessary or prudent to obtain licenses to such patents from such third-party intellectual property holders. However, we may be unable to secure such licenses or otherwise acquire or in-license any compositions, methods of use, processes or other intellectual property rights from third parties that we identify as necessary for our therapeutic programs and other proprietary technologies we may develop.

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

We may be subject to claims that our employees, consultants or advisors have wrongfully used or disclosed alleged trade secrets of their current or former employers or claims asserting ownership of what we regard as our own intellectual property.

Some of our employees, consultants and advisors are currently or were previously employed at universities or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees, consultants and advisors 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 these individuals have used or disclosed intellectual property, including trade secrets or other proprietary information, of any such individual's current or former employer. Litigation may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to our management.

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.

Third-party claims of intellectual property infringement, misappropriation or other violations against us or our collaborators may prevent or delay the development and commercialization of our therapeutic programs and other proprietary technologies we may develop.

Our commercial success depends in part on our ability to avoid infringing, misappropriating and otherwise violating the patents and other intellectual property rights of third parties. There is a substantial amount of complex litigation involving patents and other intellectual property rights in the biotechnology and pharmaceutical industries, as well as administrative proceedings for challenging patents, including interference, derivation and reexamination proceedings before the USPTO or oppositions and other comparable proceedings in foreign jurisdictions. As discussed above, recently, due to changes in U.S. law referred to as patent reform, new procedures including inter partes review and post-grant review have also been implemented. As stated above, this reform adds uncertainty to the possibility of challenge to our patents in the future.

Numerous U.S. and foreign issued patents and pending patent applications owned by third parties exist in the fields in which we are commercializing or plan to commercialize our therapeutic programs and in which we are developing other proprietary technologies. As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that our therapeutic programs and commercializing activities may give rise to claims of infringement of the patent rights of others. We cannot assure you that our therapeutic programs and other proprietary technologies we may develop will not infringe existing or future patents owned by third parties. We may not be aware of patents that have already been issued and that a third party, for example, a competitor in the fields in which we are developing our therapeutic programs, might assert as infringed by us. It is also possible that patents owned by third parties of which we are aware, but which we do not believe we infringe or that we believe we have valid defenses to any claims of patent infringement, could be found to be infringed by us. It is not unusual that corresponding patents issued in different countries have different scopes of coverage, such that in one country a third-party patent does not pose a material risk, but in another country, the corresponding third-party patent may pose a material risk to our planned products. As such, we monitor third-party patents in the relevant pharmaceutical markets. In addition, because patent applications can take many years to issue, there may be currently pending patent applications that may later result in issued patents that we may infringe. Generative artificial intelligence (AI) resources that are publicly available also present a risk that a company may inadvertently obtain, incorporate or use a third party's intellectual property.

In the event that any third party claims that we infringe their patents or that we are otherwise employing their proprietary technology without authorization and initiates litigation against us, even if we believe such claims are without merit, a court of competent jurisdiction could hold that such patents are valid, enforceable and infringed by us. In this case, the holders of such patents may be able to block our ability to commercialize the infringing products or technologies unless we obtain a license under the applicable patents, 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 are able to obtain a license, the license would likely obligate us to pay license fees or royalties or both, and the rights granted to us might be nonexclusive, which could result in our competitors gaining access to the same intellectual property. If we are unable to obtain a necessary license to a third-party patent on commercially reasonable terms, we may be unable to commercialize the infringing products or technologies or such commercialization efforts may be significantly delayed, which could in turn significantly harm our business.

Defense of infringement 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, and may impact our reputation. In the event of a successful claim of infringement against us, we may be enjoined from further developing or commercializing the infringing products or technologies. In addition, 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 and/or redesign our infringing products or technologies, which may be impossible or require substantial time and monetary expenditure. In that event, we would be unable to

further develop and commercialize our product candidate or technologies, which could harm our business significantly. Further, we cannot predict whether any required license would be available at all or whether it would be available on commercially reasonable terms. In the event that we could not obtain a license, we may be unable to further develop our product candidate and commercialize our product, if approved, which could harm our business significantly. Even if we are able to obtain a license, the license would likely obligate us to pay license fees or royalties or both, and the rights granted to us might be nonexclusive, which could result in our competitors gaining access to the same intellectual property. Ultimately, we could be prevented from commercializing a product, or be forced to cease some aspect of our business operations, if, as a result of actual or threatened patent infringement claims, we are unable to enter into licenses on acceptable terms.

Engaging in litigation defending against third parties alleging infringement of patent and other intellectual property rights is very expensive, particularly for a company of our size, and time-consuming. Some of our competitors may be able to sustain the costs of litigation or administrative proceedings more effectively than we can because of greater financial resources. Patent litigation and other proceedings may also absorb significant management time. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could impair our ability to compete in the marketplace. The occurrence of any of the foregoing could have a material adverse effect on our business, financial condition or results of operations.

We may in the future pursue invalidity proceedings with respect to third-party patents. The outcome following legal assertions of invalidity is unpredictable. Even if resolved in our favor, these legal proceedings may cause us to incur significant expenses and could distract our technical and management personnel from their normal responsibilities. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock. Such proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing or distribution activities. We may not have sufficient financial or other resources to conduct such proceedings adequately. Some of these third parties may be able to sustain the costs of such proceedings more effectively than we can because of their greater financial resources. If we do not prevail in the patent proceedings the third parties may assert a claim of patent infringement directed at our product candidates.

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

Third parties, such as a competitor, may infringe our patent rights. In an infringement proceeding, a court may decide that a patent owned by us is invalid or unenforceable or may refuse to stop the other party from using the invention at issue on the grounds that the patent does not cover the technology in question. In addition, our patent rights may become involved in inventorship, priority or validity disputes. To counter or defend against such claims can be expensive and time consuming. An adverse result in any litigation proceeding could put our patent rights at risk of being invalidated or interpreted narrowly. 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.

Even if resolved in our favor, litigation or other legal proceedings relating to intellectual property claims may cause us to incur significant expenses and could distract our personnel from their normal responsibilities. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments, and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing or distribution activities. We may not have sufficient financial or other resources to conduct such litigation or proceedings adequately. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources 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.

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

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

We may not be able to protect our rights to these trademarks and trade names, which we need to build name recognition among potential partners or customers in our markets of interest. At times, competitors 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. Over the long term, if we are unable to establish name recognition based on our trademarks and trade names, then we may not be able to compete effectively and our business may be adversely affected. Our efforts to enforce or protect our proprietary rights related to trademarks, trade names, domain name or other intellectual property may be ineffective and could result in substantial costs and diversion of resources and could adversely affect our business, financial condition, results of operations and prospects.

Intellectual property rights do not necessarily address all potential threats.

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 products that are similar to our product candidate or utilize similar technology that are not covered by the claims of the patents that we license or may own;
- we might not have been the first to make the inventions covered by our current or future patent applications;
- we might not have been the first to file patent applications covering 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 current or future patent applications will not lead to issued patents;
- any patent issuing from our current or future patent applications may be held invalid or unenforceable, including as a result of legal challenges by our competitors or other third parties;
- our competitors or other third parties 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;
- the patents of others may harm our business; and

- we may choose not to file for patent protection in order to maintain certain trade secrets or know-how, and a third party may subsequently file a patent application covering such intellectual property.

Intellectual property discovered through government funded programs may be subject to federal regulations such as "march-in" rights, certain reporting requirements and a preference for United States-based companies. Compliance with such regulations may limit our exclusive rights and limit our ability to contract with non-United States manufacturers.

Although we do not currently own issued patents or pending patent applications that have been generated through the use of United States government funding, our licensed patents and patent applications from Fred Hutchinson Cancer Center have been generated through the use of United States government funding or grants. Pursuant to the Bayh-Dole Act of 1980, the United States government has certain rights in inventions developed with government funding. On December 8, 2023, the National Institute of Standards and Technology (NIST) released the Draft Interagency Guidance Framework for Considering the Exercise of March-In Rights (Guidance) to the public for comment. The Guidance represents the first federal framework specifying that price can be a factor in considering whether the government may exercise its march-in authority pursuant to 35 U.S.C. 200 et seq. (Bayh-Dole). These United States government march-in rights include a non-exclusive, non-transferable, irrevocable worldwide license to use inventions for any governmental purpose. In addition, the United States government has the right, under certain limited circumstances, to require us to grant exclusive, partially exclusive, or non-exclusive licenses to any of these inventions to a third party if it determines that: (1) adequate steps have not been taken to commercialize the invention; (2) government action is necessary to meet public health or safety needs; or (3) government action is necessary to meet requirements for public use under federal regulations, also referred to as march-in rights. If the United States government exercised its march-in rights in our future intellectual property rights that are generated through the use of United States government funding or grants, we could be forced to license or sublicense intellectual property developed by us or that we license on terms unfavorable to us, and there can be no assurance that we would receive compensation from the United States government for the exercise of such rights. The United States government also has the right to take title to these inventions if the grant recipient fails to disclose the invention to the government or fails to file an application to register the intellectual property within specified time limits. Intellectual property generated under a government funded program is also subject to certain reporting requirements, compliance with which may require us to expend substantial resources. In addition, the United States government requires that any products embodying any of these inventions or produced through the use of any of these inventions be manufactured substantially in the United States. This preference for United States industry may be waived by the federal agency that provided the funding if the owner or assignee of the intellectual property can show that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the United States or that under the circumstances domestic manufacture is not commercially feasible. This preference for United States industry may limit our ability to contract with non-United States product manufacturers for products covered by such intellectual property.

We partially depend on intellectual property licensed from third parties, and our licensors may not always act in our best interest. If we fail to comply with our obligations under our intellectual property licenses, if the licenses are terminated or if disputes regarding these licenses arise, we could lose significant rights that are important to our business.

We are dependent, in part, on patents, know-how and proprietary technology licensed from others. Our licenses to such patents, know-how and proprietary technology may not provide exclusive rights in all relevant fields of use and in all territories in which we may wish to develop or commercialize our products in the future. The agreements under which we license patents, know-how and proprietary technology from others are complex, and certain provisions in such agreements may be susceptible to multiple interpretations.

For example, we are a party to an exclusive worldwide license with the University of Alberta, pursuant to which we in-licensed key patent applications for our Exon 51 skipping AOC for DMD and future product candidates. If we fail to comply with obligations under any license agreements, our licensors may have the right to terminate our license, in which event we would not be able to develop or market technology or product candidates covered by the intellectual property licensed under these agreements. In addition, we may need to obtain additional licenses from our existing licensors and others to advance our research or allow commercialization of product candidates we may develop. It is possible that we may be unable to obtain any

additional licenses at a reasonable cost or on reasonable terms, if at all. In either event, we may be required to expend significant time and resources to redesign our technology, product candidates, or the methods for manufacturing them or to develop or license replacement technology, all of which may not be feasible on a technical or commercial basis. If we are unable to do so, we may be unable to develop or commercialize the affected technology or product candidates.

If we or our licensors fail to adequately protect our licensed intellectual property, our ability to commercialize product candidates could suffer. We do not have complete control over the maintenance, prosecution and litigation of our in-licensed patents and patent applications and may have limited control over future intellectual property that may be in-licensed. For example, we cannot be certain that activities such as the maintenance and prosecution by our licensors have been or will be conducted in compliance with applicable laws and regulations or will result in valid and enforceable patents and other intellectual property rights. It is possible that our licensors' infringement proceedings or defense activities may be less vigorous than had we conducted them ourselves or may not be conducted in accordance with our best interests.

In addition, 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 patents, know-how and proprietary technology, or increase what we believe to be our financial or other obligations under the relevant agreement. Disputes that may arise between us and our licensors regarding intellectual property subject to a license agreement could include disputes regarding:

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

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 technology or product candidates. As a result, any termination of or disputes over our intellectual property licenses could result in the loss of our ability to develop and commercialize our AOC platform, or AOC products, or we could lose other significant rights, any of which could have a material adverse effect on our business, financial condition, results of operations and prospects.

For example, our agreements with certain of our third-party research partners provide that improvements developed in the course of our relationship may be owned solely by either us or our third-party research partner, or jointly between us and the third party. If we determine that rights to such improvements owned solely by a research partner or other third party with whom we collaborate are necessary to commercialize our product candidates or maintain our competitive advantage, we may need to obtain a license from such third party in order to use the improvements and continue developing, manufacturing or marketing our product candidates. We may not be able to obtain such a license on an exclusive basis, on commercially reasonable terms, or at all, which could prevent us from commercializing our product candidates or allow our competitors or others the chance to access technology that is important to our business. We also may need the cooperation of any co-owners of our intellectual property in order to enforce such intellectual property against third parties, and such cooperation may not be provided to us.

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

The growth of our business may depend in part on our ability to acquire, in-license or use third-party proprietary rights. For example, our product candidates may require specific formulations to work effectively and efficiently, we may develop product candidates containing our compounds and pre-existing pharmaceutical compounds, or we may be required by the FDA or comparable foreign regulatory authorities to provide a companion diagnostic test or tests with our product candidates, any of which could require us to obtain rights to

use intellectual property held by third parties. In addition, with respect to any patents we may co-own with third parties, we may require licenses to such co-owners' interest to such patents. We may be unable to acquire or in-license any compositions, methods of use, processes or other third-party intellectual property rights from third parties that we identify as necessary or important to our business operations. In addition, we may fail to obtain any of these licenses at a reasonable cost or on reasonable terms, if at all. Were that to happen, we may need to cease use of the compositions or methods covered by those third-party intellectual property rights, and may need to seek to develop alternative approaches that do not infringe on those intellectual property rights, which may entail additional costs and development delays, even if we were able to develop such alternatives, which may not be feasible. Even if we are able to obtain a license, it may be non-exclusive, which means that our competitors may also receive access to the same technologies licensed to us. In that event, we may be required to expend significant time and resources to develop or license replacement technology.

Additionally, we sometimes collaborate with academic institutions to accelerate our preclinical research or development under written agreements with these institutions. In certain cases, these institutions provide us with an option to negotiate a license to any of the institution's rights in technology resulting from the collaboration. Even if we hold such an option, we may be unable to negotiate a license from the institution within the specified timeframe or under terms that are acceptable to us. If we are unable to do so, the institution may offer the intellectual property rights to others, potentially blocking our ability to pursue our program.

The licensing and acquisition of third-party intellectual property rights is a competitive area, 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 size, cash resources and greater clinical development and commercialization capabilities. In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us. There can be no assurance that we will be able to successfully complete these types of negotiations and ultimately acquire the rights to the intellectual property surrounding the additional product candidates that we may seek to develop or market. 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 certain programs and our business financial condition, results of operations and prospects could suffer.

We, our collaborators and our service providers may be subject to a variety of data privacy and security laws and contractual obligations, which could increase compliance costs and our actual or alleged failure to comply with them could subject us to potentially significant fines or penalties, regulatory investigations, negative publicity, liability or otherwise harm our business, results of operations and financial condition.

We maintain a large quantity of sensitive information, including confidential business and patient health information in connection with our preclinical studies, and are subject to laws and regulations governing the privacy and security of such information. The global data protection landscape is rapidly evolving, and we are or may become subject to numerous state, federal and foreign laws, requirements and regulations governing the collection, use, disclosure, retention and security of personal information, including as our operations continue to expand or if we operate in foreign jurisdictions. 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. Any failure or perceived failure by us to comply with federal, state or foreign laws or regulations, our internal policies and procedures or our contracts governing our processing of personal information could result in negative publicity, government investigations and enforcement actions, claims by third parties and damage to our reputation, any of which could have a material adverse effect on our business, results of operation, and financial condition.

In the United States, there are numerous federal and state data privacy and security laws and regulations governing the collection, use, disclosure and protection of personal information, including federal and state health information privacy laws, security breach notification laws and consumer protection laws. Each of these laws is subject to varying interpretations and constantly evolving. By way of example, the regulations promulgated under HIPAA and the Health Information Technology for Economic and Clinical Health Act impose, among other things, certain standards relating to the privacy, security, transmission and breach reporting of

individually identifiable health information. While we do not believe that we are currently acting as a covered entity or business associate under HIPAA and thus are not directly regulated under HIPAA, any person may be prosecuted under HIPAA's criminal provisions either directly or under aiding-and-abetting or conspiracy principles. Consequently, depending on the facts and circumstances, we could face substantial criminal 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.

The U.S. Federal Trade Commission, or the 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 FTC failing to take appropriate steps to keep consumers' personal information secure may constitute unfair acts or practices in or affecting commerce in violation of Section 5(a) of the Federal Trade Commission 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. Individually identifiable health information is considered sensitive data that merits stronger safeguards.

In addition, certain state laws govern the privacy and security of health-related and other personal information in certain circumstances, some of which are more stringent than HIPAA and many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts. For example, the CCPA requires covered businesses that process the personal information of California residents to, among other things: (i) provide certain disclosures to California residents regarding the business's collection, use, and disclosure of their personal information; (ii) receive and respond to requests from California residents to access, delete, and correct their personal information, or to opt out of certain disclosures of their personal information; and (iii) enter into specific contractual provisions with service providers that process California resident personal information on the business's behalf. Additional compliance investment and potential business process changes may 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. In the event that we are subject to or affected by HIPAA, the CCPA or other domestic privacy and data protection laws, any liability from failure to comply with the requirements of these laws could adversely affect our financial condition.

Our operations abroad may also be subject to increased scrutiny or attention from data protection authorities. For example, in Europe, the GDPR took effect in May 2018. The GDPR governs the collection, use, disclosure, transfer or other processing of personal data of individuals within the EEA or in the context of our activities within the EEA. In addition, some of the personal data we process in respect of clinical trial participants is special category or sensitive personal data under the GDPR, and subject to additional compliance obligations and to local law derogations. Among other things, the GDPR imposes requirements regarding the security of personal data and notification of data processing obligations to the competent national data processing authorities, changes the lawful bases on which personal data can be processed, expands the definition of personal data and requires changes to informed consent practices, as well as detailed notices for clinical trial subjects and investigators. In addition, the GDPR regulates the transfer of personal data subject to the GDPR to the United States and other jurisdictions that the European Commission does not recognize as having "adequate" data protection laws, and the efficacy and longevity of current transfer mechanisms between the EEA and the United States remains uncertain. On July 10, 2023, the European Commission adopted its Adequacy Decision in relation to the new EU-US Data Privacy Framework, or the DPF, rendering the DPF effective as a GDPR transfer mechanism to United States entities self-certified under the DPF.

The GDPR imposes substantial fines for breaches and violations (up to the greater of €20 million or 4% of our consolidated annual worldwide gross revenue). In addition to fines, a breach of the GDPR may result in regulatory investigations, reputational damage, orders to cease or change our data processing activities, enforcement notices, assessment notices (for a compulsory audit) and/or civil claims, including class actions. The GDPR also confers a private right of action on data subjects and consumer associations to lodge complaints with supervisory authorities, seek judicial remedies and obtain compensation for damages resulting from violations of the GDPR. Further, from January 1, 2021, companies must also comply with the United Kingdom GDPR and the amended UK Data Protection Act 2018, or, together, the UK GDPR. The UK GDPR

retains the GDPR in UK national law. The UK GDPR mirrors the fines under the GDPR, for instance, fines up to the greater of €20 million (£17.5 million) or 4% of global turnover. On October 12, 2023, the UK Extension to the DPF came into effect (as approved by the UK Government), as a UK GDPR data transfer mechanism to United States entities self-certified under the UK Extension to the DPF. As we continue to expand into other foreign countries and jurisdictions, we may be subject to additional laws and regulations that may affect how we conduct business.

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 supervisory authorities issue further guidance on personal data export mechanisms, including circumstances where the SCCs cannot be used, and/or start taking enforcement action, 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. Compliance with these and any other applicable data privacy and security laws and regulations is a rigorous and time-intensive process, and we may be required to put in place additional mechanisms ensuring compliance with the new data protection rules within required time frames. If we fail to comply with any such laws or regulations, we may face significant fines and penalties that could adversely affect our business, financial condition and results of operations.

Our use of open source software could impose limitations on our ability to commercialize our product candidates.

Our use of open source software could impose limitations on our ability to commercialize our product candidates. As a result, as we seek to use our platform in connection with commercially available products, we may be required to license that software under different license terms, which may not be possible on commercially reasonable terms, if at all. If we are unable to license software components on terms that permit its use for commercial purposes, we may be required to replace those software components, which could result in delays, additional cost and additional regulatory approvals.

Use and distribution 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 software code. Some open source licenses contain requirements that we make available source code for modifications or derivative works we create based upon the type of open source software we use. If we combine our proprietary software with open source software in a certain manner, we could, under certain of the open source licenses, be required to release the source code of our proprietary software to the public. This could allow our competitors to create similar products with lower development effort and time, and ultimately could result in a loss of product sales for us. Although we monitor our use of open source software, the terms of many open source licenses have not been interpreted by U.S. courts, and there is a risk that those licenses could be construed in a manner that could impose unanticipated conditions or restrictions on our ability to commercialize our product candidates. We could be required to seek licenses from third parties in order to continue offering our product candidates, to re-engineer our product candidates or to discontinue the sale of our product candidates in the event re-engineering cannot be accomplished on a timely basis, any of which could materially and adversely affect our business, financial condition, results of operations and prospects.

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

Risks Related to Our Common Stock

The trading price of the shares of our common stock has been, and is likely to continue to be, highly volatile, and purchasers of our common stock could incur substantial losses.

Our stock price has been, and is likely to continue to be, highly volatile. The stock market in general and the market for stock of biopharmaceutical companies in particular have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. As a result of this volatility, investors may not be able to sell their common stock at or above the price at which they paid. The market price for our

common stock may be influenced by those factors discussed in this "Risk Factors" section and many others, including:

- results of our clinical trials and preclinical studies, and the results of trials of our competitors or those of other companies in our market sector;
- our ability to enroll subjects in our ongoing and future clinical trials;
- regulatory approval of our product candidates, or limitations to specific label indications or patient populations for its use, or changes or delays in the regulatory review process;
- regulatory developments in the United States and foreign countries;
- changes in the structure of healthcare payment systems;
- the success or failure of our efforts to develop, acquire or license additional product candidates;
- innovations, clinical trial results, product approvals and other developments regarding our competitors;
- announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures or capital commitments;
- manufacturing, supply or distribution delays or shortages;
- any changes to our relationship with any manufacturers, suppliers, collaborators or other strategic partners;
- achievement of expected product sales and profitability;
- variations in our financial results or those of companies that are perceived to be similar to us;
- market conditions in the biopharmaceutical sector and issuance of securities analysts' reports or recommendations;
- trading volume of our common stock;
- an inability to obtain additional funding;
- sales of our stock by insiders and stockholders;
- general economic, industry and market conditions, other events or factors, many of which are beyond our control;
- additions or departures of key personnel; and
- intellectual property, product liability or other litigation against us.

In addition, in the past, stockholders have initiated class action lawsuits against biopharmaceutical companies following periods of volatility in the market prices of these companies' stock. Such litigation, if instituted against us, could cause us to incur substantial costs and divert our management's attention and resources, which could have a material adverse effect on our business, financial condition and results of operations.

An active, liquid and orderly market for our common stock may not be maintained.

We can provide no assurance that we will be able to maintain an active trading market for our common stock. The lack of an active market may impair your ability to sell your shares at the time you wish to sell them or at a price that you consider reasonable. An inactive market may also impair our ability to raise capital by selling shares and may impair our ability to acquire other businesses or technologies using our shares as consideration, which, in turn, could materially adversely affect our business.

Our executive officers, directors and principal stockholders, if they choose to act together, will continue to have the ability to significantly influence all matters submitted to stockholders for approval.

At December 31, 2024, our executive officers, directors and greater than 5% stockholders, in the aggregate, owned approximately 66% of our outstanding common stock. As a result, such persons, acting together, have the ability to significantly influence all matters submitted to our board of directors or stockholders

for approval, including the appointment of our management, the election and removal of directors and approval of any significant transaction, as well as our management and business affairs. This concentration of ownership may have the effect of delaying, deferring or preventing a change in control, impeding a merger, consolidation, takeover or other business combination involving us, or discouraging a potential acquiror from making a tender offer or otherwise attempting to obtain control of our business, even if such a transaction would benefit other stockholders.

We do not currently intend to pay dividends on our common stock, and, consequently, your ability to achieve a return on your investment will depend on appreciation, if any, in the price of our common stock.

We have never declared or paid any cash dividend on our common stock. We currently anticipate that we will retain future earnings for the development, operation and expansion of our business and do not anticipate declaring or paying any cash dividends for the foreseeable future. In addition, the terms of any future debt agreements may preclude us from paying dividends. Any return to stockholders will therefore be limited to the appreciation of their stock. There is no guarantee that shares of our common stock will appreciate in value or even maintain the price at which stockholders have purchased their shares.

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

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

- a classified board of directors with three-year staggered terms, which may delay the ability of stockholders to change the membership of a majority of our board of directors;
- no cumulative voting in the election of directors, which limits the ability of minority stockholders to elect director candidates;
- the exclusive right of our board of directors, unless the board of directors grants such right to the stockholders, to elect a director to fill a vacancy created by the expansion of the board of directors or the resignation, death or removal of a director, which prevents stockholders from being able to fill vacancies on our board of directors;
- the required approval of at least 66-2/3% of the shares entitled to vote to remove a director for cause, and the prohibition on removal of directors without cause;
- the ability of our board of directors to authorize the issuance of shares of preferred stock and to determine the price and other terms of those shares, including preferences and voting rights, without stockholder approval, which could be used to significantly dilute the ownership of a hostile acquiror;
- the ability of our board of directors to alter our amended and restated bylaws without obtaining stockholder approval;
- the required approval of at least 66-2/3% of the shares entitled to vote to adopt, amend or repeal our amended and restated bylaws or repeal the provisions of our amended and restated certificate of incorporation regarding the election and removal of directors;
- a prohibition on stockholder action by written consent, which forces stockholder action to be taken at an annual or special meeting of our stockholders;
- an exclusive forum provision providing that the Court of Chancery of the State of Delaware will be the exclusive forum for certain actions and proceedings;
- the requirement that a special meeting of stockholders may be called only by the board of directors, the chair of our board of directors, our chief executive officer or our president (in the absence of a chief executive officer), which may delay the ability of our stockholders to force consideration of a proposal or to take action, including the removal of directors; and

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

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

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

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware is the exclusive forum for any derivative action or proceeding brought on our behalf, any action asserting a breach of fiduciary duty, any action asserting a claim against us arising pursuant to the Delaware General Corporation Law, our amended and restated certificate of incorporation or our amended and restated bylaws, or any action asserting a claim against us that is governed by the internal affairs doctrine; provided, that, this provision would not apply to suits brought to enforce a duty or liability created by the Exchange Act. Furthermore, our amended and restated certificate of incorporation also provides that unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States shall be the exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act. These choice of forum provisions may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees, which may discourage such lawsuits against us and our directors, officers and other employees. By agreeing to this provision, however, stockholders will not be deemed to have waived our compliance with the federal securities laws and the rules and regulations thereunder. Furthermore, the enforceability of similar choice of forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that a court could find these types of provisions to be inapplicable or unenforceable. If a court were to find the choice of forum provisions in our 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 adversely affect our business and financial condition.

General Risk Factors

We previously remediated a material weakness in our internal control over financial reporting. If we experience additional material weaknesses or other deficiencies in the future or otherwise fail to maintain proper and effective internal controls, our ability to produce accurate and timely financial statements could be impaired, investors may lose confidence in our financial reporting and the trading price of our common stock may decline.

Pursuant to Section 404 of Sarbanes-Oxley, our management is required to report upon the effectiveness of our internal control over financial reporting and our independent registered public accounting firm is also required to attest to the effectiveness of our internal control over financial reporting. The rules governing the standards that must be met for our management to assess our internal control over financial reporting are complex and require significant documentation, testing and possible remediation. If we or our auditors are unable to conclude that our internal control over financial reporting is effective, investors may lose confidence in our financial reporting and the trading price of our common stock may decline.

In connection with our year-end assessment of internal control over financial reporting, we determined that, as of December 31, 2023, we did not maintain effective internal control over financial reporting because of a material weakness related to the design of internal controls with respect to segregation of duties over certain information technology general controls, or ITGCs. These ITGCs were not operating effectively to (i) restrict access to certain data and the ability to make changes thereto, and (ii) monitor changes to such data. While the control deficiency identified did not result in any misstatements, a reasonable possibility exists that a material misstatement to the annual or interim financial statements and disclosures would not have been prevented or

detected on a timely basis. In response to the identified material weakness above, we have changed the relevant access to address the known segregation of duties issues and updated our access review controls to include additional procedures. During the fourth quarter of 2024, we completed our testing of the operating effectiveness of the implemented controls and found them to be effective. As a result, we have concluded the material weakness has been remediated as of December 31, 2024. However, we cannot be certain that a material weakness identical to, or distinct from, this material weakness will not occur in the future. For further discussion of the material weakness identified and our completed remedial efforts, see Item 9A, Controls and Procedures.

We cannot assure you that there will not be additional 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 our independent registered public accounting firm determines we have a material weakness in our internal control over financial reporting, investors may lose confidence in the accuracy and completeness of our financial reports, 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.

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

We and any of our third-party manufacturers or suppliers and current or potential future collaborators will use biological materials, potent chemical agents and may use hazardous materials, including chemicals and biological agents and compounds that could be dangerous to human health and safety of the environment. Our operations and the operations of our third-party manufacturers and suppliers also produce hazardous waste products. Federal, state and local laws and regulations govern the use, generation, manufacture, storage, handling and disposal of these materials and wastes. Compliance with applicable environmental laws and regulations may be expensive, and current or future environmental laws and regulations may impair our product development efforts. In addition, we cannot eliminate the risk of accidental injury or contamination from these materials or wastes. We do not carry specific biological or hazardous waste insurance coverage, and our property, casualty and general liability insurance policies specifically exclude coverage for damages and fines arising from biological or hazardous waste exposure or contamination. In the event of contamination or injury, we could be held liable for damages or be penalized with fines in an amount exceeding our resources, and our clinical trials or regulatory approvals could be suspended.

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

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

Our information technology systems, or those of any of our CROs, manufacturers, other contractors or consultants or current or potential future collaborators, may fail or suffer security breaches, which could result in a material disruption of our product development programs.

The United States federal and various state and foreign governments have adopted or proposed laws, regulations and requirements regarding the collection, distribution, use, security, and storage of personally identifiable information and other data relating to individuals, and federal and state consumer protection laws are being applied to enforce regulations related to the collection, use, and dissemination of such data. In the ordinary course of business, we collect, store, transmit and otherwise process large amounts of data including, without limitation, proprietary business information, preclinical and clinical trial data and the personal information

of our employees and contractors. It is critical that we do so in a secure manner to maintain the confidentiality and integrity of such confidential information. Despite the implementation of security measures, our internal technology systems (including infrastructure) and those of our current and any future CROs and other contractors, consultants and collaborators are vulnerable to attack, damage and interruption from computer viruses and malware (e.g. ransomware), misconfigurations, "bugs" or other vulnerabilities, malicious code, cybersecurity threats (such as denial or degredation-of-service attacks, cyber-attacks or cyber-intrusions over the Internet, hacking, phishing and other social engineering attacks), unauthorized access or use, natural disasters, terrorism, war and telecommunication and electrical failures, employee theft or misuse, human error, fraud, and sophisticated nation-state and nation-state-supported actors. 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 post-pandemic 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 continue to work remotely, which may create additional opportunities for cybercriminals to exploit vulnerabilities. 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. There can also be no assurance that our and our third-party service providers', strategic partners', contractors', consultants', CROs' and collaborators' cybersecurity risk management program and processes, including policies, controls or procedures, will be fully implemented, complied with or effective in protecting our systems, networks and confidential information.

We and certain of our service providers are from time to time subject to cyberattacks and security incidents. While we do not believe that we have experienced any significant system failure, accident or security breach to date, if such an event were to occur and cause interruptions in our operations or result in the unauthorized disclosure of or access to proprietary or sensitive personally identifiable information, it could result in a material disruption of our development programs and our business operations, whether due to a loss, corruption or unauthorized disclosure of our trade secrets or other similar disruptions. Some of the federal, state and foreign laws, regulations and requirements include obligations of companies to notify individuals of security breaches involving particular personally identifiable information, which could result from breaches experienced by us or by our vendors, contractors, or organizations with which we have formed strategic relationships.

Any security breach or other incident, whether real or perceived, could impact our reputation, cause us to incur significant costs, including legal expenses, harm customer confidence, hurt our expansion into new markets, cause us to incur remediation costs, or cause us to lose existing customers. For example, the loss of clinical trial data from clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. We also rely on third parties to manufacture our product candidates, and similar events relating to their computer systems could also have a material adverse effect on our business. To the extent that any real or perceived disruption or security breach affects our systems (or those of our third-party collaborators, service providers, contractors or consultants) or were to result in a loss of or accidental, unlawful or unauthorized access to, use of, release of, or other processing of personally identifiable information, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability, the further development and commercialization of our product candidates could be delayed, and we could be subject to significant fines, penalties or liabilities for any noncompliance to certain privacy and security laws. Any adverse impact to the availability, integrity or confidentiality of our or third-party systems or confidential information can result in legal claims or proceedings (such as class actions), regulatory investigations and enforcement actions, fines and penalties, negative reputational impacts that cause us to lose existing or future customers, and/or significant incident response, system restoration or remediation and future compliance costs. 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. For further discussion on the potential liability related to the violation of these laws, see "Risk Factors—We, our collaborators and our service providers may be subject to a variety of data privacy and security laws and contractual obligations, which could increase compliance costs and our actual or alleged failure to comply with them could subject us to potentially significant fines or penalties, regulatory investigation, negative publicity, liability or and otherwise harm our business, results of operations and financial condition."

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. In addition, our corporate headquarters is located in San Diego, California near major earthquake faults and fire zones, and the ultimate impact on us of being located near major earthquake faults and fire zones and being consolidated in a certain geographical area is unknown. The occurrence of any of these business disruptions could seriously harm our operations and financial condition and increase our costs and expenses.

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 could face criminal liability and other serious consequences for violations, which could harm our business.

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

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

Unstable market and economic conditions and adverse developments with respect to financial institutions and associated liquidity risk may have serious adverse consequences on our business, financial condition and stock price.

The global credit and financial markets have from time to time experienced extreme volatility and disruptions, including severely diminished liquidity and credit availability, rising interest and inflation rates, declines in consumer confidence, declines in economic growth, increases in unemployment rates and uncertainty about economic stability. The financial markets and the global economy may also be adversely affected by the current or anticipated impact of inflation, military conflict, terrorism or other geopolitical events. Sanctions imposed by the United States and other countries in response to such conflicts, including on Russia and its allies, may also adversely impact the financial markets and the global economy, and any economic countermeasures by the affected countries or others could exacerbate market and economic instability. In addition, in 2023, the closures of financial institutions and their placement into receivership with the Federal

Deposit Insurance Corporation, or FDIC, created bank-specific and broader financial institution liquidity risk and concerns. Future adverse developments with respect to specific financial institutions or the broader financial services industry may lead to market-wide liquidity shortages, impair the ability of companies to access near-term working capital needs, and create additional market and economic uncertainty. There can be no assurance that further deterioration in credit and financial markets and confidence in economic conditions will not occur. Our general business strategy may be adversely affected by any such economic downturn, volatile business environment or continued unpredictable and unstable market conditions. If the current equity and credit markets deteriorate, it may make any necessary debt or equity financing more difficult, more costly and more dilutive. Failure to secure any necessary financing in a timely manner and on favorable terms could have a material adverse effect on our growth strategy, financial performance and stock price and could require us to delay or abandon clinical development plans. In addition, there is a risk that one or more of our current service providers, manufacturers and other partners may not survive an economic downturn, which could directly affect our ability to attain our operating goals on schedule and on budget.

Changes in tax laws may impact our future financial position and results of operations.

New income, sales, use or other tax laws, statutes, rules, regulations or ordinances could be enacted at any time, or interpreted, changed, modified or applied adversely to us, any of which could adversely affect our business operations and financial performance. For example, the United States government may enact significant changes to the taxation of business entities including, among others, a permanent increase in the corporate income tax rate, an increase in the tax rate applicable to the global intangible low-taxed income and elimination of certain exemptions, and the imposition of minimum taxes or surtaxes on certain types of income. No specific United States tax legislation has been proposed at this time and the likelihood of these changes being enacted or implemented is unclear. We are currently unable to predict whether such changes will occur and, if so, the ultimate impact on our business. To the extent that such changes have a negative impact on us, our customers or our suppliers, including as a result of related uncertainty, these changes may materially and adversely impact our business, financial condition, results of operations and cash flows.

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

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

The rules and regulations applicable to public companies have increased and may continue to increase our legal and financial compliance costs and have made some activities more time consuming and costly. If these requirements divert the attention of our management and personnel from other business concerns, they could have a material adverse effect on our business, financial condition and results of operations. The increased costs will decrease our net income or increase our net loss and may require us to reduce costs in other areas of our business. For example, in recent periods obtaining director and officer liability insurance has become more expensive, and we may be required to continue to incur substantial costs to maintain the same or similar coverage. We cannot predict or estimate the amount or timing of additional costs we may incur to respond to these requirements. The impact of these requirements could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors, our board committees or as executive officers.

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

The trading market for our common stock depends in part on the research and reports that securities or industry analysts publish about us, our business, our market or our competitors. If these analysts cease coverage of our company, the trading price for our stock would be negatively impacted. If one or more of the analysts who covers us downgrades our stock, our stock price would likely decline. If one or more of these analysts ceases to cover us or fails to regularly publish reports on us, interest in our stock could decrease, which could cause our stock price or trading volume to decline.

We could be subject to securities class action litigation.

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

ITEM 1B. Unresolved Staff Comments

None.

ITEM 1C. Cybersecurity

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

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

Our cybersecurity risk management program is integrated into our overall enterprise risk management program, and shares reporting channels and governance processes that apply across the risk management program to other legal, compliance, operational and financial risk areas. However, there can be no assurance that our cybersecurity risk management program and processes, including our policies, controls or procedures, will be fully implemented, complied with or effective in protecting our systems and information.

Key elements of our cybersecurity risk management program include but are not limited to the following:

- risk assessments to help identify material risks from cybersecurity threats to our critical systems and information;
- a security team that includes internal IT and data privacy personnel and external managed services partners, principally responsible for managing (i) our cybersecurity risk assessment processes, (ii) our security controls and (iii) our response to cybersecurity incidents;
- use of external service providers, where appropriate, to assess, test or otherwise assist with aspects of our security controls, including:
    - annual external and internal penetration tests;
    - 24-hour monitoring of our networks and cloud resources to help detect, respond to and recover from cyber-attacks;
    - IT managed services that includes help desk support and managed infrastructure (networks and servers support); and
    - a ransomware defense plan.
- cybersecurity awareness training for our employees, including incident response personnel and senior management;
- a cybersecurity incident response plan that includes procedures for responding to cybersecurity incidents; and

- third-party risk management and reporting process for key service providers based on our assessment of their criticality to our operations and respective risk profile, suppliers and vendors with access to our information systems or data.

We have not identified risks from known cybersecurity threats, including as a result of any prior cybersecurity incidents, that have materially affected us, including our operations, business strategy, results of operations or financial condition. We face risks from cybersecurity threats that, if realized, are reasonably likely to materially affect us, including our business strategy, results of operations or financial condition. In the event we experience a cybersecurity incident we consider to be material, we will disclose such incident consistent with the requirements of Item 1.05 of Form 8-K.

Cybersecurity Governance

Our board of directors considers cybersecurity risk as part of its risk oversight function and has delegated to the audit committee of the board of directors, or the audit committee, oversight of cybersecurity and other information technology risks. The audit committee oversees management's implementation of our cybersecurity risk management program.

The audit committee receives periodic reports from management on our cybersecurity risks. In addition, management alerts the audit committee of any material cybersecurity incidents. The audit committee reports to the full board of directors regarding its activities, including those related to cybersecurity. Board members receive presentations on cybersecurity topics from management and have available to them external resources related to cybersecurity as part of the board of directors' continuing education on topics that impact companies similar to ours.

Our cybersecurity function is overseen by our Senior Vice President of Information Technology, who leads a team that is responsible for assessing and managing our risks from cybersecurity threats. The team has primary responsibility for our overall cybersecurity risk management program and supervises both our internal cybersecurity personnel and our retained external cybersecurity consultants.

Our management team takes steps to stay informed about and monitor 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 IT environment.

ITEM 2. Properties

We currently lease approximately 54,597 square feet of office and laboratory space in San Diego, California, under a lease that expires in 2026, with the option to extend the term of the lease for an additional five years. In April 2024, we entered into a sublease agreement to rent 105,000 square feet for office and laboratory space for the Company's future corporate headquarters. We also have an option and a right of first refusal for an additional 80,000 square feet in an adjacent available building, which we have not exercised. The term of the sublease is approximately 9 years, 9 months with payments expected to begin in August 2025. We believe that our current and expected future facilities are adequate to meet our needs and that suitable additional alternative spaces will be available in the future on commercially reasonable terms, if required.

ITEM 3. Legal Proceedings

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

ITEM 4. Mine Safety Disclosures

Not applicable.

PART II

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

Market Information

Our common stock is listed on the Nasdaq Global Market under the symbol "RNA."

Holders of Common Stock

As of February 14, 2025, there were approximately 19 holders of record of our common stock. This number was derived from our shareholder records and does not include beneficial owners of our common stock whose shares are held in the name of various dealers, clearing agencies, banks, brokers and other fiduciaries.

Dividend Policy

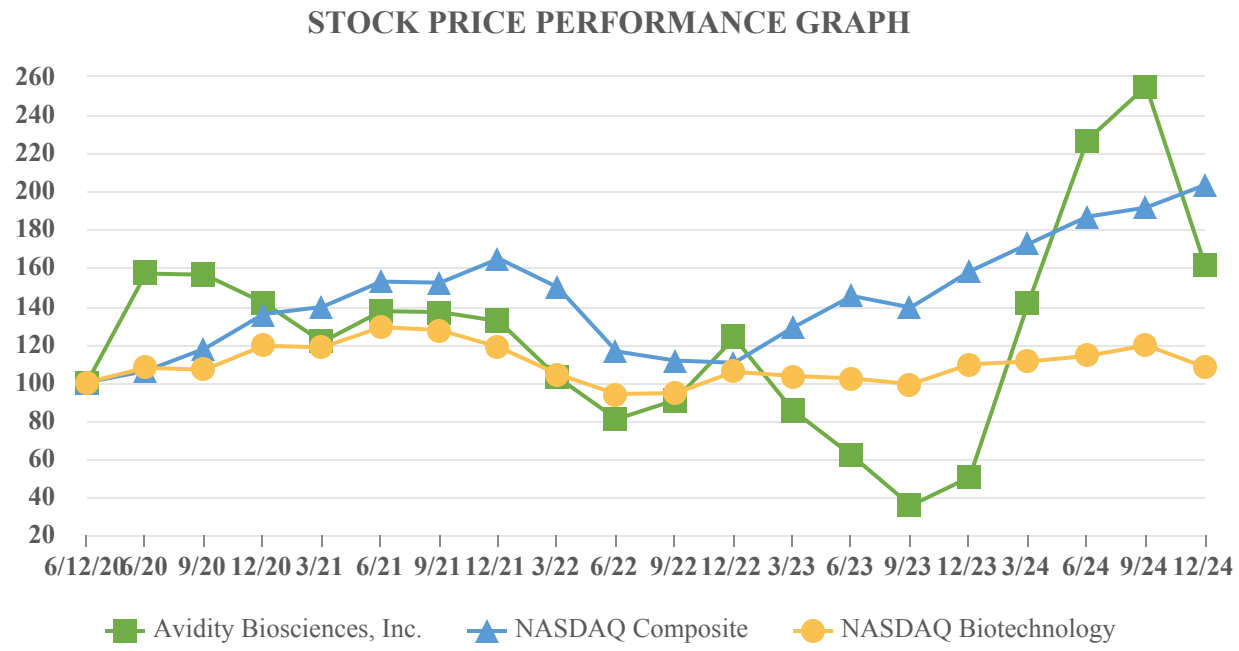
We have never declared or paid any cash dividends on our capital stock. We intend to retain future earnings, if any, to finance the operation of our business and do not anticipate paying any cash dividends in the foreseeable future. Any future determination related to dividend policy will be made at the discretion of our board of directors after considering our financial condition, results of operations, capital requirements, business prospects and other factors the board of directors deems relevant, and subject to the restrictions contained in any future financing instruments.

Securities Authorized for Issuance Under Equity Compensation Plans

See Item 12 of Part III of this Annual Report on Form 10-K for information about our equity compensation plans which is incorporated by reference herein.

Performance Graph

The following stock performance graph illustrates a comparison from June 12, 2020 (the date our common stock commenced trading on the Nasdaq Global Market) through December 31, 2024, of the total cumulative stockholder return on our common stock, the Nasdaq Composite Index and the Nasdaq Biotechnology Index. The graph assumes an initial investment of $100 on June 12, 2020 at the opening trading price of $18.00 per share, and that all dividends were reinvested, although dividends have not been declared on our common stock. The comparisons in the graph are required by the SEC and are not intended to forecast or be indicative of possible future performance of our common stock.



Unregistered Sales of Equity Securities

None.

Issuer Repurchases of Equity Securities

None.

ITEM 6. [Reserved]

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

You should read the following discussion and analysis of our financial condition and results of operations together with our consolidated financial statements and related notes thereto included elsewhere in this annual report. This discussion and analysis contains forward-looking statements based upon our current beliefs, plans and expectations that involve risks, uncertainties and assumptions. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth under "Risk Factors" or in other parts of this annual report. For the comparison of the financial results for the fiscal years ended December 31, 2023 and 2022, see Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations, in our Annual Report on Form 10-K for the fiscal year ended December 31, 2023, filed with the SEC on February 28, 2024.

References to "Avidity," "the Company," "we," "us" and "our" refer to Avidity Biosciences, Inc.

Overview

We are a biopharmaceutical company committed to delivering a new class of RNA therapeutics called Antibody Oligonucleotide Conjugates, or AOCs. Our proprietary AOC platform is designed to combine the specificity of monoclonal antibodies, or mAbs, with the precision of RNA therapeutics to target the root cause of diseases previously untreatable with such therapeutics. Our pipeline currently has three programs in potentially registrational clinical trials. Delpacibart etedesiran, abbreviated as del-desiran (formerly AOC 1001), is designed to treat people with myotonic dystrophy type 1, or DM1, and is currently in Phase 3 development with the global HARBOR™ trial. Delpacibart braxlosiran, or del-brax (formerly AOC 1020), is the first investigational therapy designed to directly target DUX4 in people living with facioscapulohumeral muscular dystrophy, or FSHD, and is currently in Phase 1/2 development with the FORTITUDE™ trial. Delpacibart zotadirsen, or del-zota (formerly AOC 1044), is designed for people with Duchenne muscular dystrophy, or DMD, and is currently in development with the Phase 2 EXPLORE44-OLE™ study. Del-zota is specifically designed for people with mutations amenable to exon 44 skipping, or DMD44, and is the first of multiple AOCs we are developing for DMD. Del-desiran, del-brax, and del-zota have all been granted Orphan Designation by the FDA and the European Medicines Agency, or EMA, and Fast Track Designation by the FDA. In addition, the FDA has granted del-desiran Breakthrough Therapy designation for the treatment of DM1 and granted del-zota Rare Pediatric Disease designation.

Since our inception in 2012, we have devoted substantially all of our resources to organizing and staffing our company, business planning, raising capital, developing our proprietary AOC platform, identifying potential product candidates, establishing our intellectual property portfolio, conducting research, preclinical and clinical studies, preparing for potential commercial activities, and providing other general and administrative support for these operations. We have not generated any revenue from product sales. We are currently building our capabilities to support potential launches of product candidates currently in clinical development and to potentially operate as a commercial organization. In June 2020, we completed our initial public offering, or IPO, and have since raised capital through additional public offerings, private placements, and under collaboration and research license agreements. Refer to "Liquidity and Capital Resources" for further information on the capital raised since inception and our future capital requirements.

We have incurred operating losses in each year since inception. Our net losses were $322.3 million, $212.2 million, and $174.0 million for the years ended December 31, 2024, 2023, and 2022, respectively. As of December 31, 2024, we had an accumulated deficit of $893.1 million. We expect our expenses and operating losses will increase substantially as we conduct our ongoing and planned preclinical studies and clinical trials, continue our research and development activities, utilize third parties to manufacture our product candidates and related raw materials, hire additional personnel, and protect our intellectual property. Our net losses may fluctuate significantly from quarter-to-quarter and year-to-year, depending on the timing of our preclinical studies and clinical trials and our expenditures on other research and development activities, as well as the generation of any collaboration and services revenue.

Based upon our current operating plans, we believe that our existing cash, cash equivalents, and marketable securities will be sufficient to fund our operations for at least 12 months from the date of the filing of this Annual Report on Form 10-K. While we may generate revenue under our current and/or future collaboration agreements, we do not expect to generate any revenues from product sales until we successfully complete development and obtain regulatory approval for one or more of our product candidates. If we obtain regulatory approval for any of our product candidates, we expect to incur significant commercialization expenses related to product sales, marketing, manufacturing, and distribution. Accordingly, until such time as we can generate

significant revenue from sales of our product candidates, if ever, we expect to finance our cash needs through equity offerings, debt financings, or other capital sources, including potential collaborations, licenses, and other similar arrangements. However, we may be unable to raise additional funds or enter into such other arrangements when needed, on favorable terms or at all. Our failure to raise capital or enter into such other arrangements when needed would have a negative impact on our financial condition and could force us to delay, limit, reduce, or terminate our product development or future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

Research Collaboration with Bristol Myers Squibb Company

In November 2023, we entered into (i) a Research Collaboration and License Agreement, or the BMS Collaboration Agreement, to expand on the research with MyoKardia for up to five targets utilizing our proprietary AOC platform technology and (ii) a Securities Purchase Agreement with BMS, or the BMS Purchase Agreement, for the purchase by BMS in a private placement of 5,075,304 shares of our common stock at a purchase price of $7.8813 per share, for an aggregate purchase price of approximately $40 million. We refer to the BMS Collaboration Agreement and the BMS Purchase Agreement together as the "BMS Agreements." Under the terms of the BMS Agreements, we received approximately $100 million upfront, which includes a $60 million cash payment under the terms of the BMS Collaboration Agreement, and approximately $40 million for the purchase of our common stock under the terms of the BMS Purchase Agreement. We are also eligible to receive up to approximately $1.35 billion in research and development milestone payments, up to approximately $825 million in commercial milestone payments, and tiered royalties from high single digits to low double-digits on net sales. We are responsible for our own research collaboration costs incurred under the agreement, subject to a cumulative spending limit of $40 million. BMS will fund all future clinical development, regulatory and commercialization activities coming from this collaboration.

Research Collaboration with Eli Lilly and Company

In April 2019, we entered into a Research Collaboration and License Agreement, or the Lilly Agreement, with Eli Lilly and Company, or Lilly, for the discovery, development, and commercialization of AOC products in immunology and other select indications on a worldwide basis. Under the Lilly Agreement, we and Lilly will collaborate on preclinical research and discovery activities for such products, with Lilly being responsible for funding the cost of such activities by both parties. Lilly will also lead the clinical development, regulatory approval and commercialization of all such products, at its sole cost. We granted Lilly an exclusive, worldwide, royalty-bearing license, with the right to sublicense, under our technology to research, develop, manufacture, and sell products containing AOCs that are directed to up to six mRNA targets. We retain the right to use our technology to perform our obligations under the agreement and for all purposes not granted to Lilly. Lilly paid us an upfront license fee of $20.0 million in 2019, and we are eligible to receive up to $60.0 million in development milestone payments per target, up to $140.0 million in regulatory milestone payments per target and up to $205.0 million in commercialization milestone payments per target. We are eligible to receive a tiered royalty ranging from the mid-single to low-double digits from Lilly on worldwide annual net sales of licensed products, subject to specified and capped reductions for the market entry of biosimilar products, loss of patent coverage of licensed products, and for payments owed to third parties for additional rights necessary to commercialize licensed products in the territory.

Components of Results of Operations

Revenue

Our revenue to date has been derived from payments received under our license and research collaboration agreements, including revenue from reimbursements of services, as well as a combination of upfront payments and milestone payments under our current and/or future collaboration agreements. We do not expect to generate any revenue from the sale of products unless and until such time that our product candidates have advanced through clinical development and regulatory approval, if ever. We expect that any revenue we generate, if at all, will fluctuate from quarter-to-quarter as a result of the timing and amount of payments relating to such services and milestones and the extent to which any of our products are approved and successfully commercialized. If we fail to complete preclinical and clinical development of product candidates or obtain regulatory approval for our product candidates, our ability to generate future revenues and our results of operations and financial position would be adversely affected.

Operating Expenses

Research and Development

Research and development expenses consist of costs associated with our research and development activities, including our discovery and research efforts, and the preclinical and clinical development of our product candidates. Our research and development expenses include:

- external costs, including expenses incurred under arrangements with third parties, such as contract research organizations, contract manufacturers, consultants, and our scientific advisors; and
- internal costs, including;
  - employee-related expenses, including salaries, benefits, and stock-based compensation;
  - the costs of laboratory supplies and acquiring, developing, and manufacturing preclinical study materials; and
  - facilities, information technology, and depreciation, which include direct and allocated expenses for rent and maintenance of facilities, and depreciation of leasehold improvements and equipment.

Research and development costs, including costs reimbursed under collaboration agreements, are expensed as incurred, with reimbursements of such amounts being recognized as revenue. We account for nonrefundable advance payments for goods and services that will be used in future research and development activities as expenses when the service has been performed or when the goods have been received.

At any one time, we are working on multiple programs. Our internal resources, employees, and infrastructure are not directly tied to any one research or drug discovery program and are typically deployed across multiple programs.

We expect our research and development expenses to increase for the foreseeable future as we continue to conduct ongoing research and development activities, advance preclinical research programs toward clinical development, including IND-enabling studies, and conduct clinical trials. The process of conducting preclinical studies and clinical trials necessary to obtain regulatory approval is costly and time consuming, and can vary significantly for each product candidate and development program. We may never succeed in achieving marketing approval for any of our product candidates.

We anticipate we will make determinations as to which programs to pursue and how much funding to direct to each program on an ongoing basis in response to preclinical and clinical results, regulatory developments, ongoing assessments as to each program's commercial potential, and our ability to maintain or enter into new collaborations, to the extent we determine the resources or expertise of a collaborator would be beneficial for a given program. We will need to raise substantial additional capital in the future. In addition, we cannot forecast which development programs may be subject to future collaborations, when such arrangements will be secured, if at all, and to what degree such arrangements would affect our development plans and capital requirements.

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

- the number and scope of clinical, preclinical, and IND-enabling studies;
- 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 number of doses that patients receive;
- 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 various phases of development of our product candidates; and
- the efficacy and safety profiles of our product candidates.

General and Administrative

General and administrative expenses consist primarily of employee-related expenses, including salaries, benefits, and stock-based compensation, for employees in our executive, finance, accounting, legal, business development, and other support functions. Other general and administrative expenses include allocated facility, information technology, and depreciation related costs not otherwise included in research and development expenses, and professional fees for auditing, tax, intellectual property, and legal services. Costs related to filing and pursuing patent applications are recognized as general and administrative expenses as incurred since recoverability of such expenditures is uncertain.

We expect our general and administrative expenses will increase for the foreseeable future to support our increased research and development activities, commercial readiness initiatives, and other corporate activities.

Other Income (Expense)

Other income (expense) consists primarily of interest earned on our cash, cash equivalents, and marketable securities.

Results of Operations

Comparison of the Years Ended December 31, 2024 and 2023

The following table summarizes our results of operations for the years presented (in thousands):

	Year Ended December 31,		Change
	2024	2023	
Revenue	$ 10,897	$ 9,560	$ 1,337
Research and development expenses	303,593	190,968	112,625
General and administrative expenses	86,240	54,190	32,050
Other income	56,634	23,378	33,256

Revenue

Revenue increased by $1.3 million for the year ended December 31, 2024 as compared to the same period in 2023, primarily due to the recognition of revenues under the BMS agreement in the current year for which there were no revenues recognized in the prior year comparative period, partially offset by a decrease in revenues under the Lilly agreement in the current year.

Research and Development Expenses

The following tables illustrate the components of our research and development expenses for the years presented (in thousands):

	Year Ended December 31,		Change
	2024	2023	
External costs:			
Del-desiran	$ 47,026	$ 25,216	$ 21,810
Del-brax	33,230	18,352	14,878
Del-zota	27,073	20,137	6,936
Other programs	7,617	8,884	(1,267)
Unallocated	74,729	31,044	43,685
Total external costs	189,675	103,633	86,042
Internal costs:			
Employee-related expenses	90,935	68,136	22,799
Facilities, lab supplies and other	22,983	19,199	3,784
Total internal costs	113,918	87,335	26,583
Total research and development expenses	$ 303,593	$ 190,968	$ 112,625

Research and development expenses increased by $112.6 million for the year ended December 31, 2024 as compared to the same period in 2023. Research and development expense increased primarily due to increased external costs associated with the progression of clinical trials and preclinical studies, including $41.1 million in higher manufacturing costs related to monoclonal antibodies used across programs, as well as higher internal costs including $22.8 million in higher personnel costs.

General and Administrative Expenses

General and administrative expenses increased by $32.1 million for the year ended December 31, 2024 as compared to the same period in 2023, primarily due to $21.5 million in higher personnel costs and $6.1 million in higher professional fees to support our expanded operations and commercial readiness.

Other Income

Other income increased by $33.3 million for the year ended December 31, 2024 as compared to the same period in 2023, due to higher interest income earned on marketable securities investments and cash and cash equivalent balances.

Liquidity and Capital Resources

Sources of Liquidity

On November 8, 2022, we entered into a sales agreement (the 2022 Sales Agreement) with Cowen and Company, LLC (the Sales Agent), under which we could sell shares of our common stock having an aggregate offering price of up to $200.0 million through the Sales Agent. Sales of the shares of common stock were made at prevailing market prices at the time of sale, or as otherwise agreed with the Sales Agent. During the years ended December 31, 2024 and 2023, we sold 418,408 and 4,107,810 shares of its common stock, respectively, pursuant to the Sales Agreement and received net proceeds of $5.6 million and $60.5 million, respectively, after deducting offering-related transaction costs and commissions of $0.1 million and $1.4 million, respectively.

On March 4, 2024, we completed a private placement of 15,224,773 shares of our common stock at a price of $16.50 per share and pre-funded warrants to purchase an aggregate 9,030,851 shares of our common stock at a price of $16.499 per pre-funded warrant. The net proceeds from the private placement were $379.8 million after deducting placement fees and offering costs of $20.4 million. Each pre-funded warrant has an exercise price of $0.001 per share of common stock, is immediately exercisable, and does not expire.

On June 17, 2024, we completed a public offering of 12,132,500 shares of our common stock at a public offering price of $38.00 per share. Net proceeds from the offering were approximately $432.8 million, after deducting underwriting discounts and offering expenses of $28.3 million.

On August 9, 2024, we entered into a sales agreement, or the 2024 Sales Agreement, with TD Securities (USA) LLC, or the 2024 Sales Agent, with substantially similar terms as the 2022 Sales Agreement.

The 2022 Sales Agreement was terminated upon effectiveness of the 2024 Sales Agreement. Under the 2024 Sales Agreement, we may, from time to time, sell shares of our common stock having an aggregate offering price of up to $400.0 million through the 2024 Sales Agent. Sales of the shares of common stock, if any, will be made at prevailing market prices at the time of sale, or as otherwise agreed with the 2024 Sales Agent. We are not obligated to sell, and the 2024 Sales Agent is not obligated to buy or sell, any shares of common stock under the 2024 Sales Agreement. As of December 31, 2024, we had sold no shares of our common stock under the 2024 Sales Agreement.

On August 16, 2024, we completed a public offering of 8,418,000 shares of our common stock at a public offering price of $41.00 per share. Net proceeds from the offering were approximately $323.7 million, after deducting underwriting discounts and offering expenses of $21.4 million. The shares sold in the offering were registered pursuant to our shelf registration statement on Form S-3, which became automatically effective upon filing on May 9, 2024.

As of December 31, 2024, other significant sources of capital raised to fund our operations were comprised of aggregate gross proceeds of $144.6 million from funding under collaboration and research services agreements of which approximately $40.0 million relates to the sale of 5,075,304 unregistered shares in November 2023 to BMS in a private placement under the terms of the BMS Purchase Agreement.

Future Capital Requirements

As of December 31, 2024, we had cash, cash equivalents, and marketable securities of $1.5 billion. Based upon our current operating plans, we believe that our existing cash, cash equivalents, and marketable securities will be sufficient to fund our operations for at least 12 months from the date of the filing of this Form 10-K. However, our forecast of the period of time through which our financial resources will be adequate to support our operations is a forward-looking statement that involves risks and uncertainties, and actual results could vary materially. We have based this estimate on assumptions that may prove to be wrong, and we could deplete our capital resources sooner than we expect. Additionally, the process of conducting preclinical studies and testing product candidates in clinical trials is costly, and the timing of progress and expenses in these studies and trials is uncertain.

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

- the type, number, scope, progress, expansions, results, costs and timing of discovery, preclinical studies and clinical trials of our product candidates that we are pursuing or may choose to pursue in the future;
- the costs and timing of manufacturing for our product candidates and commercial manufacturing if any product candidate is approved;
- the costs, timing, and outcome of regulatory review of our product candidates;
- the terms and timing of establishing and maintaining collaborations, licenses, and other similar arrangements;
- the costs of obtaining, maintaining, and enforcing our patents and other intellectual property rights;
- the costs associated with hiring additional personnel and consultants as we continue to grow our company;
- the timing and amount of the milestone or other payments made to us under current or future research and collaboration agreements;
- the costs and timing of establishing or securing sales and marketing capabilities if any product candidate is approved;
- our ability to achieve sufficient market acceptance, coverage and adequate reimbursement from third-party payors, and adequate market share and revenue for any approved products; and
- costs associated with any products or technologies that we may in-license or acquire.

While we may generate revenue under our current and/or future collaboration agreements, we do not expect to generate any revenues from product sales until we successfully complete development and obtain regulatory approval for one or more of our product candidates, which we do not expect will occur in the immediate near term, and may never occur. If we obtain regulatory approval for any of our product candidates, we expect to incur significant commercialization expenses related to product sales, marketing, manufacturing, and distribution. Accordingly, until such time as we can generate significant revenue from sales of our product candidates, if ever, we expect to finance our cash needs through equity offerings, debt financings or other capital sources, including current and potential future collaborations, licenses and other similar arrangements. However, we may be unable to raise additional funds or enter into such other arrangements when needed, on favorable terms or at all. 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. Our failure to raise capital or enter into such other arrangements when needed would have a negative impact on our financial condition and could force us to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

Cash Flows

The following table summarizes our cash flows for the years presented (in thousands):

	Year Ended December 31,		Change
	2024	2023	
Net cash provided by (used in):			
Operating activities	$ (300,870)	$ (119,064)	$ (181,806)
Investing activities	(854,201)	(130,070)	(724,131)
Financing activities	1,192,357	93,864	1,098,493
Net increase (decrease) in cash, cash equivalents and restricted cash	$ 37,286	$ (155,270)	$ 192,556

Operating Activities

Net cash used in operating activities of $300.9 million and $119.1 million for the years ended December 31, 2024 and 2023, respectively, consisted primarily of cash used to fund our operations related to the development of del-desiran, del-brax, del-zota, and other potential programs. The increase in cash used in our operations is primarily due to increases in research and development costs as well as general and administrative expenses as described under “Results of Operations” above.

Investing Activities

Net cash used in investing activities of $854.2 million for the year ended December 31, 2024 consisted of $1.4 billion for purchases of marketable securities due to investing the proceeds from the issuance of common stock and pre-funded warrants as well as the reinvestment of proceeds from matured marketable securities, as well as $7.1 million in purchases of property and equipment, offset by $586.4 million of proceeds from maturities of marketable securities. Net cash used in investing activities of $130.1 million for the year ended December 31, 2023 consisted of $461.0 million for purchases of marketable securities and $4.2 million in purchases of property and equipment, partially offset by $335.2 million of proceeds from maturities of marketable securities.

Financing Activities

Net cash provided by financing activities of $1.2 billion for the year ended December 31, 2024 consisted primarily of $762.2 million in net proceeds from sales of our common stock, $238.4 million in net proceeds from the issuance of common stock from a private placement transaction, $141.4 million in net proceeds from the sale of pre-funded warrants in a private placement, as well as $50.4 million in proceeds from the issuance of common stock under employee incentive equity plans. Net cash provided by financing activities of $93.9 million for the year ended December 31, 2023 consisted primarily of $60.5 million in net proceeds from the issuance of common stock in public offerings, $31.2 million in net proceeds from the issuance of common stock from a

private placement transaction, as well as $2.1 million in proceeds from the issuance of common stock under employee incentive equity plans.

Contractual Obligations and Commitments

We have operating lease obligations related to our lease for office and laboratory space in San Diego, California. In June 2020, and as amended in December 2020, we entered into a non-cancellable operating lease for approximately 54,597 square feet of office and laboratory space, or the Lease, which commenced in November 2021. The Lease has a five-year initial term with a renewal option for an additional five years. Under the terms of the Lease, the initial monthly base rent of approximately $251,000 will increase to approximately $282,000 during the last year of the Lease's initial term, and the first year includes five months of rent abatement. In June 2023, we further amended the lease to expand our office and laboratory space. The expansion increased monthly base rent by approximately $45,000 increasing to $49,000 per month in the last year of the Lease's term. The total remaining base rent commitment for the initial term under the Lease is $7.5 million.

In April 2024, we entered into a new sublease agreement to rent office and laboratory space for our future corporate headquarters. The term of the sublease is approximately 9 years, 9 months with payments expected to begin in August 2025. We also have an option and a right of first refusal for an additional 80,000 square feet in an adjacent available building, which we have not exercised. Total aggregate future lease commitments under the sublease agreement are approximately $72.6 million. Refer to Note 7, "Commitments and Contingencies" to our consolidated financial statements included elsewhere in this report.

We enter into contracts in the normal course of business for contract research services, contract manufacturing services, clinical trials, professional services, and other services and products for operating purposes. These contracts may include certain provisions that could require payments for early termination. The amount of the termination payments vary depending on the timing of the termination and the specific terms of the contract. Therefore, these contracts are considered cancellable contracts.

Critical Accounting Polices and Estimates

Our management’s discussion and analysis of our financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles, or GAAP. The preparation of these consolidated financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenue and expenses. On an ongoing basis, we evaluate these estimates and judgments. We base our estimates on historical experience and on various assumptions that we believe to be reasonable under the circumstances. These estimates and assumptions form the basis for making judgments about the carrying values of assets and liabilities and the recording of revenue and expenses that are not readily apparent from other sources. Actual results may differ materially from these estimates.

While our significant accounting policies are described in more detail in Note 2 to our consolidated financial statements included elsewhere in this annual report, we believe that the following accounting policies with financial estimates are the most critical to understanding and evaluating our historical and future performance.

Accrued Research and Development Costs

As part of the process of preparing our consolidated financial statements, we are required to make estimates of our accrued research and development expenses resulting from our obligations under contracts with CROs, manufacturers, vendors and consultants. The financial terms of these contracts vary from contract to contract and may result in payment flows that do not match the periods over which materials or services are provided under such contracts. We reflect research and development expenses in our consolidated financial statements by matching those expenses with the period in which services and efforts are expended. In accruing for these activities, we obtain information from various sources and estimate the level of effort or expense allocated to each period.

Although we do not expect our estimates to be materially different from amounts actually incurred, if our estimates of the status and timing of services performed differ from the actual status and timing of services performed, it could result in our reporting amounts that are too high or too low in any particular period. To date,

there have been no material differences between our estimates of such expenses and the amounts actually incurred.

Recent Accounting Pronouncements

See Note 2 to our consolidated financial statements included elsewhere in this annual report.

ITEM 7A. Quantitative and Qualitative Disclosures about Market Risk

Interest Rate Risk

Our cash, cash equivalents, and marketable securities consist of cash held in readily available checking and money market accounts, as well as debt securities. We are exposed to market risk related to fluctuations in interest rates and market prices. Our primary exposure to market risk is interest rate sensitivity, which is affected by changes in the general level of United States interest rates. However, due to the short- and intermediate-term nature of the instruments in our portfolio, we believe an immediate hypothetical 5% change in interest rates would not have had a material effect on our results of operations during the periods presented.

Effects of Inflation

Inflation generally affects us by increasing our cost of labor and contract costs included within operating expenses. We do not believe inflation has had a material effect on our results of operations during the periods presented.

Foreign Currency Exchange Risk

We are exposed to market risk related to changes in foreign currency exchange rates. We contract with vendors that are located outside the United States, and certain invoices are denominated in foreign currencies. We are subject to fluctuations in foreign currency exchange rates in connection with these arrangements. To date, we have not experienced any material effects from foreign currency fluctuations. We believe an immediate hypothetical 5% change in foreign currency exchange rates would not have had a material effect on our results of operations during the periods presented.

ITEM 8. Financial Statements and Supplementary Data

The consolidated financial statements required pursuant to this item are incorporated by reference herein from the applicable information included in Item 15 of this annual report and are presented beginning on page F-1.

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

None.

ITEM 9A. Controls and Procedures

Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in our periodic and current reports that we file with the SEC is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate, to allow timely decisions regarding required disclosure. In designing and evaluating the disclosure controls and procedures, management recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable and not absolute assurance of achieving the desired control objectives. In reaching a reasonable level of assurance, management necessarily was required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures. In addition, the design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions; over time, controls may become inadequate because of

changes in conditions, or the degree of compliance with policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

Our management, with the participation of our principal executive officer and principal financial officer, has evaluated the effectiveness of our disclosure controls and procedures as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act as of the end of the period covered by this annual report. Based on such evaluation, our principal executive officer and principal financial officer have concluded that as of such date, our disclosure controls and procedures were effective.

Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with GAAP. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions or that the degree of compliance with the policies or procedures may deteriorate.

Our management assessed the effectiveness of our internal control over financial reporting as of December 31, 2024 based on the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in its 2013 Internal Control — Integrated Framework. Based on this assessment, our management has concluded that our internal control over financial reporting was effective as of December 31, 2024.

Remediation of Material Weakness

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the Company's annual or interim financial statements will not be prevented or detected on a timely basis.

As disclosed in "Part II Item 9A Controls and Procedures" in our Annual Report on Form 10-K for the year ended December 31, 2023, we identified a material weakness in internal control related to ineffective controls with respect to segregation of duties over certain information technology general controls (ITGCs) related to a module within our enterprise resource planning (ERP) system (the "Material Weakness"). These ITGCs were not operating effectively to (i) restrict access to certain data and the ability to make changes thereto, and (ii) to monitor changes to such data.

During the year ended December 31, 2024, we have changed the relevant access to address the known segregation of duties issues and have updated our access review controls to include additional procedures. During the fourth quarter of 2024, we completed our testing of the operating effectiveness of the implemented controls and found them to be effective. As a result, we have concluded the Material Weakness has been remediated as of December 31, 2024.

The Company's independent registered public accounting firm who audited the consolidated financial statements included in the Annual Report on Form 10-K has issued an unqualified report on the effectiveness of the Company's internal control over financial reporting. This attestation report appears on page F-2 of this Annual Report on Form 10-K.

Attestation Report of the Registered Public Accounting Firm

BDO USA, P.C. has audited the effectiveness of the Company's internal control over financial reporting as of December 31, 2024, as stated in its report dated February 27, 2025, which is included below.

Changes in Internal Control Over Financial Reporting

Except as described above, there have been no changes in our internal control over financial reporting during the year ended December 31, 2024 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Report of Independent Registered Public Accounting Firm

Stockholders and Board of Directors
Avidity Biosciences, Inc.
San Diego, California

Opinion on Internal Control Over Financial Reporting

We have audited Avidity Biosciences, Inc.'s (the "Company's") internal control over financial reporting as of December 31, 2024, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (the "COSO criteria"). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2024, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the consolidated balance sheets of the Company as of December 31, 2024 and 2023, the related consolidated statements of operations and comprehensive loss, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2024 and the related notes and our report dated February 27, 2025 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying "Item 9A, Management's Annual Report on Internal Control over Financial Reporting". Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit of internal control over financial reporting in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ BDO USA, P.C.
San Diego, California
February 27, 2025

ITEM 9B. Other Information

Rule 10b5-1 Trading Arrangements

From time to time, our officers (as defined in Rule 16a–1(f)) and directors may enter into Rule 10b5-1 or non-Rule 10b5-1 trading arrangements (as each such term is defined in Item 408 of Regulation S-K). During the three months ended December 31, 2024, our officers or directors took the following actions with respect to such trading arrangements:

			Trading Arrangement			
	Action	Date	Rule 10b5-1*	Non-Rule 10b5-1**	Total Shares to be Sold	Expiration Date
Troy Wilson (Ph.D., J.D.)[1]	Adopt	12/4/2024	X		190,106[2]	3/31/2026
Arthur A. Levin (Ph.D.)	Adopt	10/17/2024	X		309,096	12/31/2025

* Intended to satisfy the affirmative defense of Rule 10b5-1(c)
** Not intended to satisfy the affirmative defense of Rule 10b5-1(c)

(1) This plan was adopted by Mr. Wilson and certain irrevocable trusts for the benefit of Mr. Wilson's family members, none of which Mr. Wilson controls.
(2) Represents the aggregate maximum number of shares to be sold under this plan by Mr. Wilson and all signatories to this plan. The maximum number of shares to be sold under this plan by Mr. Wilson is 59,000.

ITEM 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

PART III

ITEM 10. Directors, Executive Officers and Corporate Governance

The information required by this item will be contained in our definitive proxy statement to be filed with the SEC in connection with our 2025 Annual Meeting of Stockholders, or the Definitive Proxy Statement, which is expected to be filed not later than 120 days after the end of our fiscal year ended December 31, 2024, under the headings “Election of Directors,” “Corporate Governance,” “Executive Officers,” and, if applicable, “Delinquent Section 16(a) Reports,” and is incorporated herein by reference.

Code of Business Conduct and Ethics

We have adopted a Code of Business Conduct and Ethics that applies to our officers, directors, and employees, which is available on our website at www.aviditybiosciences.com. The Code of Business Conduct and Ethics contains general guidelines for conducting the business of our company consistent with the highest standards of business ethics and is intended to qualify as a “code of ethics” within the meaning of Section 406 of Sarbanes-Oxley and Item 406 of Regulation S-K. In addition, we intend to promptly disclose (1) the nature of any amendment to our Code of Business Conduct and Ethics that applies to our principal executive officer, principal financial officer, principal accounting officer or controller or persons performing similar functions and (2) the nature of any waiver, including an implicit waiver, from a provision of our Code of Business Conduct and Ethics that is granted to one of these specified officers, the name of such person who is granted the waiver and the date of the waiver on our website in the future.

Insider Trading Compliance Policy and Procedures

We have adopted an Insider Trading Policy and Procedures governing the purchase, sale and other disposition of our securities by our directors, officers, employees and other covered persons, which is designed to promote compliance with insider trading laws, rules and regulations, and the Nasdaq Stock Market LLC listing rules, as applicable. A copy of our Insider Trading Compliance Policy and Procedures is filed as Exhibit 19.1 to this Annual Report on Form 10-K.

ITEM 11. Executive Compensation

The information required by this item will be contained in our Definitive Proxy Statement under the heading “Executive Compensation and Other Information” and "Compensation Committee Interlocks and Insider Participation" and is incorporated herein by reference.

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

The information required by this item will be contained in our Definitive Proxy Statement under the heading “Security Ownership of Certain Beneficial Owners and Management” and is incorporated herein by reference.

The information required by Item 201(d) of Regulation S-K will be contained in our Definitive Proxy Statement under the heading “Executive Compensation and Other Information” and is incorporated herein by reference.

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

The information required by this item will be contained in our Definitive Proxy Statement under the headings “Certain Relationships and Related Person Transactions,” “Board Independence” and “Committees of the Board of Directors” and is incorporated herein by reference.

ITEM 14. Principal Accountant Fees and Services

The information required by this item will be contained in our Definitive Proxy Statement under the headings “Independent Registered Public Accountants’ Fees” and "Audit Committee Pre-Approval of Audit and Non-Audit Services" and is incorporated herein by reference.

PART IV

ITEM 15. Exhibits and Financial Statement Schedules

1. Financial Statements.

The consolidated financial statements of Avidity Biosciences, Inc., together with the report thereon of BDO USA, P.C., an independent registered public accounting firm, are included in this annual report on Form 10-K beginning on page F-1.

2. Financial Statement Schedules.

All schedules have been omitted because the information required to be set forth therein is not applicable or is shown in the consolidated financial statements or notes thereto.

3. Exhibits.

A list of exhibits is set forth on the Exhibit Index immediately preceding the signature page of this annual report on Form 10-K and is incorporated herein by reference.

ITEM 16. Form 10-K Summary

None.

Avidity Biosciences, Inc.
Index to Consolidated Financial Statements

Report of Independent Registered Public Accounting Firm

Stockholders and Board of Directors
Avidity Biosciences, Inc.
San Diego, California

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Avidity Biosciences, Inc. (the "Company") as of December 31, 2024 and 2023, the related consolidated statements of operations and comprehensive loss, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2024, 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, 2024 and 2023, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2024, in conformity with accounting principles generally accepted in the United States of America.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the Company's internal control over financial reporting as of December 31, 2024, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") and our report dated February 27, 2025 expressed an unqualified opinion thereon.

Basis for Opinion

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

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud.

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

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of a critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Clinical Trial Accruals

As described in Notes 2 and 6 to the consolidated financial statements, the Company records accruals for estimated costs incurred for ongoing research and development activities, including clinical trial related activities. When evaluating the adequacy of the accrued liabilities, the Company analyzes progress of the services, including the phase or completion of events, invoices received, and contracted costs. As of December 31, 2024, the Company recorded $8.2 million in clinical trial accruals, which was included in accounts payable and accrued expenses on the consolidated balance sheet.

We identified the estimation of clinical trial accruals as a critical audit matter. Management's judgment was required in estimating the progress of services and the associated costs incurred used to determine the accrued liabilities for clinical trial expenses. Auditing clinical trial accruals was especially challenging due to the nature and extent of audit effort required to address the matter.

The primary procedures we performed to address this critical audit matter included:

- Testing management's process for estimating clinical trial accruals by: (i) obtaining and inspecting certain agreements and amendments and (ii) confirming total clinical costs incurred and total amounts billed with certain third-party vendors.
- Testing the completeness of the Company's clinical trial accruals by: (i) evaluating internal materials and publicly available information (such as press releases and public databases that track clinical trials) and (ii) testing invoices received after year-end for certain third-party vendors.

/s/ BDO USA, P.C.

We have served as the Company's auditor since 2016.

San Diego, California
February 27, 2025

Avidity Biosciences, Inc.
Consolidated Balance Sheets
(in thousands, except par value)

	December 31,	
	2024	2023
Assets		
Current assets:		
Cash and cash equivalents	$ 219,868	$ 185,082
Marketable securities	1,281,629	410,269
Prepaid and other assets	40,793	15,956
Total current assets	1,542,290	611,307
Property and equipment, net	12,670	8,381
Restricted cash	2,795	295
Right-of-use assets	5,619	8,271
Other assets	521	301
Total assets	$ 1,563,895	$ 628,555
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable and accrued liabilities	$ 69,524	$ 34,341
Accrued compensation	3,663	14,335
Lease liabilities, current portion	3,844	3,639
Deferred revenue, current portion	20,987	28,365
Total current liabilities	98,018	80,680
Lease liabilities, net of current portion	2,957	6,213
Deferred revenue, net of current portion	37,961	40,898
Total liabilities	138,936	127,791
Commitments and contingencies (Note 7)		
Stockholders' equity:		
Common stock, $0.0001 par value; authorized shares – 400,000; issued and outstanding shares – 119,893 and 79,275 at December 31, 2024 and 2023, respectively	12	8
Additional paid-in capital	2,315,111	1,071,395
Accumulated other comprehensive income	2,902	125
Accumulated deficit	(893,066)	(570,764)
Total stockholders' equity	1,424,959	500,764
Total liabilities and stockholders' equity	$ 1,563,895	$ 628,555

See accompanying notes.

Avidity Biosciences, Inc.
Consolidated Statements of Operations and Comprehensive Loss
(in thousands, except per share data)

	Year Ended December 31,		
	2024	2023	2022
Collaboration revenue	$ 10,897	$ 9,560	$ 9,224
Operating expenses:			
Research and development	303,593	190,968	150,404
General and administrative	86,240	54,190	37,733
Total operating expenses	389,833	245,158	188,137
Loss from operations	(378,936)	(235,598)	(178,913)
Other income (expense):			
Interest income	56,882	23,972	4,975
Other expense	(248)	(594)	(57)
Total other income	56,634	23,378	4,918
Net loss	$ (322,302)	$ (212,220)	$ (173,995)
Net loss per share, basic and diluted	$ (2.89)	$ (2.91)	$ (3.34)
Weighted-average shares outstanding, basic and diluted	111,582	73,012	52,162
Other comprehensive income (loss):			
Net unrealized gains (losses) on marketable securities	2,777	2,823	(2,511)
Comprehensive loss	$ (319,525)	$ (209,397)	$ (176,506)

See accompanying notes.

Avidity Biosciences, Inc.
Consolidated Statements of Stockholders' Equity
(in thousands)

	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount				
Balance at December 31, 2021	47,754	$ 5	$ 566,161	$ (187)	$ (184,549)	$ 381,430
Issuance of common stock in public offerings, net of issuance costs of $18,230	21,572	2	344,614	—	—	344,616
Issuance of common stock upon exercise of stock options	351	—	470	—	—	470
Issuance of common stock under employee stock purchase plan	91	—	922	—	—	922
Vesting of early exercise options	—	—	4	—	—	4
Stock-based compensation	—	—	27,139	—	—	27,139
Net loss	—	—	—	—	(173,995)	(173,995)
Other comprehensive loss	—	—	—	(2,511)	—	(2,511)
Balance at December 31, 2022	69,768	$ 7	$ 939,310	$ (2,698)	$ (358,544)	$ 578,075
Issuance of common stock in a private placement, net of issuance costs of $74 and allocation to deferred revenues (Note 5)	5,075	1	31,189	—	—	31,190
Issuance of common stock in public offerings, net of issuance costs of $1,385	4,107	—	60,547	—	—	60,547
Issuance of common stock upon exercise of stock options	149	—	573	—	—	573
Issuance of common stock under employee stock purchase plan	176	—	1,554	—	—	1,554
Stock-based compensation	—	—	38,222	—	—	38,222
Net loss	—	—	—	—	(212,220)	(212,220)
Other comprehensive income	—	—	—	2,823	—	2,823
Balance at December 31, 2023	79,275	$ 8	$1,071,395	$ 125	$ (570,764)	$ 500,764
Issuance of common stock in a private placement, net of issuance costs of $12,821	15,225	2	238,386	—	—	238,388
Issuance of pre-funded warrants in a private placement, net of issuance costs of $7,605	—	—	141,395	—	—	141,395
Issuance of common stock in public offerings, net of issuance costs of $49,749	20,969	2	762,159	—	—	762,161
Issuance of common stock upon exercise of stock options	3,498	—	48,204	—	—	48,204
Issuance of common stock under employee stock purchase plan	179	—	2,209	—	—	2,209
Issuance of common stock in connection with vesting of restricted stock units	747	—	—	—	—	—
Stock-based compensation	—	—	51,363	—	—	51,363
Net loss	—	—	—	—	(322,302)	(322,302)
Other comprehensive income	—	—	—	2,777	—	2,777
Balance at December 31, 2024	119,893	$ 12	$2,315,111	$ 2,902	$ (893,066)	$ 1,424,959

See accompanying notes.

Avidity Biosciences, Inc.
Consolidated Statements of Cash Flows
(in thousands)

	Year Ended December 31,		
	2024	2023	2022
Cash flows from operating activities			
Net loss	$ (322,302)	$ (212,220)	$ (173,995)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation	2,776	2,101	1,387
Stock-based compensation expense	51,363	38,222	27,139
Amortization of premiums and discounts on marketable securities, net	(21,447)	(11,274)	(615)
Noncash operating lease costs	3,297	2,978	2,749
Changes in operating assets and liabilities:			
Prepaid and other assets	(25,057)	(3,444)	(6,616)
Accounts payable and accrued liabilities	35,183	1,769	18,315
Accrued compensation	(10,672)	3,145	2,250
Operating lease liabilities	(3,696)	(3,328)	(1,762)
Deferred revenue	(10,315)	62,987	(5,120)
Net cash used in operating activities	(300,870)	(119,064)	(136,268)
Cash flows from investing activities			
Purchases of marketable securities	(1,433,535)	(461,002)	(355,837)
Maturities of marketable securities	586,400	335,160	168,705
Purchases of property and equipment	(7,066)	(4,228)	(2,823)
Net cash used in investing activities	(854,201)	(130,070)	(189,955)
Cash flows from financing activities			
Proceeds from issuance of common stock in public offerings, net of issuance costs	762,161	60,547	344,779
Proceeds from issuance of common stock in private placements, net of issuance costs and allocation to deferred revenues (Note 5)	238,388	31,190	—
Proceeds from issuance of pre-funded warrants in a private placement, net of issuance costs	141,395	—	—
Proceeds from the issuance of common stock under employee incentive equity plans	50,413	2,127	1,392
Net cash provided by financing activities	1,192,357	93,864	346,171
Net increase (decrease) in cash, cash equivalents and restricted cash	37,286	(155,270)	19,948
Cash, cash equivalents and restricted cash at beginning of period	185,377	340,647	320,699
Cash, cash equivalents and restricted cash at end of period	$ 222,663	$ 185,377	$ 340,647
Supplemental schedule of noncash investing and financing activities:			
Right-of-use assets obtained in exchange for operating lease liabilities	$ —	$ 1,741	$ —
Costs incurred, but not paid, in connection with purchases of property and equipment included in accounts payable and accrued liabilities	$ 3,424	$ —	$ 233

See accompanying notes.

Avidity Biosciences, Inc.
Notes to Consolidated Financial Statements

1. Description of Business and Basis of Presentation

Description of Business

Avidity Biosciences, Inc. (the Company or Avidity) is a biopharmaceutical company committed to delivering a new class of RNA therapeutics called Antibody Oligonucleotide Conjugates (AOCs). The Company's proprietary AOC platform is designed to combine the specificity of monoclonal antibodies with the precision of RNA therapeutics to target the root cause of diseases previously untreatable with such therapeutics.

Liquidity

Since inception, the Company has relied on various means of raising capital, including public offerings, various sales agreements, the sale and issuance of convertible preferred stock, funding under collaboration agreements, and a private placement of common stock. The Company has devoted substantially all of its resources to organizing and staffing the Company, business planning, raising capital, developing its proprietary AOC platform, identifying potential product candidates, establishing its intellectual property portfolio, conducting research, preclinical studies, advancing its clinical programs and providing other general and administrative support for these operations. In addition, the Company has a limited operating history, has incurred operating losses since inception and expects that it will continue to incur net losses into the foreseeable future as it continues the development of its product candidates and development programs. As of December 31, 2024, the Company had an accumulated deficit of $893.1 million and cash, cash equivalents, and marketable securities of $1.5 billion.

The Company believes that existing cash, cash equivalents and marketable securities will be sufficient to fund the Company's operations for at least 12 months from the date of the filing of this Form 10-K. The Company plans to finance its future cash needs through equity offerings, debt financings or other capital sources, including potential collaborations, licenses and other similar arrangements. If the Company is not able to secure adequate additional funding, it may be forced to make reductions in spending, extend payment terms with suppliers, liquidate assets where possible, and/or delay or reduce the scope of its planned development programs. Any of these actions could materially harm the Company's business, results of operations, and future prospects.

Basis of Presentation

The accompanying consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles (GAAP) and the rules and regulations of the Securities and Exchange Commission (SEC). The consolidated financial statements reflect all adjustments which, in the opinion of management, are necessary for a fair presentation of the results for the periods presented. All such adjustments are of a normal and recurring nature. The operating results presented in these consolidated financial statements are not necessarily indicative of the results that may be expected for any future periods. Certain prior year amounts have been reclassified to conform to the current year presentation.

In December 2023, the Company formed Avidity Biosciences Ireland Limited, a wholly-owned subsidiary (the Subsidiary). The accompanying consolidated financial statements reflect the operations of Avidity Biosciences, Inc. and the Subsidiary. Intercompany balances and transactions have been eliminated in consolidation. The activity and balances attributable to the Subsidiary for the year ended December 31, 2024 were immaterial.

2. Summary of Significant Accounting Policies

Use of Estimates

The preparation of consolidated financial statements in accordance with GAAP requires the Company to make estimates and assumptions that impact the reported amounts of assets, liabilities, revenues and expenses and the disclosure of contingent assets and liabilities in the consolidated financial statements and accompanying notes. Although estimates are based on the Company's knowledge of current events and actions

it may undertake in the future, actual results may ultimately materially differ from these estimates and assumptions.

Cash, Cash Equivalents and Restricted Cash

The Company considers all highly liquid investments with original maturities of 90 days or less from the date of purchase to be cash equivalents. Cash and cash equivalents include cash in readily available checking and money market accounts. Restricted cash represents cash held as collateral for the letters of credit required under the Company's facility lease and is reported as a long-term asset in the accompanying consolidated balance sheets. Cash and cash equivalents are considered Level 1 investments.

Marketable Securities

The Company's marketable securities primarily consist of U.S. Government debt securities. The Company classifies its marketable securities as available-for-sale and records such assets at estimated fair value in the consolidated balance sheets, with unrealized gains and losses, if any, reported as a component of other comprehensive income (loss) within the consolidated statements of operations and comprehensive loss and as a separate component of stockholders' equity. The Company classifies marketable securities with remaining maturities greater than one year as current assets because such marketable securities are available to fund the Company's current operations. Realized gains and losses are calculated on the specific identification method and recorded as interest income. There were no realized gains and losses recognized during the periods presented.

At each balance sheet date, the Company assesses available-for-sale debt securities in an unrealized loss position to determine whether the unrealized loss or any potential credit losses should be recognized in net income (loss). For available-for-sale debt securities in an unrealized loss position, the Company first assesses whether it intends to sell, or 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 the criteria regarding intent or requirement to sell is met, the security's amortized cost basis is written down to fair value through net income (loss). For available-for-sale securities that do not meet the aforementioned criteria, the Company evaluates whether the decline in fair value has resulted from credit losses or other factors. In making this assessment, the Company considers the severity of the impairment, any changes in interest rates, underlying credit ratings and forecasted recovery, among other factors. The credit-related portion of unrealized losses, and any subsequent improvements, are recorded as an allowance in interest income. There have been no impairment or credit losses recognized during the periods presented.

The Company excludes the applicable accrued interest from both the fair value and amortized costs basis of the Company's available-for-sale securities for purposes of identifying and measuring an impairment. Accrued interest receivable on available-for-sale securities is recorded within prepaid and other assets on the consolidated balance sheets. The Company made an accounting policy election to (1) not measure an allowance for credit loss for accrued interest receivable, and (2) to write-off any uncollectible accrued interest receivable as a reversal of interest income in a timely manner, which the Company considers to be in the period in which it determines the accrued interest will not be collected.

See Note 4 (Marketable Securities) for further information.

Concentration of Credit Risk

Financial instruments that potentially subject the Company to significant concentrations of credit risk consist primarily of cash, cash equivalents and marketable securities. The Company maintains deposits in federally insured financial institutions in excess of federally insured limits. The Company has established guidelines regarding approved investments, credit quality, diversification, liquidity and maturities of investments, which are designed to maintain safety and liquidity. The Company has not experienced any losses in such accounts and believes it is not exposed to significant risk on its cash balances due to the financial position of the depository institutions in which those deposits are held.

Fair Value of Financial Instruments

Certain assets and liabilities are carried at fair value under GAAP. Fair value is defined as the exchange price that would be received for 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 on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. Financial assets and liabilities carried at fair value are to be classified and disclosed in one of the following three levels of the fair value hierarchy, of which the first two are considered observable and the last is considered unobservable:

- Level 1—Quoted prices in active markets for identical assets or liabilities.
- Level 2—Observable inputs, such as quoted prices in active markets for similar assets or liabilities, quoted prices in markets that are not active for identical or similar assets or liabilities, or other inputs that are observable or can be corroborated by observable market data.
- Level 3—Unobservable inputs that are supported by little or no market activity and that are significant to determining the fair value of the assets or liabilities, including pricing models, discounted cash flow methodologies and similar techniques.

The asset's or liability's fair value measurement level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement.

None of the Company's non-financial assets are recorded at fair value on a non-recurring basis. The carrying amounts reflected in the Company's consolidated balance sheets for prepaid and other assets and accounts payable and accrued liabilities approximate their fair values due to their short-term nature. The Company recognizes transfers between levels of the fair value hierarchy on the date of the event or change in circumstances that caused the transfer. There have been no transfers into or out of Level 3 assets during any of the periods presented.

See Note 3 (Fair Value Measurements) for information on assets measured at fair value.

Property and Equipment, net

Property and equipment, including leasehold improvements, are stated at cost less accumulated depreciation and amortization. Depreciation and amortization are recorded using the straight-line method over the estimated useful lives of the related assets, which ranges from three to five years. Leasehold improvements are amortized on a straight-line basis over the shorter of the estimated useful lives of the assets or the remaining lease term. Repairs and maintenance charges that do not increase the useful life of the assets are charged to operating expenses as incurred.

Impairment of Long-Lived Assets

Long-lived assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of the asset or an asset group may not be recoverable. If such triggering event is determined to have occurred, the asset's or asset group's carrying value is compared to the future undiscounted cash flows expected to be generated. The Company has not recognized any impairment losses in any of the periods presented in these consolidated financial statements.

Segment Information

Our operations constitute a single operating and reportable segment, headquartered in the United States. Operating segments are defined as components of an enterprise for which discrete financial information is available and is evaluated regularly by the chief operating decision maker ("CODM"), in deciding how to allocate resources and assess performance. Our CODM is our Chief Executive Officer, who reviews consolidated financial information for the purposes of allocating resources and assessing performance.

All of our property and equipment is located within the United States and all of our revenues were derived within the United States.

See Note 10 (Segment Information) for further information.

Revenue Recognition

To date, all the Company's revenue has been derived from collaboration and research agreements. The terms of these arrangements include the following types of payments to the Company: non-refundable, upfront

license fees; development, regulatory and commercial milestone payments; payments for research and development services provided by the Company or for manufacturing supply services the Company provides through its contract manufacturers; and royalties on net sales of licensed products.

At the inception of a collaboration arrangement, the Company first assesses whether the contractual arrangement is within the scope of Accounting Standards Codification (ASC) Topic 808, Collaborative Arrangements (ASC 808) to determine whether the arrangement involves a joint operating activity and involves two (or more) parties that are both active participants in the activity and exposed to significant risks and rewards dependent on the commercial success of such activity. Then the Company determines whether the collaboration arrangement in its entirety represents a contract with a customer as defined by ASC Topic 606 (ASC 606). If only a portion of the collaboration arrangement is potentially with a customer, the Company applies the distinct good or service unit-of-account guidance in ASC 606 to determine whether there is a unit of account that should be accounted for under ASC 606.

The Company performs the following steps in determining the appropriate amount of revenue to be recognized as it fulfills its obligations under each of these agreements: (i) identification of the promised goods or services in the contract; (ii) determination of whether the promised goods or services are performance obligations, including whether they are distinct in the context of the contract; (iii) measurement of the transaction price, including the constraint on variable consideration; (iv) allocation of the transaction price to the performance obligations; and (v) recognition of revenue when, or as, the Company satisfies each performance obligation. The Company applies significant judgment when making estimates and assumptions under these agreements, including (i) evaluating whether contractual obligations represent distinct performance obligations, ii) the assessment of whether options represent material rights, (iii) determining whether there are observable standalone prices and allocating transaction price to performance obligations within a contract, (iv) assessing whether any licenses are functional or symbolic, (v) determining when performance obligations have been met, and (vi) assessing the recognition of variable consideration. The Company evaluates each performance obligation to determine if it can be satisfied and recognized as revenue at a point in time or over time.

The Company receives payments from its collaborators based on billing schedules established in each contract. Upfront and other payments may require deferral of revenue recognition to a future period until the Company performs its obligations under its research and collaboration arrangements. Amounts are recorded as accounts receivable when the Company's right to consideration is unconditional.

License fees, non-refundable upfront fees, and funding of research activities are considered fixed, while milestone payments are identified as variable consideration and excluded from the transaction price. The Company will recognize revenue for sales-based royalty if and when a subsequent sale occurs.

See Note 5 (Collaboration, License and Research Agreements) for further information.

Research and Development Costs and Accruals

Research and development costs are expensed as incurred and include salaries, benefits and stock-based compensation associated with research and development personnel, third-party research and development expenses, license fees, laboratory supplies, facilities, overhead costs, and consultants. Nonrefundable advance payments for goods and services that will be used in future research and development activities are capitalized and recorded as expense in the period that the Company receives the goods or when services are performed.

The Company has entered into various research and development contracts with research institutions, clinical research organizations, clinical manufacturing organizations and other companies. Payments for these activities are based on the terms of the individual agreements, which may differ from the pattern of costs incurred, and payments made in advance of performance are reflected in the accompanying consolidated balance sheets as prepaid and other assets or accrued liabilities. The Company records accruals for estimated costs incurred for ongoing research and development activities. When evaluating the adequacy of these accrued liabilities, the Company analyzes progress of the services, including the phase or completion of events, invoices received, and contracted costs. Significant judgments and estimates may be made in determining the prepaid or accrued balances at the end of any reporting period. Actual results could differ from the Company's estimates.

Upfront and milestone payments to acquire contractual rights to licensed technology are expensed when incurred if there is uncertainty in the Company receiving future economic benefit from the acquired

contractual rights. Certain of these contractual rights may require the Company to make additional milestone payments upon initiation of a pivotal trial and the U.S. Food and Drug Administration approval.

Patent Costs

Costs related to filing and pursuing patent applications are recorded as general and administrative expense and expensed as incurred since recoverability of such expenditures is uncertain.

Income Taxes

Income taxes are accounted for using the asset and liability method. The Company recognizes deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the consolidated financial statements or tax returns. Deferred tax assets and liabilities are determined based on the differences between the consolidated financial statements and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. Valuation allowances are provided, if based upon the weight of available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date.

When uncertain tax positions exist, the Company recognizes the tax benefit of tax positions to the extent that the benefit would more likely than not be realized assuming examination by the taxing authority. The determination as to whether the tax benefit will more likely than not be realized is based upon the technical merits of the tax position as well as consideration of the available facts and circumstances.

The Company is subject to taxation in the United States and various state jurisdictions. As of December 31, 2024, the Company’s tax years since conversion to a corporation in 2019 are subject to examination by taxing authorities.

Leases

The Company determines if an arrangement is a lease at inception. Lease right-of-use assets represent Company's right to use an underlying asset for the lease term and lease liabilities represent Company's obligation to make lease payments arising from the lease. Operating lease right-of-use assets and liabilities are recognized at commencement date based on the present value of lease payments over the lease term. The interest rate used to determine the present value of the future lease payments is our incremental borrowing rate, because the interest rate implicit in most of our leases is not readily determinable. The incremental borrowing rate is estimated to approximate the interest rate on a collateralized basis with similar terms and payments, and in similar economic environments. The operating lease right-of-use asset also includes any lease payments made and excludes lease incentives. The lease terms may include options to extend or terminate the lease when it is reasonably certain that we will exercise that option. Lease expense for lease payments is recognized on a straight-line basis over the lease term. Variable lease payments that do not depend on a rate or index, payments associated with non-lease components, and costs related to leases with terms of less than 12 months are expensed as incurred.

Warrants

The Company accounts for warrants as equity-classified instruments based on an assessment of the warrant’s specific terms and applicable authoritative guidance in ASC 480, Distinguishing Liabilities from Equity (ASC 480) and ASC 815, Derivatives and Hedging (ASC 815). The assessment considers whether the warrants are freestanding financial instruments pursuant to ASC 480, meet the definition of a liability pursuant to ASC 480, and whether the warrants meet all of the requirements for equity classification under ASC 815, including whether the warrants are indexed to the Company’s own common stock and whether the warrant holders could potentially require “net cash settlement” in a circumstance outside of the Company’s control, among other conditions for equity classification. This assessment, which requires the use of professional judgment, is conducted at the time of warrant issuance and as of each subsequent quarterly period end date while the warrants are outstanding.

For warrants that meet all criteria for equity classification, the warrants are required to be recorded as additional paid-in capital in the consolidated balance sheets at the time of issuance. Equity-classified warrants are measured at their estimated fair value on the issuance date.

Stock-Based Compensation

Stock-based compensation expense is incurred related to stock option and restricted stock grants, and to shares sold under the Employee Stock Purchase Plan (ESPP).

Stock-based compensation expense for stock option grants is determined using the Black-Scholes-Merton (BSM) option pricing model and is recorded at the estimated fair value of the award as of the grant date and recognized as expense on a straight-line basis over the requisite service period (usually the vesting period) of the stock-based award. Stock-based compensation expense for Restricted Stock Units (RSUs) is recorded at the market price of a share of the Company's stock on the date of grant and is recognized as expense on a straight-line basis over the service period. Stock-based compensation expense for Performance Stock Units (PSUs) is recorded at the market price of a share of the Company's stock on the date of grant and recognized on a straight-line basis over the requisite service periods beginning when the achievement of the performance condition is determined to be probable. Stock-based compensation expense for employee stock purchases under the Company's ESPP is determined using the BSM option pricing model and is recorded at the estimated fair value of the purchase as of the plan enrollment date and is recognized as expense on a straight-line basis over the applicable six-month ESPP offering period. The estimation of fair value for stock-based compensation requires management to make estimates and judgments about, among other things, the estimated life of options and volatility of the Company's common stock. These judgments directly affect the amount of compensation expense that will be recognized. Forfeitures are accounted for as incurred.

Comprehensive Loss

Comprehensive loss is defined as the change in equity during a period from transactions and other events and circumstances from non-owner sources, including cumulative translation adjustments and unrealized gains and losses on marketable securities. Comprehensive gains (losses) have been reflected in the consolidated statements of operation and comprehensive loss for all periods presented.

Net Loss Per Share

Basic net loss per share is computed by dividing the net loss by the weighted-average number of common shares outstanding for the period, adjusted for the weighted-average number of common shares outstanding that are subject to repurchase or forfeiture. Diluted net loss per share is computed by dividing the net loss by the weighted-average number of common shares and dilutive common stock equivalents outstanding for the period determined using the treasury-stock and if-converted methods. For all periods presented, there is no difference in the number of shares used to calculate basic and diluted shares outstanding as inclusion of the common stock equivalent securities would be anti-dilutive. The pre-funded common stock warrants are included in the calculation of basic and diluted net loss per share as the exercise price of $0.001 per share is not substantive and the shares are issuable for little or no consideration.

Common stock equivalent securities not included in the calculation of diluted net loss per share, because to do so would be anti-dilutive, are as follows (in common stock equivalent shares; in thousands):

	December 31,		
	2024	2023	2022
Common stock options issued and outstanding	12,635	12,495	9,352
Restricted stock units	2,111	758	—
Performance stock units	925	750	—
ESPP shares pending issuance	12	12	5
Total	15,683	14,015	9,357

Recently Issued Accounting Pronouncements

In December 2023, the Financial Accounting Standards Board (FASB) issued Accounting Standard Update (ASU) 2023-09, Income Taxes (Topic 740): Improvements to Income Tax Disclosures, which enhances income tax disclosures, primarily through standardization and disaggregation of the income tax rate reconciliation and disaggregation of income taxes paid. ASU 2023-09 is effective for annual periods beginning after December 15, 2024. ASU 2023-09 can be applied either prospectively or retrospectively and early

adoption is permitted. The Company is currently evaluating the impact that this guidance will have on the presentation of its consolidated financial statements and accompanying notes.

In November 2024, the FASB issued ASU 2024-03, Income Statement - Reporting Comprehensive Income - Expense Disaggregation Disclosures (Subtopic 220-40), which requires that public business entities disclose additional information about specific expense captions in the notes to financial statements at interim and annual reporting periods. The amendment in the update does not change or remove current expense disclosures, rather, it requires enhanced disaggregated disclosures of specific expense captions and affects where that information is presented within the notes to the financial statements. ASU 2024-03 is effective for annual periods beginning after December 15, 2026, and interim reporting periods beginning after December 15, 2027. ASU 2024-03 can be applied either prospectively or retrospectively and early adoption is permitted. The Company is currently evaluating the impact that this guidance will have on the presentation of its consolidated financial statements and accompanying notes.

Recently Adopted Accounting Pronouncements

In November 2023, the FASB issued ASU 2023-07, Segment Reporting (Topic 280): Improvements to Reportable Segment Disclosures, which modifies the disclosure and presentation requirements of reportable segments. The amendments in the update require the disclosure of significant segment expenses that are regularly provided to the CODM and included within each reported measure of segment profit and loss. The amendments also require disclosure of all other segment items by reportable segment and a description of its composition. Additionally, the amendments require disclosure of the title and position of the CODM and an explanation of how the CODM uses the reported measure(s) of segment profit or loss in assessing segment performance and deciding how to allocate resources. Lastly, the amendment requires that a public entity that has a single reportable segment provide all the disclosures required by ASU 2023-07 and all existing segment disclosures in Topic 280. This update is effective for annual periods beginning after December 15, 2023, and interim periods within fiscal years beginning after December 15, 2024. ASU 2023-07 is applied retrospectively, and early adoption is permitted. The Company adopted ASU 2023-07 in the year ended December 31, 2024.

3. Fair Value Measurements

The following tables summarize the Company's cash equivalents and marketable securities measured at fair value (in thousands):

		Fair Value Measurements Using		
As of December 31, 2024	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Cash equivalents:				
U.S. Treasury securities	$ 7,439	$ 7,439	$ —	$ —
Marketable securities:				
U.S. Treasury securities	1,281,139	1,281,139	—	—
Negotiable certificates of deposit	490	—	490	—
Total	$ 1,289,068	$ 1,288,578	$ 490	$ —

		Fair Value Measurements Using		
As of December 31, 2023	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Marketable securities:				
U.S. Treasury securities	$ 399,890	$ 399,890	$ —	$ —
U.S. Government agency securities	4,998	—	4,998	—
Negotiable certificates of deposit	5,381	—	5,381	—
Total	$ 410,269	$ 399,890	$ 10,379	$ —

4. Marketable Securities

The Company's marketable securities, which consist of highly liquid marketable debt securities, are classified as available-for-sale and are stated at fair value. The following tables summarize the Company's marketable securities (in thousands):

As of December 31, 2024	Maturity (in years)	Amortized Cost	Unrealized Gains	Unrealized Losses	Estimated Fair Value
U.S. Treasury securities	1 or less	$ 947,916	$ 2,154	$ (80)	$ 949,990
Negotiable certificates of deposit	1 or less	490	—	—	490
U.S. Treasury securities	1 - 2	330,321	1,218	(390)	331,149
Total		$ 1,278,727	$ 3,372	$ (470)	$ 1,281,629

As of December 31, 2023	Maturity (in years)	Amortized Cost	Unrealized Gains	Unrealized Losses	Estimated Fair Value
U.S. Treasury securities	1 or less	$ 301,053	$ 102	$ (530)	$ 300,625
U.S. Government agency securities	1 or less	5,000	—	(2)	4,998
Negotiable certificates of deposit	1 or less	4,410	1	(4)	4,407
U.S. Treasury securities	1 - 2	98,701	600	(36)	99,265
Negotiable certificates of deposit	1 - 2	980	—	(6)	974
Total		$ 410,144	$ 703	$ (578)	$ 410,269

The unrealized losses on the Company's marketable securities were caused by interest rate increases and resulted in the decrease in market value of these securities. There were no allowances for credit losses at December 31, 2024 and 2023 because (i) the decline in fair value is attributable to changes in interest rates and not credit quality, (ii) the Company does not intend to sell the investments before maturity, and (iii) it is not more likely than not that the Company will be required to sell the investments before recovery of their amortized cost bases.

The following table summarizes marketable securities in a continuous unrealized loss position for which an allowance for credit losses was not recorded (in thousands):

	Less Than 12 Months		12 Months or Greater		Total	
As of December 31, 2024	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses
U.S. Treasury securities	$ 247,404	$ (470)	$ —	$ —	$ 247,404	$ (470)
Total	$ 247,404	$ (470)	$ —	$ —	$ 247,404	$ (470)

	Less Than 12 Months		12 Months or Greater		Total	
As of December 31, 2023	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses
U.S. Treasury securities	$ 214,291	$ (566)	$ —	$ —	$ 214,291	$ (566)
U.S. Government agency securities	4,998	(2)	—	—	4,998	(2)
Negotiable certificates of deposit	3,665	(10)	—	—	3,665	(10)
Total	$ 222,954	$ (578)	$ —	$ —	$ 222,954	$ (578)

Accrued interest receivable on available-for-sale securities was $8.7 million and $2.6 million at December 31, 2024 and 2023, respectively. We have not written off any accrued interest receivable in any of the periods presented in these consolidated financial statements.

5. Collaboration, License and Research Agreements

Research Collaboration and License Agreement and Securities Purchase Agreement with Bristol Myers Squibb Company

In November 2023, the Company entered into (i) a Research Collaboration and License Agreement (the BMS Collaboration Agreement) with Bristol Myers Squibb Company (BMS) to expand on the research with MyoKardia Inc. (MyoKardia) and (ii) a Securities Purchase Agreement (the BMS Purchase Agreement) with BMS for the sale of 5,075,304 shares of the Company's common stock in a private placement transaction. The BMS Collaboration Agreement and the BMS Purchase Agreement are referred to herein as the "BMS Agreements." Under the terms of the BMS Collaboration Agreement, BMS will have the right to select up to five cardiovascular targets (each a “Target”) for collaborative research programs under which the Company will utilize its proprietary AOC platform to conduct research and development activities in order to identify, generate, and optimize AOC compounds directed to such Targets with the goal of generating an applicable development candidate. On a Target-by-Target basis, after the Company completes specified research activities in accordance with a research plan, BMS will have the right to develop, manufacture and commercialize such compounds generated during the research term, and products containing such compounds, worldwide. The research and activities conducted under the BMS Collaboration Agreement is governed by a joint steering committee comprised of representatives from the Company and BMS. Avidity received approximately $100 million upfront, including a $60 million nonrefundable cash payment and approximately $40 million from the sale of Avidity common stock at $7.8813 per share, which included an $8.7 million premium for the per share amount in excess of the fair value at the time of the transaction. Avidity is also eligible to receive up to approximately $1.35 billion in research and development milestone payments, up to approximately $825 million in commercial milestone payments, and tiered royalties from high single digits up to low double-digits on net sales. Avidity is responsible for its own research costs incurred under the agreement, subject to a cumulative spending cap of $40 million. BMS will fund all future clinical development, regulatory and commercialization activities coming from this collaboration.

We have determined that the BMS Agreements should be accounted for separately from the research collaboration with MyoKardia (the MyoKardia Agreement). We identified two distinct units of accounting under the BMS Agreements. The first distinct unit of accounting includes (i) a license to technology and patents; (ii) collaboration services, including research services and technical and regulatory support; and (iii) participation on research oversight committees. The Company has determined that these elements individually are either not capable of being distinct or are not distinct within the context of the contract and, therefore, will account for them as a single distinct performance obligation for purposes of revenue recognition. The second distinct unit of accounting is related to the sale of common stock, which will be accounted for as an issuance of equity at fair value in accordance with the applicable accounting standards. Consideration received related to the premium on sale of the Company's common stock was allocated to the transaction price for purposes of revenue recognition.

At the time the BMS Agreements were entered into, the fixed and determinable amount related to the first unit of accounting was $68.7 million, which includes the upfront cash payment and premium on sale of the Company's common stock. The Company will recognize revenue using the input method in an amount proportional to the collaboration expenses incurred and the total estimated collaboration expenses over the seven-year period in which it expects to deliver its performance obligation as this method provides the most faithful depiction of the Company's transfer of services under the BMS Agreements. The Company periodically reviews and updates the estimated collaboration expenses, when appropriate, which adjusts the percentage of revenue that is recognized for the period. The remaining $31.3 million was allocated to the second unit of accounting related to the sale of common stock (Note 8).

The initial consideration related to the $60 million cash payment and approximate $40 million sale of common stock was received prior to December 31, 2023. $9.8 million in revenues were recognized related to the BMS Agreements in 2024. No revenues were recognized related to the BMS Agreements in 2023.

Research Collaboration and License Agreement with Eli Lilly and Company

In April 2019, the Company entered into a Research Collaboration and License Agreement (the Lilly Agreement) with Eli Lilly and Company (Lilly) for the discovery, development and commercialization of AOC products directed against certain targets in immunology and other select indications on a worldwide basis. Under the Lilly Agreement, the Company granted Lilly an exclusive, worldwide, royalty-bearing license, with the right to sublicense (subject to certain conditions), under the Company’s technology to research, develop,

manufacture and sell products containing AOCs that are directed to up to six mRNA targets. The Company retains the right to use its technology to perform its obligations under the Lilly Agreement and for all purposes not granted to Lilly. The Company agreed that it will not, itself or with a third party, research, develop, manufacture or commercialize or otherwise exploit any compound or product directed against targets subject to the Lilly Agreement.

In consideration of the rights granted to Lilly under the Lilly Agreement, the Company received a one-time upfront fee of $20.0 million and is eligible to receive up to $60.0 million in development milestone payments, up to $140.0 million in regulatory milestone payments and up to $205.0 million in commercialization milestone payments per target. In addition, Lilly is obligated to reimburse the Company for research expenses, as defined in and incurred under the Lilly Agreement. Lilly is obligated to pay the Company a tiered royalty ranging from the mid-single to low-double digits on worldwide annual net sales of licensed products, subject to specified and capped reductions for the market entry of biosimilar products, loss of patent coverage of licensed products, and for payments owed to third parties for additional rights necessary to commercialize licensed products in the territory. Lilly's royalty obligations and the Lilly Agreement will expire on a licensed product-by-licensed product and country-by-country basis on the later of ten years from the date of the first commercial sale or when there is no longer a valid patent claim covering such licensed product in such country.

The Company has identified multiple promises to deliver goods and services, which include at inception of the agreement: (i) a license to technology and patents, information and know-how; and (ii) collaboration, including research services and technical and regulatory support provided by the Company. At inception, the Company has identified one performance obligation for the promises under the Lilly Agreement since the elements are either not capable of being distinct or are not distinct within the context of the contract. Accordingly, the Company recognizes revenue for the fixed or determinable collaboration in an amount proportional to the collaboration expenses incurred and the total estimated collaboration expenses over the 5-year period in which it expects to deliver its performance obligation. The Company periodically reviews and updates the estimated collaboration expenses, when appropriate, which adjusts the percentage of revenue that is recognized for the period. In connection with the Lilly Agreement, the Company recognized revenue of $1.1 million, $9.5 million, and $9.0 million for the years ended December 31, 2024, 2023, and 2022, respectively. There were no collaboration receivables related to the Lilly Agreement as of December 31, 2024. Collaboration receivables were $0.8 million related to the Lilly Agreement as of December 31, 2023, which are included in prepaid and other assets on the consolidated balance sheets.

Research Agreement with MyoKardia, Inc.

In December 2020, the Company entered into a Research Collaboration (the MyoKardia Agreement) with MyoKardia, a wholly-owned subsidiary of BMS, to demonstrate the potential utility of AOCs in cardiac tissue by leveraging MyoKardia's genetic cardiomyopathy platform including, among other aspects, its novel target discovery engine and proprietary cardiac disease models. In connection with the MyoKardia Agreement, the Company recognized an immaterial amount of revenue in each of the periods presented. Under the terms of the MyoKardia Agreement, in July 2023, BMS as the successor in interest to MyoKardia, exercised its option to negotiate and enter into a License Agreement covering AOCs that modulate the function of cardiovascular targets. The Research Collaboration with MyoKardia was terminated in November 2023 upon execution of the Research Collaboration and License Agreement with BMS.

The amounts received that have not yet been recognized as revenue are deferred on the Company's consolidated balance sheet and will be recognized over the remaining research and development period until the performance obligation is satisfied. A reconciliation of the closing balance of deferred revenue related to all collaboration agreements for the years ended December 31, 2024 and 2023 is as follows (in thousands):

Revenue recognized that was included in the balance at the beginning of the period	$	(4,933)
Balance at December 31, 2022		6,175
Unearned revenue from cash received during the period		68,736
Revenue recognized that was included in the balance at the beginning of the period		(5,648)
Balance at December 31, 2023		69,263
Revenue recognized that was included in the balance at the beginning of the period		(10,315)
Balance at December 31, 2024	$	58,948

6. Composition of Certain Consolidated Financial Statement Items

Prepaid and other assets (in thousands)

	December 31,	
	2024	2023
Accounts receivable	$ —	$ 1,105
Prepaid assets	12,571	7,333
Interest receivable and other assets	28,222	7,518
Total prepaid and other assets	$ 40,793	$ 15,956

Property and equipment, net (in thousands)

	December 31,	
	2024	2023
Laboratory equipment	$ 14,180	$ 11,208
Computers and software	261	127
Office furniture and equipment	1,979	1,979
Leasehold improvements	288	288
Construction in process	3,959	—
Property and equipment, gross	20,667	13,602
Less accumulated depreciation and amortization	(7,997)	(5,221)
Total property and equipment, net	$ 12,670	$ 8,381

Depreciation and amortization expense related to property and equipment was $2.8 million, $2.1 million, and $1.4 million for the years ended December 31, 2024, 2023, and 2022, respectively.

Accounts payable and accrued liabilities (in thousands)

	December 31,	
	2024	2023
Accounts payable	$ 8,461	$ 8,809
Accrued non-clinical liabilities	17,226	4,054
Accrued manufacturing and technical development	35,680	15,481
Accrued clinical liabilities	8,157	5,997
Total accounts payable and accrued liabilities	$ 69,524	$ 34,341

7. Commitments and Contingencies

Lease Agreements

The Company determines if an arrangement is a finance lease, operating lease or short-term lease at inception. During the periods presented, the Company was party to various non-cancellable office and laboratory space operating leases and short-term leases. Short-term leases are not subject to recognition of a right-of-use (ROU) asset or liability or straight-line lease expense requirements.

As of December 31, 2024, the Company's ROU assets and liabilities related to the operating lease for the Company headquarters are as follows (in thousands):

ROU assets	$ 5,619
Lease liabilities, current portion	$ 3,844
Lease liabilities, net of current portion	2,957
Total lease liabilities	$ 6,801

As of December 31, 2024, maturities of the lease liabilities due under the operating lease are as follows (in thousands):

Year ending December 31,	
2025	$ 3,854
2026	3,639
Total lease payments	7,493
Less imputed interest	(692)
Total operating lease liabilities	6,801
Less lease liabilities, current portion	(3,844)
Lease liabilities, net of current portion	$ 2,957

Other information related to leases was as follows (in thousands):

	Year Ended December 31,		
	2024	2023	2022
Cash paid included in operating cash flows	$ 3,696	$ 3,328	$ 1,762
Weighted-average remaining lease term (in years)	1.9	2.9	3.9
Weighted-average discount rate	5.9 %	5.9 %	5.5 %

Lease cost was $3.3 million, $3.0 million and $2.7 million for the years ended December 31, 2024, 2023, and 2022, respectively. Short-term and variable lease costs were immaterial for all periods presented.

In April 2024, the Company entered into a sublease agreement with Turning Point Therapeutics, Inc. to rent 105,000 square feet for office and laboratory space for the Company's future corporate headquarters. The term of the sublease is approximately 9 years, 9 months with payments expected to begin in August 2025. Pursuant to the terms of the sublease agreement, the sublandlord will provide the Company with a tenant improvement allowance of up to $33.6 million. An additional tenant improvement allowance of up to $5.0 million is also available to be repaid in equal installments through monthly rent payments, subject to 8% interest per annum and annual increases of 3% per annum. The Company also has an option and a right of first refusal for an additional 80,000 square feet in an adjacent available building, which has not been exercised. Total aggregate future lease commitments under the sublease agreement are approximately $72.6 million, excluding the option and refusal for the adjacent available building, and inclusive of a 3% annual rent increases and various agreed upon rent abatement amounts. The sublease will be measured and recognized upon commencement of the sublease. As of December 31, 2024, the sublease had not commenced because construction of improvements to bring the facility to its intended use was not substantially complete.

In connection with the sublease agreement, the Company is required to maintain a letter of credit for the benefit of the sublandlord in the amount of $2.5 million, which was delivered in April 2024 and is included in restricted cash in the Company's consolidated balance sheets.

Litigation

Liabilities for loss contingencies arising from claims, assessments, litigation, fines, penalties and other sources are recorded when it is probable that a liability has been incurred and the amount can be reasonably estimated. There are no such matters currently outstanding for which any liabilities have been accrued.

Contractual Obligations

The Company enters into contracts in the normal course of business for contract research services, contract manufacturing services, professional services, and other services and products for operating purposes. These contracts may include certain provisions that could require payments for early termination. The amount of any such termination payments will vary depending on the timing of the termination and the specific terms of the contract. Further, the Company has entered into various contracts to acquire contractual rights to licensed technology, some of which may require the Company to make additional milestone payments upon initiation of a pivotal trial and U.S. Food and Drug Administration approval.

8. Stockholders' Equity

Amended and Restated Certificate of Incorporation

On June 16, 2020, the Company's certificate of incorporation was amended and restated to authorize 400,000,000 shares of common stock and 40,000,000 shares of undesignated preferred stock, each with a par value of $0.0001 per share. There was no preferred stock outstanding as of December 31, 2024, 2023, or 2022.

Common Stock

On November 8, 2022, we entered into a sales agreement (the 2022 Sales Agreement) with the Cowen and Company, LLC (the Sales Agent), under which we could, from time to time, sell shares of our common stock having an aggregate offering price of up to $200.0 million through the Sales Agent. Sales of the shares of common stock were made at prevailing market prices at the time of sale, or as otherwise agreed with the Sales Agent. During the years ended December 31, 2024 and 2023, we sold 418,408 and 4,107,810 shares of its common stock, respectively, pursuant to the Sales Agreement and received net proceeds of $5.6 million and $60.5 million, respectively, after deducting offering-related transaction costs and commissions of $0.1 million and $1.4 million, respectively.

On November 27, 2023, we sold 5,075,304 unregistered shares of our common stock to BMS in a private placement under the terms of the BMS Purchase Agreement. The approximate proceeds related to the sale were $40.0 million of which $31.2 million was recorded as common stock and additional paid in capital, net of issuance costs of $0.1 million, and $8.7 million was recorded as deferred revenue (Note 5).

On March 4, 2024, we sold 15,224,773 unregistered shares of our common stock and pre-funded warrants in lieu of common stock to purchase up to an aggregate of 9,030,851 shares of our common stock to investors in a private placement at an offering price of $16.50 per share and $16.499 per pre-funded warrant, which represents the offering price per share of common stock less an exercise price of $0.001 per share. We valued the common stock at the offering price, concluding that the offering price approximated fair value. The net proceeds from the private placement were $379.8 million after deducting placement fees and offering costs of $20.4 million. The resale of the shares, including the shares issuable upon exercise of the pre-funded warrants, were subsequently registered on a Registration Statement on Form S-3 filed with the SEC on April 2, 2024, which became automatically effective upon its filing.

The pre-funded warrants are a freestanding instrument that do not meet the definition of a liability pursuant to ASC 480 and do not meet the definition of a derivative pursuant to ASC 815. We valued the pre-funded warrants at the offering price, concluding that the offering price approximated fair value. The pre-funded warrants meet the equity classification criteria and were accounted for as a component of additional paid-in capital. The pre-funded warrants are immediately exercisable and do not expire.

One of the investors who participated in the private placement met the criteria of a related party as such investor was a principal owner of more than 10% of the voting interest in the Company (the Principal Owner). The Principal Owner purchased 2,121,213 shares of the Company's common stock for $35.0 million. The purchase of common stock under the private placement by the Principal Owner was carried out at arm's length as substantiated by the fact that the per share purchase price equaled the price paid by other participants. No amounts were due from the Principal Owner as of December 31, 2024.

On June 17, 2024, we completed a public offering of 12,132,500 shares of our common stock at a public offering price of $38.00 per share. Net proceeds from the offering were approximately $432.8 million, after deducting underwriting discounts and offering expenses of $28.3 million. The shares sold in the offering were registered pursuant to the Company's shelf registration statement on Form S-3, which became automatically effective upon its filing on May 9, 2024.

On August 9, 2024, we entered into a sales agreement (the 2024 Sales Agreement) with TD Securities (USA) LLC (the 2024 Sales Agent) which contained substantially similar terms as the 2022 Sales Agreement. The 2022 Sales Agreement was terminated upon effectiveness of the 2024 Sales Agreement. Under the 2024 Sales Agreement, we may, from time to time, sell shares of our common stock having an aggregate offering price of up to $400.0 million through the 2024 Sales Agent. Sales of the shares of common stock, if any, will be made at prevailing market prices at the time of sale, or as otherwise agreed with the 2024 Sales Agent. We are not obligated to sell, and the 2024 Sales Agent is not obligated to buy or sell, any shares of common stock under the 2024 Sales Agreement. As of December 31, 2024, we had sold no shares of our common stock under the 2024 Sales Agreement.

On August 16, 2024, we completed a public offering of 8,418,000 shares of our common stock at a public offering price of $41.00 per share. Net proceeds from the offering were approximately $323.7 million, after deducting underwriting discounts and offering expenses of $21.4 million. The shares sold in the offering were registered pursuant to the Company's shelf registration statement on Form S-3, which became automatically effective upon its filing on May 9, 2024.

Equity Incentive Plans

The Company's board of directors adopted, and the company's shareholders approved, the 2013 Equity Incentive Plan (the 2013 Plan) and the 2020 Incentive Award Plan (the 2020 Plan). Under the plans, the Company may grant stock options, restricted stock, dividend equivalents, restricted stock units, stock appreciation rights, and other stock or cash-based awards to individuals who are then employees, officers, non-employee directors or consultants of the Company. The Company ceased granting awards under the 2013 Plan in June 2020 upon adopting the 2020 Plan.

A total of 3,900,000 shares of common stock were initially reserved for issuance under the 2020 Plan. The number of shares of common stock available for issuance under the 2020 Plan will be increased annually on the first day of each fiscal year during the term of the 2020 Plan, beginning with the 2021 fiscal year, by an amount equal to the lesser of (a) 5% of the shares of common stock outstanding on the final day of the immediately preceding calendar year or (b) such smaller number of shares as determined by the Company's board of directors. At December 31, 2024, 1,591,462 shares were available for grant under the 2020 Plan, inclusive of 3,963,742 additional shares which were reserved for issuance during the year ended December 31, 2024.

In December 2022, the Company's board of directors adopted the 2022 Employment Inducement Incentive Award Plan, which it amended in June 2024 (the Inducement Plan). Under the Inducement Plan, the Company may grant non-qualified stock options, restricted stock, restricted stock units, stock appreciation rights, and other stock or cash-based awards to an employee in connection with his or her commencement of employment with the Company or an affiliate. A total of 4,500,000 shares of common stock were reserved for issuance under the Inducement Plan. At December 31, 2024, 697,350 shares were available for grant under the Inducement Plan, inclusive of 3,000,000 additional shares which were reserved for issuance during the year ended December 31, 2024.

Stock Options

Options granted from the 2013 Plan, 2020 Plan, and the Inducement Plan are exercisable at various dates and will expire no more than ten years from their date of grant. Options generally vest over a four-year period. Prior to the IPO, the exercise price of options was determined by the Company's board of directors. Following the IPO, the Company grants options with an exercise price equal to the fair market value of the Company's stock on the date of the option grant.

Stock option activity in 2024 for employee and non-employee awards and related information is as follows (in thousands, except per share and contractual term data):

	Number of Outstanding Options	Weighted-Average Exercise Price Per Share	Weighted-Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value
Balance at December 31, 2023	12,495	$ 14.91		
Granted	4,162	27.06		
Exercised	(3,498)	13.78		
Forfeited/expired	(524)	15.70		
Balance at December 31, 2024	12,635	$ 19.19	7.88	$ 149,957
Vested and expected to vest at December 31, 2024	12,635	$ 19.19	7.88	$ 149,957
Exercisable at December 31, 2024	5,772	$ 15.32	6.89	$ 79,900

The aggregate intrinsic values presented in the table above were calculated as the difference between the closing price of the Company's common stock at December 31, 2024 and the exercise price of stock options that had strike prices below the closing price.

The following summarizes additional information regarding stock options (in thousands, except per share data):

	Year Ended December 31,		
	2024	2023	2022
Cash received from options exercised	$ 48,207	$ 573	$ 470
Intrinsic value of options exercised	$ 83,422	$ 2,421	$ 6,724
Weighted-average grant date fair value per share	$ 19.26	$ 10.33	$ 11.11

The total intrinsic values of options exercised was calculated as the difference between the fair value of the Company's common stock at the time of the option exercise and the exercise price of that stock option.

Restricted Stock Units and Performance Stock Units

During the year ended December 31, 2024, under the 2020 Incentive Award Plan and the 2022 Employment Inducement Incentive Award Plan, the Company granted Restricted Stock Units (RSUs) and Performance Stock Units (PSUs) to employees of the Company. PSUs were granted to the Company's officers.

RSUs and PSUs are valued at the market price of a share of the Company's stock on the date of grant. RSUs vest ratably on an annual basis over a service period and are payable in shares of common stock on the vesting date. Compensation expense for RSUs is recognized on a straight-line basis over the service period. Compensation expense for PSUs is recognized on a straight-line basis over the requisite service periods when the achievement of the performance condition is determined to be probable, using management's best estimate. If a performance condition is not determined to be probable or is not met, no stock-based compensation

expense is recognized, and any previously recognized expense is reversed. Forfeitures are recorded in the period in which they occur.

The following table summarizes the RSU activity for the year ended December 31, 2024 (in thousands, except per share data):

	Number of Shares	Weighted-Average Grant Date Fair Value
Balance at December 31, 2023	758	$ 18.73
Granted	1,711	25.51
Vested	(184)	18.79
Forfeited	(174)	14.82
Balance at December 31, 2024	2,111	$ 24.54

During the years ended December 31, 2024 and 2023, stock-based compensation expense of $7.0 million and $0.9 million was recognized, respectively. There was no stock-based compensation expense recognized for the year ended December 31, 2022. During the year ended December 31, 2024, 184,293 RSUs vested with a total fair value of $3.5 million. During the years ended December 31, 2023 and 2022, no RSUs vested.

The following table summarizes the PSU activity for the year ended December 31, 2024 (in thousands, except per share data):

	Number of Shares	Weighted-Average Grant Date Fair Value
Balance at December 31, 2023	750	$ 6.57
Granted	738	43.22
Vested	(563)	6.57
Forfeited	—	—
Balance at December 31, 2024	925	$ 35.80

During the year ended December 31, 2024, the performance conditions related to 750,000 units of outstanding PSUs were met or deemed probable resulting in (1) the vesting of 562,500 shares, (2) the expected vesting of 187,500 shares in March 2025, and (3) the recognition of $4.8 million in stock-based compensation expense. No stock-based compensation expense has been recognized for the remaining 738,000 outstanding PSUs as the performance conditions were not deemed probable. The total fair value of PSU shares vested during the year ended December 31, 2024 was $22.1 million. During the years ended December 31, 2023 and 2022, no PSUs vested and no stock-based compensation expense was recognized.

Employee Stock Purchase Plan

In June 2020, the Company adopted the ESPP, which permits participants to contribute up to 15% of their eligible compensation during defined rolling six-month offering periods to purchase the Company's common stock. The purchase price of the shares will be 85% of the lower of the fair market value of the Company's common stock on the first day of trading of the offering period or on the applicable purchase date. The Company issued 179,150, 175,511, and 90,535 shares of common stock under the ESPP during the years ended December 31, 2024, 2023, and 2022, respectively. The Company had an outstanding liability of $0.3 million at December 31, 2024, which is included in accounts payable and accrued liabilities on the consolidated balance sheet, for employee contributions to the ESPP for shares pending issuance at the end of the current offering period. As of December 31, 2024, 193,367 shares of common stock were available for issuance under the ESPP.

Stock-Based Compensation Expense

The assumptions used in the Black-Scholes model to determine the fair value of stock option grants and shares purchasable under the ESPP were as follows:

	Options			ESPP		
	Year Ended December 31,			Year Ended December 31,		
	2024	2023	2022	2024	2023	2022
Risk-free interest rate	3.5% - 4.7%	3.5% - 4.9%	1.5% - 4.2%	4.3% - 5.4%	5.4%	2.2% - 4.7%
Expected volatility	79% - 82%	78% - 82%	85%	64% - 82%	68% - 76%	78% - 79%
Expected term (in years)	5.3 - 6.1	5.5 - 6.1	5.5 - 6.1	0.5	0.5	0.5
Expected dividend yield	—%	—%	—%	—%	—%	—%

Risk-Free Interest Rate. The Company bases the risk-free interest rate assumption for equity awards on the rates for U.S. Treasury zero-coupon bonds with maturities similar to those of the expected term of the award being valued.

Expected Volatility. The expected volatility of stock options is estimated based on the average historical volatilities of common stock of comparable publicly traded companies and the Company's own volatility. The comparable companies are chosen based on their size and stage in the life cycle. The Company will continue to apply this process until a sufficient amount of historical information regarding the volatility of its own stock price becomes available. Prior to 2023, the Company exclusively used peer group companies to determine expected volatility. The expected volatility for employee stock purchases under the ESPP is based on the Company's own historical volatility for the prior six months to conform with the six-month ESPP offering period.

Expected Term. The Company's limited option exercise history does not provide a reasonable basis for estimating expected term, therefore the Company has estimated the expected life of its stock options using the simplified method, whereby the expected life equals the average of the vesting term and the original contractual term of the option. The expected life assumption for employee stock purchases under the ESPP is six months to conform with the six-month ESPP offering period.

Expected Dividend Yield. The Company’s expected dividend yield assumption is zero as it has never paid dividends and has no present intention to do so in the future.

The allocation of stock-based compensation expense was as follows (in thousands):

	Year Ended December 31,		
	2024	2023	2022
Research and development expense	$ 26,120	$ 22,007	$ 15,222
General and administrative expense	25,243	16,215	11,917
Total stock-based compensation expense	$ 51,363	$ 38,222	$ 27,139

As of December 31, 2024, the unrecognized compensation cost related to outstanding time-based options and RSUs was $102.5 million and $45.2 million, respectively, which is expected to be recognized over a weighted-average period of 2.7 years and 3.2 years, respectively. Unrecognized compensation cost related to PSUs was $32.1 million as of December 31, 2024 for which $0.2 million is deemed probable and is expected to be recognized over a weighted-average period of 0.2 years. As of December 31, 2024, the unrecognized compensation cost related to stock purchase rights under the ESPP was $0.9 million, which is expected to be recognized over a weighted-average period of 0.5 years.

9. Income Taxes

The Company operated as a nontaxable partnership until its conversion on March 31, 2019. The Company had deferred tax assets in existence on March 31, 2019 when the Company became a taxable entity. Deferred tax assets were not recognized due to the uncertainty that such assets will be realized. The Company retained the valuation allowance on the deferred tax assets at December 31, 2019.

No provision for income taxes was recorded for the years ended December 31, 2024, 2023, and 2022.

A reconciliation of the federal statutory income tax rate and the Company's effective income tax rate is as follows (in thousands):

	Year Ended December 31,		
	2024	2023	2022
Income tax expense (benefit) at statutory rates	$ (67,683)	$ (44,566)	$ (36,539)
State income tax, net of federal benefit	(8,170)	(5,882)	(11,821)
Permanent items	66	51	1
Reserve for uncertain tax positions	10,572	5,993	2,583
Research and development tax credits	(42,279)	(24,054)	(9,983)
Valuation allowance	98,813	61,332	54,093
Stock-based compensation	(15,264)	3,331	492
Section 162(m) disallowance	20,604	291	1,077
Rate adjustment	2,766	2,526	(5)
Other	575	978	102
Income tax expense (benefit)	$ —	$ —	$ —

Significant components of the Company's deferred tax assets as of December 31, 2024, and 2023 are shown below (in thousands):

	December 31,	
	2024	2023
Deferred tax assets:		
Net operating loss carryforwards	$ 83,371	$ 72,658
Section 174 R&E capitalization	103,288	52,085
Research and development tax credits	62,793	31,053
Deferred revenue	12,529	125
Accrued expenses	287	2,809
Intangibles and fixed assets	698	1,265
Lease liabilities	1,446	2,342
Stock-based compensation	8,418	12,451
Total deferred tax assets	272,830	174,788
Less valuation allowance	(271,636)	(172,822)
Net deferred tax assets	1,194	1,966
Deferred tax liabilities:		
Right-of-use assets	(1,194)	(1,966)
Total deferred tax liabilities	(1,194)	(1,966)
Net deferred tax assets	$ —	$ —

The Company has established a valuation allowance against its net deferred tax assets due to the uncertainty that such assets will be realized. The Company periodically evaluates the recoverability of the deferred tax assets. At such time as it is determined that it is more likely than not that the deferred tax assets

will be realizable, the valuation allowance will be released. The change in the valuation allowance was an increase of $98.8 million and $61.3 million for the years ended December 31, 2024 and 2023, respectively.

At December 31, 2024, the Company had federal and state net operating loss (NOL) carryforwards of $249.4 million and $439.3 million, respectively. The federal NOL carryforwards will carryforward indefinitely and can offset 80% of future taxable income each year, and the state NOLs begin to expire in 2039 unless previously utilized.

At December 31, 2024, the Company had federal and state research and development tax credits of approximately $13.3 million and $15.8 million, respectively. The federal research and development tax credits begin to expire in 2039 unless previously utilized, and the California state credits carry forward indefinitely. At December 31, 2024, the Company had federal orphan drug tax credits of $58.0 million, which begin to expire in 2041.

Pursuant to Section 382 and Section 383 of the Internal Revenue Code of 1986, as amended (the "Code"), the Company's ability to use NOL and R&D tax credit carryforwards ("tax attribute carryforwards") to offset future taxable income may be limited if the Company experienced a cumulative change in ownership by certain stockholders or groups of stockholders of more than 50 percentage points within a three-year testing period. The Company determined there was one ownership change through December 31, 2023. Limitations as a result of these ownership changes did not impact the Company's deferred tax assets. Due to the existence of a valuation allowance, impacts to the Company's deferred tax assets would not impact the Company's effective tax rate.

The following table summarizes the activity related to the Company's gross unrecognized tax benefits for the years ended December 31, 2024, 2023 and 2022 (in thousands):

	Year Ended December 31,		
	2024	2023	2022
Gross unrecognized tax benefits at the beginning of the year	$ 11,049	$ 4,771	$ 1,996
Increases related to current year positions	11,110	6,156	2,614
Increases related to prior year positions	—	122	161
Gross unrecognized tax benefits at the end of the year	$ 22,159	$ 11,049	$ 4,771

The unrecognized tax benefit amounts are reflected in the determination of the Company's deferred tax assets. If recognized, none of these amounts would affect the Company's effective tax rate, since it would be offset by a corresponding adjustment to the deferred tax asset valuation allowance. The Company does not foresee material changes to its liability for uncertain tax benefits within the next twelve months.

The Company's policy is to recognize interest and/or penalties related to income tax matters in income tax expense. The Company had no accrual for interest or penalties as of December 31, 2024 or 2023.

As of December 31, 2024, the Company's tax years since conversion to a corporation in 2019 are subject to examination by U.S. federal and various state taxing authorities.

10. Segment Information

Our operations constitute a single operating and reportable segment. Factors considered in determining operating and reportable segments include the organization of our business, the nature of our technology and the information reviewed by our CODM. Operating segments are defined as components of an enterprise for which discrete financial information is available and is evaluated regularly by the CODM, in deciding how to allocate resources and assess performance. Our CODM is our Chief Executive Officer. Our revenues are derived from our research collaboration and license agreements, which are further described in "Note 5 – Collaboration, License and Research Agreements". The CODM utilizes consolidated net loss in assessing performance and allocating resources by comparing net loss against prior periods and the Company's forecast. The measure of segment assets is reported on the consolidated balance sheets as total consolidated assets.

The following table presents financial information, including significant segment expenses, which are regularly provided to the CODM and included within consolidated net loss (in thousands):

	Year Ended December 31,		
	2024	2023	2022
Collaboration revenue	$ 10,897	$ 9,560	$ 9,224
Operating expenses, excluding stock-based compensation and depreciation			
Research and development	(275,176)	(167,299)	(134,184)
General and administrative	(60,518)	(37,536)	(25,427)
Total operating expenses, excluding stock-based compensation and depreciation	(335,694)	(204,835)	(159,611)
Stock-based compensation	(51,363)	(38,222)	(27,139)
Depreciation	(2,776)	(2,101)	(1,387)
Total operating expenses	(389,833)	(245,158)	(188,137)
Other income	56,634	23,378	4,918
Net loss	$ (322,302)	$ (212,220)	$ (173,995)

The following table presents the measure of segment assets regularly provided to the CODM (in thousands):

	December 31,	
	2024	2023
Cash, cash equivalents and marketable securities	$ 1,501,497	$ 595,351

EXHIBIT INDEX

Exhibit Number	Exhibit Description	Incorporated by Reference			Field Herewith
		Form	Date	Number	
3.1	Amended and Restated Certificate of Incorporation.	8-K	6/16/2020	3.1	
3.2	Amended and Restated Bylaws.	8-K	12/13/2023	3.1	
4.1	Form of Common Stock Certificate.	S-1	5/22/2020	4.1	
4.2	Description of Registrant's Securities	10-K	3/15/2021	4.3	
4.3	Form of Pre-Funded Warrant	8-K	2/29/2024	4.1	
10.1#	Avidity Biosciences, Inc. 2013 Amended and Restated Equity Incentive Plan, including form of stock option grant notice and stock option agreement thereunder.	S-1	5/22/2020	10.1	
10.2#	Avidity Biosciences, Inc. 2020 Incentive Award Plan, including forms of grant notices and agreements thereunder.	10-K	2/28/2024	10.2	
10.3#	Avidity Biosciences, Inc. 2020 Employee Stock Purchase Plan.	S-1/A	6/8/2020	10.3	
10.4#	Amended and Restated Non-Employee Director Compensation Program.	10-Q	5/9/2024	10.1	
10.5#	Avidity Biosciences, Inc. 2022 Employment Inducement Incentive Award Plan, including form of stock option grant notice and stock option agreement and form of restricted stock unit grant notice and restricted stock unit agreement thereunder.	10-K	2/28/2023	10.5	
10.6#	Amendment to Avidity Biosciences, Inc. 2022 Employment Inducement Incentive Award Plan.	8-K	6/12/2024	10.1	
10.7#	Amended and Restated Employment Agreement, dated August 26, 2024, by and between the Registrant and Sarah Boyce.	10-Q	11/7/2024	10.2	
10.8#	Amended and Restated Employment Agreement, dated August 26, 2024, by and between the Registrant and Michael MacLean.	10-Q	11/7/2024	10.3	
10.9#	Amended and Restated Employment Agreement, dated August 26, 2024, by and between the Registrant and W. Michael Flanagan.	10-Q	11/7/2024	10.4	

10.10#	Amended and Restated Employment Agreement, dated August 26, 2024, by and between the Registrant and Teresa McCarthy.	10-Q	11/7/2024	10.5	
10.11#	Amended and Restated Employment Agreement, dated August 26, 2024, by and between the Registrant and John B. Moriarty, Jr.	10-Q	11/7/2024	10.6	
10.12#	Amended and Restated Employment Agreement, dated August 26, 2024, by and between the Registrant and Steven Hughes.				X
10.13#	Amended and Restated Employment Agreement, dated August 29, 2024, by and between the Registrant and Kathleen Gallagher.				X
10.14#	Amended and Restated Employment Agreement, dated August 26, 2024, by and between the Registrant and Eric Mosbrooker.				X
10.15#	Offer of Employment and Employment Agreement, dated December 12, 2024, by and between the Registrant. and Charles Calderaro III.				X
10.16#	Form of Indemnification Agreement for Directors and Officers.	S-1	5/22/2020	10.11	
10.17†	Research Collaboration and License Agreement, dated April 17, 2019, by and between Eli Lilly and Company and the Registrant.	S-1	5/22/2020	10.12	
10.18†	Research Collaboration and License Agreement, dated November 27, 2023, by and between Bristol-Myers Squibb Company and the Registrant.	10-K	2/28/2024	10.13	
10.19	Amended and Restated Lease Agreement, dated December 18, 2020, by and between ARE-SD Region No. 44, LLC and the Registrant.	10-K	3/15/2021	10.14	
10.20	Sublease Agreement, dated April 29, 2024, by and between Turning Point Therapeutics, Inc. and the Registrant.				X
10.21	Sales Agreement, dated August 9, 2024, by and between Avidity Biosciences, Inc. and TD Securities (USA) LLC	10-Q	8/9/2024	10.2	

19.1	Amended and Restated Insider Trading Compliance Policy and Procedures				X
21.1	Subsidiaries of the Registrant.	10-K	2/28/2024	21.1	
23.1	Consent of BDO USA, P.C., independent registered public accounting firm.				X
31.1	Certification of Chief Executive Officer of Avidity Biosciences, Inc., as required by Rule 13a-14(a) or Rule 15d-14(a) under the Securities Exchange Act of 1934, as amended.				X
31.2	Certification of Chief Financial Officer of Avidity Biosciences, Inc., as required by Rule 13a-14(a) or Rule 15d-14(a) under the Securities Exchange Act of 1934, as amended.				X
32.1*	Certification of Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				X
32.2*	Certification of Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				X
97.1	Avidity Biosciences, Inc. Policy for Recovery of Erroneously Awarded Compensation.	10-K	2/28/2024	97.1	
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 Document				X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document				X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document				X
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document				X
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document				X
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)				X

# Indicates management contract or compensatory plan.

† Pursuant to Item 601(b)(10) of Regulation S-K, certain confidential portions of this exhibit have been omitted by means of marking such portions with asterisks as the identified confidential portions (i) are not material and (ii) would be competitively harmful if publicly disclosed.

* These certifications are being furnished solely to accompany this annual report pursuant to 18 U.S.C. Section 1350, and are not being filed for purposes of Section 18 of the Securities Exchange Act of 1934 and are not to be incorporated by reference into any filing of the Registrant, whether made before or after the date hereof, regardless of any general incorporation language in such filing.

SIGNATURES

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

AVIDITY BIOSCIENCES, INC.

/s/ Sarah Boyce

Sarah Boyce

President and Chief Executive Officer

Date: February 27, 2025

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

Signature	Title	Date
/s/ Sarah Boyce **Sarah Boyce**	President, Chief Executive Officer and Director (Principal Executive Officer)	February 27, 2025
/s/ Michael F. MacLean **Michael F. MacLean**	Chief Financial Officer (Principal Financial and Accounting Officer)	February 27, 2025
/s/ Troy Wilson **Troy Wilson, Ph.D., J.D.**	Chair of the Board of Directors	February 27, 2025
/s/ Carsten Boess **Carsten Boess**	Director	February 27, 2025
/s/ Noreen Henig **Noreen Henig, M.D.**	Director	February 27, 2025
/s/ Edward Kaye **Edward Kaye, M.D.**	Director	February 27, 2025
/s/ Jean Kim **Jean Kim**	Director	February 27, 2025
/s/ Arthur A. Levin **Arthur A. Levin, Ph.D.**	Director	February 27, 2025
/s/ Simona Skerjanec **Simona Skerjanec**	Director	February 27, 2025
/s/ Tamar Thompson **Tamar Thompson**	Director	February 27, 2025