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

FORM 10-K

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the Fiscal Year Ended December 31, 2025

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 001-38114

AVENUE THERAPEUTICS, INC.
(Exact name of registrant as specified in its charter)

Delaware	**47-4113275**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

1111 Kane Concourse, Suite 301, Bay Harbor Islands, FL 33154
(Address of principal executive offices and zip code)

(781) 652-4500
(Registrant's telephone number, including area code)

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

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

Title of Class	**Trading Symbol(s)**
Common Stock	ATXI (OTC Markets Group, Inc.)

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

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

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

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

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

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

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

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

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

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

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

The aggregate market value of the voting stock held by non-affiliates of the registrant the last business day of the registrant's most recently completed second fiscal quarter: $ 571,897.

Indicate the number of shares outstanding of each of the registrant's classes of common stock, as of the latest practicable date.

Class of Common Stock	Outstanding Shares as of March 25, 2026
Common Stock, $0.0001 par value	3,294,635

AVENUE THERAPEUTICS, INC.
ANNUAL REPORT ON FORM 10-K
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CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

Certain matters discussed in this report may constitute forward-looking statements for purposes of the Securities Act of 1933, as amended (the "Securities Act"), and the Securities Exchange Act of 1934, as amended (the "Exchange Act"). All statements other than statements of current or historical fact contained in this report, including statements that express our intentions, plans, objectives, beliefs, expectations, strategies, predictions or any other statements relating to our future activities or other future events or conditions are forward-looking statements. The words "anticipate," "believe," "continue," "could," "estimate," "expect," "intend," "may," "plan," "predict," "should," "project," "will," "would," and similar expressions are generally intended to identify forward-looking statements. These statements are based on current expectations, estimates and projections made by management about our business, our industry and other conditions affecting our financial condition, results of operations or business prospects. These statements are not guarantees of future performance and involve risks, uncertainties and assumptions that are difficult to predict. Therefore, actual outcomes and results may differ materially from what is expressed or forecasted in, or implied by, the forward-looking statements due to numerous risks and uncertainties. Factors that could cause such outcomes and results to differ include, but are not limited to, risks and uncertainties arising from:

- the termination of our license agreement for AJ201 with AnnJi Pharmaceutical Co., Ltd. ("AnnJi"), and disposal of our equity interest in Baergic Bio, Inc. ("Baergic") and rights to BAER-101;
- the uncertainty related to the timing and amounts expected to be realized from future milestone and royalty payments, if at all;
- the fact that we currently have no drug products for sale and that our success is dependent on our current or future product candidates receiving regulatory approval and being successfully commercialized;
- the possibility that serious adverse or unacceptable side effects are identified during the development of our current or future product candidates, such that we would need to abandon or limit development of some of our product candidates;
- our ability to successfully develop, partner, or commercialize any of our current or future product candidates including IV tramadol and ATX-04;
- the substantial doubt raised about our ability to continue as a going concern, which may hinder our ability to obtain future financing;
- the significant losses we have incurred since inception and our expectation that we will continue to incur losses for the foreseeable future;
- our need for substantial additional funding, which may not be available to us on acceptable terms, or at all, which unavailability could force us to delay, reduce, or eliminate our product development programs or commercialization efforts;
- our reliance on third parties for several aspects of our operations;
- our reliance on clinical data and results obtained by third parties that could ultimately prove to be inaccurate, unreliable, or unacceptable to regulatory authorities;
- the possibility that we may not receive regulatory approval for any or all of our current or future product candidates, or that such approval may be significantly delayed due to scientific or regulatory reasons;
- the fact that even if one or more of our current or future product candidates receives regulatory approval, they will remain subject to substantial regulatory scrutiny;
- the effects of current and future laws and regulations relating to fraud and abuse, false claims, transparency, health information privacy and security, and other healthcare laws and regulations;
- the effects of competition for our current or future product candidates and the potential for new products to emerge that provide different or better therapeutic alternatives for our targeted indications;
- the possibility that the government or third-party payors fail to provide adequate coverage and payment rates for our current or future product candidates;
- our ability to establish sales and marketing capabilities or to enter into agreements with third parties to market and sell our current or future product candidates;
- our exposure to potential product liability claims;

- the protection of our intellectual property and our potential inability to maintain sufficient patent protection for our technology and products;
- our ability to maintain compliance with the obligations under our intellectual property licenses and funding arrangements with third parties, without which licenses and arrangements we could lose rights that are important to our business;
- the fact that Fortress Biotech, Inc. ("Fortress") controls a majority of the voting power of our outstanding capital stock and has rights to receive significant share grants annually;
- the delisting of our common stock from the Nasdaq Capital Market and the fact that the OTC Pink Open Market is a thinly traded market lacking in liquidity, and subject to volatility;
- our common stock may be considered a "penny stock" and, therefore, may be subject to certain rules that make it difficult for brokers, dealers, or investors to sell the shares; and
- the risks described under the section titled "Risk Factors" in this Annual Report and in other filings we make with the Securities and Exchange Commission.

The forward-looking statements contained in this report reflect our views and assumptions as of the effective date of this report. New risks and uncertainties arise from time to time, and it is impossible for us to predict these events or how they may affect us. Except as required by law, we assume no responsibility for updating any forward-looking statements to reflect events or circumstances that may arise after the date of this report, except as required by applicable law.

We qualify all of our forward-looking statements by these cautionary statements. In addition, with respect to all of our forward-looking statements, we claim the protection of the safe harbor for forward-looking statements contained in the Private Securities Litigation Reform Act of 1995.

SUMMARY RISK FACTORS

Our business is subject to risks of which you should be aware before making an investment decision. The risks described below are a summary of the principal risks associated with an investment in us and are not the only risks we face. You should carefully consider these risk factors, the risk factors described in Item 1A, and the other reports and documents that we have filed with the Securities and Exchange Commission ("SEC").

Risks Pertaining to Our Business and Influence

- We have terminated our license agreement for AJ201 with AnnJi and disposed of our equity interest in Baergic and rights to BAER-101, resulting in the loss of two of our primary product candidates.
- We currently have no drug products for sale, but we are developing the following drug product candidates: IV tramadol and ATX-04. We are dependent on the success of our product candidates and cannot guarantee that our product candidates will receive regulatory approval or be successfully commercialized.
- If serious adverse or unacceptable side effects are identified during the development of our current or future product candidates, we may need to abandon or limit the development of our product candidates.
- There is no assurance that we will be able to successfully develop IV tramadol or ATX-04.
- We are a "smaller reporting company," and the reduced disclosure requirements applicable to smaller reporting companies may make our common stock less attractive to investors.

Risks Pertaining to Our Finances

- There is substantial doubt about our ability to continue as a going concern, which may hinder our ability to obtain future financing.
- We have incurred significant losses since our inception. We expect to incur losses for the foreseeable future, and may never achieve or maintain profitability.
- We will require substantial additional funding, which may not be available to us on acceptable terms, or at all. If we fail to raise the necessary additional capital, we may have to delay, reduce or eliminate our product development programs or commercialization efforts.
- We do not have any products that are approved for commercial sale and therefore do not expect to generate any revenues from product sales in the foreseeable future, if ever.
- Raising additional capital may cause dilution to our existing stockholders, restrict our operations, or require us to relinquish proprietary rights.
- Risks related to our stock being traded on the OTC Pink Open Market, including that the OTC Pink Open Market is a thinly traded market lacking in liquidity and that our stock may be subject to price volatility.
- Our common stock may be considered a "penny stock" and, therefore, may be subject to certain rules that make it difficult for brokers, dealers, or investors to sell the shares.

Risks Pertaining to Reliance on Third Parties

- We rely, and expect to continue to rely, on third parties to conduct our preclinical studies and clinical trials, and those third parties may not perform satisfactorily, including failing to meet deadlines for the completion of such trials or complying with applicable regulatory requirements.

- We rely on third parties to manufacture our product candidates and will rely on third parties to manufacture any current or future products for which we receive regulatory approval and their failure to produce them in the volumes that we require on a timely basis, to produce our products according to the applicable quality standards and requirements, or to comply with stringent regulations applicable to pharmaceutical drug manufacturers, create delays in the commercialization of our product candidates, if approved, the loss of potential revenues or an inability to meet market demand.

- We rely on clinical data and results obtained by third parties that could ultimately prove to be inaccurate, unreliable, or unacceptable to regulatory authorities.

Risks Pertaining to Regulatory Approval Process

- We may not receive regulatory approval for our current or future product candidates, or our approval may be significantly delayed due to scientific or regulatory reasons.

- Even if one or more of our current or future product candidates receives regulatory approval, which may not occur, it will remain subject to substantial regulatory scrutiny.

- Our current and future relationships with customers and third-party payors in the United States and elsewhere may be subject, directly or indirectly, to applicable anti-kickback, fraud and abuse, false claims, transparency, health information privacy and security, and other healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, contractual damages, reputational harm, administrative burdens, and diminished profits and future earnings.

- Regulatory approval for any approved product is limited by the FDA to those specific indications and conditions for which clinical safety and efficacy have been demonstrated.

- If the Drug Enforcement Agency (“DEA”) decides to reschedule tramadol from a Schedule IV controlled substance to a more restrictive Schedule, our related clinical development and, if approved, regulatory approval could be delayed or prevented and, if approved, we could be subject to additional, more burdensome security requirements and quota system controls thereby losing IV tramadol's competitive advantage.

- Changes in U.S. government policy, regulation, enforcement priorities, and funding decisions could adversely affect our business, financial condition and results of operations.

Risks Pertaining to the Commercialization of Product Candidates

- We are subject to new legislation, regulatory proposals, and managed care initiatives, that may increase our costs of compliance and adversely affect our ability to market any products for which we receive regulatory approval, obtain collaborators, and raise capital.

- Public concern regarding the safety of opioid drug products such as IV tramadol could delay or limit our ability to obtain regulatory approval, result in the inclusion of serious risk information in our labeling, negatively impact market performance, or require us to undertake other activities that may entail additional costs.

- We expect intense competition for our product candidates, and new products may emerge that provide different or better therapeutic alternatives for our targeted indications.

- If the government or third-party payors fail to provide adequate coverage and payment rates for our product candidates, if approved, or any future products we may license or acquire in the future, if any, or if hospitals choose to use therapies that are less expensive, our potential revenue and prospects for profitability will be limited.

- If we are unable to establish sales and marketing capabilities or to enter into agreements with third parties to market and sell our product candidates, if approved, we may not be successful in commercializing our product candidates if and when they are approved.

- We face potential product liability exposure, and if successful claims are brought against us, we may incur substantial liability for our product candidates, or other product candidates we may license or acquire, and may have to limit their commercialization, if approved.

Risks Pertaining to Intellectual Property and Potential Disputes Thereof

- If we are unable to obtain and maintain patent protection for our technology and products, or if the scope of the patent protection obtained is not sufficiently broad, our competitors could develop and commercialize technology and products similar or identical to ours, and our ability to successfully commercialize our technology and products may be impaired.
- If we are sued for infringing intellectual property rights of third parties, it will be costly and time consuming, and an unfavorable outcome in any litigation would harm our business.
- If we are unable to protect the confidentiality of our trade secrets, our business and competitive position would be harmed.
- If we fail to comply with our obligations in our intellectual property licenses and funding arrangements with third parties, we could lose rights that are important to our business.

Risks Pertaining to the Influence of Fortress Biotech, Inc. ('Fortress")

- Fortress controls a majority of the voting power of our outstanding capital stock and has the rights to receive significant share grants annually, which will result in dilution of our other stockholders and could reduce the value of our common stock.
- We have entered into certain agreements with Fortress and may have received better terms from unaffiliated third parties.

PART I

Item 1. Business

Overview

Avenue Therapeutics, Inc. (“Avenue” or the “Company”) is a specialty pharmaceutical company focused on the development and commercialization of therapies for the treatment of neurologic diseases. Our current product candidates are ATX-04, a selective β2-adrenergic agonist for Pompe disease, intravenous tramadol (“IV tramadol”), a schedule IV opioid for the treatment of post-operative acute pain and previously, through November 5, 2025, BAER-101 for the treatment of epilepsy and panic disorders.

In February 2026, we announced the entry into an exclusive license agreement with Duke University for patents and know-how relating to clenbuterol (referred to as ATX-04), a selective β2-adrenergic agonist, for the treatment of lysosomal storage diseases with a focus on Pompe disease.

In November 2022, we completed a Stock Contribution Agreement, dated May 11, 2022 (the “Contribution Agreement”) with Fortress Biotech, Inc (“Fortress”) to acquire the shares in Baergic Bio, Inc. (“Baergic”), which was developing BAER-101, a novel α2/3–subtype-selective gamma-aminobutyric acid ("GABA") A positive allosteric modulator (“PAM”). As a result, Baergic was a majority-controlled and owned subsidiary company of Avenue. On November 5, 2025, we announced we had entered into an agreement for Baergic to be acquired by Axsome Therapeutics, Inc. (“Axsome”) including the global rights to BAER-101 (also known as AZD7325), a novel oral GABAA α2,3 subtype-selective receptor positive allosteric modulator (PAM). BAER-101 was originally licensed by Baergic from AstraZeneca AB and will be referred to as AXS-17 by Axsome going forward. As described in further detail below, we and the other former stockholders of Baergic will be eligible to receive from Axsome certain additional payments and royalties based on development, regulatory, and commercial milestones and net sales. Axsome intends to evaluate AXS-17 as a potential treatment for epilepsy.

We have been developing IV tramadol since inception of the Company and prior to our initial public offering in 2017.

As used throughout this filing, the words “we”, “us” and “our” may refer to Avenue individually or, until November 5, 2025, together with our former subsidiary, Baergic, each as dictated by context.

We are a majority-controlled subsidiary of Fortress.

Recent Developments

ATX-04 License

On February 18, 2026, Avenue entered into a license agreement with Duke University (“Duke”), pursuant to which Avenue obtained an exclusive worldwide license (the "ATX-04 License") from Duke to certain patents and know-how pertaining to clenbuterol for the treatment of lysosomal storage diseases. Under the ATX-04 License, Avenue made an upfront payment and reimbursed certain patent expenses to Duke and has an obligation to make development, regulatory, and commercial milestone payments upon the achievement of certain milestones. In addition, Avenue is obligated to pay a tiered low single-digit royalty on future net sales of ATX-04. Avenue intends to advance ATX-04 through a late-stage clinical development program leveraging existing human safety and efficacy data, with an initial focus on treating Pompe disease as an adjunct to enzyme replacement therapy (“ERT”).

AJ201 Termination

On February 28, 2023, Avenue entered into a license agreement with AnnJi Pharmaceutical Co. Ltd. ("AnnJi"), pursuant to which Avenue obtained an exclusive license (the "AnnJi License Agreement") from AnnJi to the intellectual property rights pertaining to the molecule known as JM17, which activates Nrf1 and Nrf2, enhances androgen receptor degradation and underlies AJ201, a clinical product candidate currently in a Phase 1b/2a clinical trial in the U.S. for the treatment of spinal and bulbar muscular atrophy (“SBMA”, also known as Kennedy's Disease). Under the AnnJi License Agreement, in exchange for exclusive rights to the intellectual property underlying the AJ201 product candidates, Avenue paid $3.0 million, issued shares of Avenue stock in two tranches, and agreed to make additional payments including: reimbursement of payments up to $10.8 million in connection with the product’s Phase 1b/2a clinical trial, up to $14.5 million in connection with certain development milestones pertaining to the first indication in the U.S., up to $27.5 million in connection with certain drug development milestones pertaining to additional indications and development outside the U.S., up to $165 million upon the achievement of certain net sales milestones ranging from $75 million to $750 million in annual net sales, and royalty payments based on a percentage of net sales ranging from mid-single digits to the low-double digits, which were subject to potential diminution in certain circumstances. On March 3, 2025, Avenue received notice of AnnJi’s intent to terminate the AnnJi License Agreement, in which AnnJi asserted several bases for its right to terminate the AnnJi License Agreement.

On April 24, 2025 (the “Termination Effective Date”), Avenue and AnnJi entered into a License Termination and Program Transfer Agreement (the “Termination and Transfer Agreement”), pursuant to which: (i) the AnnJi License Agreement and related agreements were terminated with immediate effect; (ii) the parties dismissed all pending dispute resolution proceedings and provided mutual releases of claims; (iii) Avenue transferred to AnnJi all of its rights, title and interest to and under the assets arising under the AnnJi License Agreement and otherwise related to AJ201 and (iv) Avenue agreed not to, for 48 months following the date of the Termination and Transfer Agreement, develop, commercialize, manufacture or sell any product competing with AJ201 in the US, Canada, the European Union, Great Britain or Israel. Under the Termination and Transfer Agreement, Avenue repurchased all shares of common stock held by AnnJi for an aggregate payment of $1.00, and Avenue also made a payment of $0.2 million to AnnJi as consideration for legal expenses.

Also, under the Termination and Transfer Agreement, AnnJi paid $1.6 million net of withholding to Avenue, and will further be eligible to receive from AnnJi:

- payments totaling up to $5 million in the aggregate upon the occurrence of certain development and regulatory milestone events pertaining to AJ201;
- payments totaling up to $17 million in the aggregate upon AJ201 achieving certain commercial sales milestone events;
- a 1.75% royalty on net sales of AJ201, which royalty percentage is subject to potential diminution in certain circumstances; and
- in the event that AnnJi enters into one or more subsequent licenses of rights to AJ201 with third party licensee(s), 15% of payments received by AnnJi from such licensee(s), up to a cap of $7.5 million, and with a minimum of $4 million owing under certain mechanisms in the event of an approval of a New Drug Application in the U.S. with respect to AJ201.

Product Candidates Under Development

ATX-04 (selective β2-adrenergic agonist)

As described above, Avenue entered into the ATX-04 License for patents and know-how related to a selective β2-adrenergic agonist (clenbuterol). The initial focus will be on utilizing ATX-04 for the treatment of Pompe disease as an adjunct to ERT with the potential to expand into other related indications.

ATX-04 was studied in a 52-week Phase I/II clinical study conducted at Duke University in patients with Pompe disease on baseline ERT and demonstrated that ATX-04 treatment was associated with meaningful improvements across multiple clinically and biologically relevant domains. Treatment with ATX-04 resulted in improvements in six-minute walk distance, reflecting enhanced functional capacity, as well as increased respiratory muscle strength, including maximal inspiratory pressure. ATX-04 was also associated with reductions in muscle glycogen burden assessed by biopsy, increased GAA activity with improved intracellular trafficking, and broad normalization of disease-relevant gene expression. The therapy was generally well tolerated with chronic, titrated dosing.

Based on this data, Avenue is currently preparing a pre-IND meeting to align with the FDA regarding a pivotal study design for Pompe disease and, subsequent to that meeting, will seek to raise the necessary capital to fund the pivotal study and initiate the trial.

IV Tramadol

Under the terms of certain agreements described herein, we have an exclusive license with Revogenex to develop and commercialize IV tramadol in the United States. In 2016, we completed a pharmacokinetic study for IV Tramadol in healthy volunteers as well as an end of phase 2 meeting with the U.S. Food and Drug Administration ("FDA"). In the third quarter of 2017, we initiated a Phase 3 development program of IV Tramadol for the management of post-operative pain. In December 2019, we submitted a New Drug Application ("NDA") under the 505(b)(2) regulatory pathway for IV tramadol and received a Complete Response Letter (the "First CRL") from the FDA in October 2020. In February 2021, we resubmitted the NDA for IV Tramadol. The FDA assigned a Prescription Drug User Fee Act ("PDUFA") goal date of April 12, 2021 for the resubmitted NDA for IV Tramadol. On June 14, 2021, we announced that we had received a second Complete Response Letter (the "Second CRL") from the FDA regarding our NDA for IV tramadol. We submitted a formal dispute resolution request ("FDRR") with the Office of Neuroscience of the FDA on July 27, 2021. On August 26, 2021, we received an Appeal Denied Letter from the Office of Neuroscience of the FDA in response to the FDRR submitted on July 27, 2021. On August 31, 2021, we submitted a FDRR with the Office of New Drugs ("OND") of the FDA. On October 21, 2021, we received a written response from the OND of the FDA stating that the OND needed additional input from an Advisory Committee in order to reach a decision on the FDRR. On February 15, 2022, a Joint Meeting of the Anesthetic and Analgesic Drug Products Advisory Committee and the Drug Safety and Risk Management Advisory Committee was held. In the final part of the public meeting, the Advisory Committee voted yes or no on the following question: "Has the Applicant submitted adequate information to support the position that the benefits of their product outweigh the risks for the management of acute pain severe enough to require an opioid analgesic in an inpatient setting?" The results were 8 yes votes and 14 no votes. On March 18, 2022, we received an Appeal Denied Letter from the OND in response to the FDRR. On August 31, 2022, the Company disclosed that, on June 17, 2022, following the receipt of the Appeal Denial Letter, the Company submitted a Type A Meeting Request and related briefing documents to the FDA. The meeting was granted by the Division of Anesthesia, Analgesia, and Addiction Products ("DAAAP") on June 27, 2022, and scheduled for August 9, 2022. The Company submitted a briefing document presenting a study design that the Company believed has the potential to address the comments and deficiencies noted in the Letter and sought the DAAAP's guidance to refine the study design that would support a resubmission of a New Drug Application for the Company's current lead product candidate, IV tramadol. The meeting on August 9, 2022 was a collaborative discussion on the study design and following the meeting, we incorporated the FDA's suggestions from the meeting minutes and submitted a detailed study protocol that could form the basis for the submission of a complete response to the Second CRL.

The Company participated in a Type C meeting with the FDA in March 2023 to discuss a proposed study protocol to assess the risk of respiratory depression related to opioid stacking on IV tramadol relative to an approved opioid analgesic. We announced in April 2023 that the Company received official meeting minutes from the Type C meeting with the FDA. The Type C meeting minutes indicate that the FDA and the Company are in agreement with a majority of the proposed protocol items and are in active discussion about remaining open items. The minutes also indicated that the FDA agreed that a successful study would support the submission of a complete response to the second Complete Response Letter for IV tramadol pending final agreement on a statistical analysis plan and a full review of the submitted data in the complete response as well as concurrence from the DAAAP.

In January 2024, we announced that we reached final agreement with the FDA on the Phase 3 safety study protocol and statistical analysis approach, including the primary endpoint. The final non-inferiority study is designed to assess the risk of opioid-induced respiratory depression related to opioid stacking on IV tramadol compared to IV morphine. The study would randomize approximately 300 post-bunionectomy patients to IV tramadol or IV morphine for pain relief administered during a 48-hour post-operative period. This study design was used in the first of two Phase 3 trials. In a Phase 3 safety study, patients would have access to IV hydromorphone, a Schedule II opioid, for rescue of breakthrough pain. The primary endpoint would be a composite of elements indicative of respiratory depression.

We are currently evaluating the feasibility of the safety study. The initiation of the study is subject to the Company obtaining the necessary financing or partnership.

BAER-101 (novel α2/3–subtype-selective GABA A PAM)

The descriptions below are with respect to our former product candidate BAER-101, which we sold on November 5, 2025. Baergic was a clinical-stage pharmaceutical company founded in December 2019 that focused on the development of pharmaceutical products for the treatment of neurologic disorders. Baergic's pipeline consisted of a single compound, BAER-101, a novel α2/3–subtype-selective GABA A positive allosteric modulator.

In November 2025, we sold Baergic to Axsome pursuant to a stock purchase agreement (the "Baergic Agreement"), pursuant to which Axsome: (i) purchased 100% of the equity interests in Baergic from Avenue and the other stockholders of Baergic for an upfront payment of $0.3 million (less transaction fees) and additional contingent consideration and (ii) received worldwide commercial, development, and manufacturing rights to BAER-101 (now referred to as AXS-17), including all available nonclinical and clinical data.

Avenue and the other former stockholders of Baergic will be eligible to receive from Axsome:

- payments totaling up to $2.5 million in the aggregate upon the occurrence of certain development and regulatory milestone events for the first indication pertaining to AXS-17 and $1.5 million for each indication thereafter;
- payments totaling up to $79 million in aggregate upon AXS-17 achieving certain commercial sales milestone events; and
- a tiered mid-to-high single digit royalty on potential global net sales of AXS-17.

Avenue is eligible to receive approximately 74% of all future payments and royalties payable under the Baergic Agreement.

Our Strategy

Our primary objective is to establish our product candidates as an invaluable part of a treating physician's repertoire of available pharmaceutical options for the treatment of patients with neurologic diseases. Key elements of our strategy include:

- *Obtain FDA approval of IV tramadol for the management of postoperative acute pain.* In January 2024, we announced that we reached final agreement with the FDA on a Phase 3 safety study protocol and statistical analysis approach. The study would assess the theoretical risk of opioid-induced respiratory depression related to opioid stacking on IV tramadol compared to IV morphine with IV hydromorphone for rescue of breakthrough pain in approximately 300 post-bunionectomy patients. IV tramadol previously demonstrated safety and efficacy in the bunionectomy model in a Phase 3 efficacy trial. We are currently evaluating the feasibility of the safety study. The initiation of the study is subject to the Company obtaining the necessary financing or partnership.

- *Advance the clinical development of ATX-04 for Pompe disease as an adjunct therapy to ERT.* In February 2026, we entered into a license agreement to certain patents and know-how pertaining to ATX-04 for the treatment of lysosomal storage disease. We intend to meet with the FDA in the near future to discuss and align on a potential single pivotal trial that could ultimately lead to the approval of ATX-04.

- *Maintain, expand, protect and/or monetize our intellectual property portfolio.* We intend to expand and protect our intellectual property in product candidates designed to treat neurologic diseases and also continue to evaluate potential product candidates for license or other acquisition. In addition, we continue to evaluate potential opportunities for our product candidates.

ATX-04 for the Treatment of Pompe disease

Summary

ATX-04 is an investigational, orally administered, small molecule therapy that we are developing for the treatment of Pompe disease, as an adjunct therapy to ERT. ATX-04 is a β2-adrenergic agonist (clenbuterol) that is approved for use in certain countries outside of the U.S., including in Europe and Japan, for the treatment of respiratory and urological diseases.

A 52 week Phase I/II clinical study was conducted at Duke University in patients with Pompe disease on baseline ERT, led by Principal Investigator Dwight D. Koeberl, M.D., Ph.D., and demonstrated that ATX-04 was associated with meaningful improvements across multiple clinically and biologically relevant domains. Treatment with ATX-04 resulted in improvements in six-minute walk distance, reflecting enhanced functional capacity, as well as increased respiratory muscle strength, including maximal inspiratory pressure. ATX-04 was also associated with reductions in muscle glycogen burden assessed by biopsy, increased GAA activity with improved intracellular trafficking, and broad normalization of disease-relevant gene expression. The therapy was generally well tolerated with chronic, titrated dosing. Collectively, these findings support ATX-04's possible use as a mechanistic potentiator of ERT.

Market Opportunity

Pompe disease is a rare, inherited lysosomal storage disorder caused by deficiency of the enzyme acid α-glucosidase ("GAA"), resulting in glycogen accumulation in muscle tissue and progressive skeletal and respiratory muscle weakness. The disease presents across a wide clinical spectrum, from severe infantile-onset to a late onset form marked by progressive muscle weakness and respiratory failure, and remains associated with significant morbidity despite available enzyme replacement therapies (ERT).

Pompe disease has an estimated prevalence of approximately 1 in 20,000 to 1 in 30,000 individuals and we estimate that there are approximately 25,000 to 35,000 patients across the United States and Europe. Pompe disease is believed to be underdiagnosed, particularly in its late-onset form.

Clinical Development Strategy

We plan to advance ATX-04 through a late-stage clinical development program leveraging existing human safety and efficacy data from other jurisdictions, with an initial focus on treating Pompe disease as an adjunct to ERT with the potential to expand into other related indications. We are currently preparing a pre-IND meeting with the FDA regarding a pivotal study design for Pompe disease and would seek to raise the necessary capital and initiate the trial after aligning with the FDA on the study design.

Tramadol and The U.S. Postoperative Pain Market

Postoperative Pain Market

We are currently focused on developing IV tramadol for the management of postoperative acute pain. Even though the postoperative pain market is entrenched with low cost, generic pain relievers, we believe that there remains a significant unmet medical need for safer and better-tolerated analgesics.

The major goal in the management of postoperative pain is minimizing the dose of medications to lessen side effects while still providing adequate pain relief. Understanding the range of available interventions and considering the type of surgery is essential in order to provide safe and effective pain management. The general consensus among pain management practitioners is that use of more than one modality (i.e., molecules with different mechanisms or with different routes of administration) is optimal for successful postoperative pain management. The most commonly prescribed agents in the immediate postoperative pain market are typically acetaminophen, nonsteroidal anti-inflammatory drugs ("NSAID"), and opioid analgesics. Acetaminophen and NSAIDs are not sufficiently effective as the sole agent for pain management after major surgery in most patients. However, when used in conjunction with opioids, acetaminophen and NSAIDs offer substantial benefits as the quality of analgesia is often improved or enhanced due to their differentiated mechanism of action.

Traditional opioids offer safe and effective postoperative pain control and can be used in combination with other pain management agents and techniques. However, the side effects of opioids, such as morphine, include sedation, dizziness, nausea, vomiting, constipation, physical dependence, tolerance, and respiratory depression. Physical dependence and addiction are clinical concerns that may prevent proper prescribing and, in turn, lead to inadequate pain management. Less common side effects include delayed gastric emptying, hyperalgesia, immunologic and hormonal dysfunction, muscle rigidity, and myoclonus.

Tramadol

Tramadol, a synthetic dual-acting opioid, is a centrally acting analgesic with weak opioid agonist properties. It also works via the inhibition of serotonin and noradrenaline re-uptake and blocking nociceptive impulses at the spinal level. These opioid and non-opioid modes of action are synergistic, essentially providing "multimodal therapy" with the use of a single drug. Tramadol is also commonly combined with acetaminophen or NSAIDS in clinical practice. Tramadol has a well-established efficacy and safety profile and has been used throughout the world for more than 30 years. In the United States, tramadol is approved and marketed as an oral agent indicated in adults for the management of pain severe enough to require an opioid analgesic and for which alternative treatments are inadequate. Tramadol was first approved in the United States in 1995, under the trade name Ultram® immediate release tablet (Ortho-McNeil-Janssen). Ultracet®, a combination oral product containing tramadol and acetaminophen, is also marketed in the United States (Ortho-McNeil-Janssen).

Tramadol is a Schedule IV controlled substance, which are defined by the DEA as drugs with a low potential for abuse and low risk of dependence. For comparison, many, but not all, other opioids are scheduled by the DEA as Schedule II which are defined by the DEA as drugs with a high potential for abuse.

The clinical trials from our development program are summarized below:

- Lu, L., et al. Comparing the Pharmacokinetics of 2 Novel Intravenous Tramadol Dosing Regimens to Oral Tramadol: A Randomized 3-Arm Crossover Study. *Clinical Pharmacology in Drug Development*. October 2019.

- Minkowitz, H., et al. Intravenous Tramadol is Effective in the Management of Postoperative Pain Following Abdominoplasty: A Three-Arm Randomized Placebo- and Active-Controlled Trial. *Drugs in R&D.* May 2020.

- Minkowitz, H., et al. IV Tramadol – A New Treatment Option for Management of Post-Operative Pain in the U.S.: An Open-Label, Single-Arm, Safety Trial Including Various Types of Surgery. *Journal of Pain Research.* May 2020.

- Singla, N., et al. Efficacy and Safety of Intravenously Administered Tramadol in Patients with Moderate to Severe Pain Following Bunionectomy: A Randomized, Double-Blind, Placebo-Controlled, Dose-Finding Study. *Pain and Therapy.* July 2020.

Below is a summary of the available intravenous analgesic options in postoperative pain management currently available in the United States:

- IV narcotics – typically used for moderate to severe pain – with common limitations and contraindications including strong sedation, respiratory depression, constipation, and risk of dependence.
- IV NSAIDs – typically used for mild to severe pain – with common limitations and contraindications including post-operative bleeding risk, gastrointestinal side effects and renal impairment.
- IV acetaminophen – typically used for mild to moderate pain – with common limitations and contraindications including hepatic impairment.

Advantages of IV Tramadol

Parenteral tramadol is approved and used for the management of postoperative acute pain throughout much of the world. Parenteral formulations include IV, intramuscular, or IM, and subcutaneous, or SC, formulations. There is no parenteral formulation currently approved in the United States.

We believe that IV tramadol, if approved, can fill the unmet need in the post-surgical setting and could be an effective alternative to traditional opioids. We believe that the introduction of an IV formulation of tramadol in the United States will address many of the shortcomings of other opioid agonists, and acetaminophen, and NSAIDs, all of which are currently used in the postoperative setting. We believe IV tramadol's potential advantages compared to current standard-of-care agents, along with the known efficacy, safety and tolerability profile for oral tramadol support the use of an IV formulation in the post-operative setting. We believe that the risks associated with the use of IV tramadol will be benign compared to other opioids, and consistent with that of the currently marketed oral tramadol products. Consequently, IV tramadol's unique profile could position it to become an invaluable part of a treating physician's repertoire of available pharmaceutical options in the management of postoperative pain.

We administered IV tramadol over approximately 15 minutes in our Phase 3 efficacy trials. We believe that our method of administration of IV tramadol may provide significant benefits such as a potentially more favorable tolerability profile, compared to previously approved methods of administration of IV tramadol in Europe, which is typically accomplished via a slow push over 2 to 3 minutes. In addition, our IV tramadol dosing regimen produces a similar Cmax (maximal blood level) and AUC (overall systemic exposure) to those of oral tramadol at steady state, which we believe helps with the transition from IV to oral therapy in the post-surgical setting.

Based on the trials performed in Europe and the data generated with oral tramadol, we believe that IV tramadol, if approved, will be an attractive option for physicians who treat postoperative pain in the U.S., due to the following attributes:

- As an established analgesic, oral tramadol has an established efficacy and safety profile and physicians are already familiar with the drug.

- As a Schedule IV controlled substance, IV tramadol would not be subject to the additional, more burdensome security requirements and quota system controls to which Schedule II opioids are subject, potentially making tramadol a more attractive option.

- Importantly, there is a step-down therapy available for IV tramadol. Patients are transitioned to oral therapy when they are discharged from the hospital or when they can tolerate oral medicine. Our IV tramadol dosing regimen provides a similar PK profile to that of oral tramadol at steady state.

Clinical Development History

Revogenex, our Licensor, completed multiple nonclinical PK and toxicology studies in dogs, a Phase 1 dose proportionality study and a thorough QT/QTc ("TQT") study of IV tramadol in healthy volunteers, or the TQT Study. The dose proportionality study was designed to compare maximum exposure and cumulative exposures of IV tramadol to that of oral tramadol, and to assess the dose proportionality of IV tramadol in healthy adult volunteers. The TQT Study was done to evaluate whether IV tramadol has the potential to affect the "corrected QT interval", or QTc, in healthy volunteers. The QTc represents electrical depolarization and repolarization of the heart ventricles. A lengthened QTc is a marker for the potential of ventricular arrhythmias. The results of these studies are consistent with oral tramadol's known toxicology profile, pharmacokinetics and pharmacology.

PK Study for IV Tramadol

In general, Phase 2 clinical trials include initial proof-of-concept efficacy studies, dose-finding studies, and initial safety assessments in the target (i.e., to-be-treated) population. We did not conduct Phase 2 clinical trials for IV tramadol because tramadol is a known analgesic, and oral tramadol is labeled "for the management of pain severe enough to require an opioid analgesic and for which alternative treatments are inadequate" in the United States. Instead, we completed pharmacokinetic ("PK") simulations and conducted a pharmacokinetic and safety study in healthy volunteers, in order to select a Phase 3 dose and dosing regimen designed to achieve exposure to tramadol similar to that provided by oral tramadol. In 2016, we completed a Phase 1 PK study for IV tramadol in healthy volunteers. A PK study generally involves dosing an experimental medicine in healthy volunteers and taking a series of blood measurements from the study participants to understand how the body handles the drug. A PK study provides information on important parameters such as systemic exposure, maximal and minimal levels of drug concentration in the blood and their time courses. The PK study we conducted was used to select a dose and dosing regimen of IV tramadol that achieves similar exposure to that provided by oral tramadol at steady state.

The PK study was designed as a three-way cross over study in 18 healthy volunteers. Each subject in the study served as his/her own control and received oral tramadol as well as two different doses of IV tramadol. Based on the results of the PK study, we decided to use a 50 mg dose in our Phase 3 program.

Our Clinical Development Strategy for IV Tramadol

At our EOP2 meeting with FDA in 2016, we discussed Phase 3 program requirements for IV tramadol and confirmed the key elements of the Phase 3 program design. We conducted two Phase 3 trials to evaluate the safety and efficacy of IV tramadol, and one additional safety study. All three trials enrolled patients who required IV analgesia following surgery. Over 1,000 patients were enrolled in the Phase 3 program. We believe that the design of our Phase 3 program is consistent with the design of Phase 3 programs for other analgesics being developed.

Postoperative pain following bunionectomy (orthopedic surgery model). The first Phase 3 trial was conducted in patients undergoing bunionectomy surgery, which is considered an orthopedic surgical model. 409 patients were randomized and treated in a 1:1:1 ratio to one of two doses of IV tramadol, or placebo, for 48 hours. The primary efficacy endpoint was Sum of Pain Intensity Difference over 48 hours (SPID 48), which is a measure of the overall effectiveness of the drug in reducing pain intensity during the 48-hour period. This trial commenced in the third quarter of 2017. In May 2018, we announced the trial met its primary endpoint and all key secondary endpoints.

Postoperative pain following abdominoplasty (soft tissue model). The second Phase 3 safety and efficacy trial was conducted in patients undergoing abdominoplasty surgery, which is considered a soft-tissue surgical model. 370 patients were randomized and treated in a 3:3:2 ratio to IV tramadol, placebo or a standard-of-care comparator arm. The primary efficacy endpoint was Sum of Pain Intensity Difference over 24 hours (SPID 24). The trial commenced in December 2018. In June 2019, we announced the trial met its primary endpoint and all key secondary endpoints.

Open-label safety study. We initiated the safety study in December 2017 and ran this study concurrently with the two Phase 3 trials. 251 patients were enrolled in the safety study, which had an open label, single arm design. We completed this study in May 2019 and the results showed that IV tramadol was well-tolerated in multiple surgical models with an adverse event profile consistent with known pharmacology.

In subsequent discussions with the FDA following our Complete Response Letters, we reached final agreement with the FDA in January 2024 on a final Phase 3 non-inferiority safety study designed to assess the theoretical risk of opioid-induced respiratory depression related to opioid stacking on IV tramadol compared to IV morphine. The study will randomize approximately 300 post-bunionectomy patients to IV tramadol or IV morphine for pain relief administered during a 48-hour post-operative period. Of note, IV tramadol demonstrated safety and efficacy in this same surgical model in two Phase 3 efficacy trials. Patients will have access to IV hydromorphone, a Schedule II opioid, for rescue of breakthrough pain. The primary endpoint is a composite of elements indicative of opioid induced respiratory depression. We are currently evaluating the feasibility of the safety study. The initiation of the study is subject to the Company obtaining the necessary financing or partnership.

License Agreement with Revogenex Ireland Ltd.

Effective as of February 17, 2015, Fortress obtained a worldwide (with the exception of Canada, Central America and South America with respect to 50 mg and 100 mg IV tramadol HCl injections) exclusive license to make, market and sell IV tramadol pursuant to an agreement with Revogenex, a privately held company in Dublin, Ireland, (the "Tramadol License Agreement"). Under the terms of the Tramadol License Agreement, Fortress paid Revogenex an up-front licensing fee of $2.0 million upon execution and an additional $1.0 million on June 17, 2015. A $1.0 million milestone payment was due upon NDA submission in December 2019 which was incurred by Avenue. There is also an additional milestone totaling $3.0 million due upon the FDA approval of IV tramadol. Additional high single-digit to low double-digit royalty payments on net sales of licensed products are due. Royalties will be paid on a product-by-product and country-by-country basis until the expiration in each country of the valid patent claim. In return, Fortress obtained the exclusive worldwide rights to three U.S. patents related to the “Intravenous Administration of tramadol”: U.S. Patent No. 8,895,622 (the ’622 patent), which issued on November 25, 2014; U.S. Patent No. 9,561,195 (the ’195 patent), which issued on February 7, 2017; and U.S. Patent No. 9,566,253 (the ’253 patent), which issued on February 14, 2017 (all with the exception of Canada, Central America and South America with respect to 50 mg and 100 mg IV tramadol HCl injections). Additionally, Fortress acquired the rights to an open U.S. Investigational New Drug Application pertaining to IV tramadol, as well as all supporting documentation and relevant correspondence with the FDA. Further, under the Tramadol License Agreement, Fortress assumed the rights and obligations of Revogenex under its current manufacturing agreement with Zaklady Farmaceutyczne Polpharma ("Polpharma"), or (the "Manufacturing Agreement"). Fortress transferred all its rights and obligations under the Tramadol License Agreement and the Manufacturing Agreement to us pursuant to an Asset Transfer Agreement, dated as of May 13, 2015.

The Tramadol License Agreement will expire on a product-by-product and country-by-country basis upon the expiration of the last licensed patent right, unless the agreement is earlier terminated. In addition to standard early termination provisions, the Tramadol License Agreement may also be terminated early by: (i) Revogenex if the FDA does not issue an approval or otherwise issues a “not approvable” notice for the NDA within 27 months after the NDA has been filed with the FDA (Avenue submitted the NDA to the FDA in December 2019), although this termination right will be tolled if we are using commercial reasonable efforts in our negotiations with the FDA for approval and if we receive a “not approvable” notice (Avenue announced the receipt of the First CRL from the FDA in October 2020), we will have a 15 month period to correct any issues and re-submit the NDA for approval, (ii) us if we reasonably determine prior to NDA approval that the development of IV tramadol is not economically viable, or (iii) either Revogenex or us (provided we are using or have used commercially reasonable efforts to commercialize IV tramadol) if, after the third anniversary date of the commercial launch, we fail to achieve annual net sales with respect to IV tramadol of at least $20 million in any given calendar year, with certain exceptions.

Competition

The pharmaceutical industry is characterized by rapidly advancing technologies, intense competition and a strong emphasis of proprietary products. We face competition and potential competition from a number of sources, including pharmaceutical and biotechnology companies, generic drug companies, drug delivery companies and academic and research institutions. In addition, companies that are active in different but related fields represent substantial competition for us. Many of our competitors have significantly greater capital resources, larger research and development staffs and facilities and greater experience in drug development, regulation, manufacturing and marketing than we do. These organizations also compete with us to recruit qualified personnel, attract partners for joint ventures or other collaborations, and license technologies that are competitive with ours. To compete successfully in this industry, we must identify novel and unique drugs or methods of treatment and then complete the development of those drugs as treatments before our competitors do so.

We believe that IV tramadol, if approved, will compete with a number of opioid and non-opioid drugs that are currently available for the management of acute pain or in development. The most commonly used opioids in the postoperative and acute pain settings are morphine, hydromorphone and fentanyl. In 2020, the FDA also approved OLINVYK (oliceridine), an intravenous opioid agonist for the management of moderate to severe acute pain in adults, where the pain is severe enough to require an intravenous opioid and for whom alternative treatments are inadequate. The non-opioid drugs used in this setting include Combogesic (combination IV acetaminophen and ibuprofen), Ofirmev (IV acetaminophen) and IV formulations of NSAIDs such as Dyloject (diclofenac), Toradol (ketorolac), Anjeso (meloxicam) and Caldolor (ibuprofen). In addition, we also expect to compete with agents such as Exparel (bupivacaine liposome injectable suspension), Zynrelef (bupivacaine and meloxicam) and Xaracoll (bupivacaine implant).

In addition to approved products, there are a number of product candidates in development for the management of acute pain. In addition to reformulations and fixed-dose combination products of already available therapies, there are also several novel agents in clinical development such as LTG-001 (Latigo Biotherapeutics), LY4515100 (Eli Lilly), Halneuron Nav1.7 (Dogwood Therapeutics), and CA-008 (Concentric Analgesics).

We believe that ATX-04, if approved, will be used in combination with existing approved ERTs including Myozyme/Lumizyme (Sanofi) and Nexviazyme (Sanofi). In addition, ATX-04 may compete with an approved combination therapy of Pombiliti/Opfolda (Amicus) which consists of an ERT and an oral stabilizer.

In addition to approved products for Pompe disease, there are a number of investigational therapies in clinical development for the treatment of Pompe disease, which are primarily muscle and liver-targeted adeno-associated viral vector gene therapy approaches. Future clinical stage competitors may include modalities such as mRNA therapies, substrate reduction therapies, and gene editing approaches. We are not aware of any approved therapies designed to increase cellular uptake of ERTs in muscle tissue.

Intellectual Property

General

Our goal is to obtain, maintain and enforce patent protection for our proprietary technologies, including methods of treatment, to preserve our trade secrets, and to operate without infringing on the proprietary rights of other parties, both in the United States and in other countries. Our policy is to actively seek to obtain, where appropriate, the broadest intellectual property protection possible for our product candidates, proprietary information and proprietary technology through a combination of contractual arrangements and patents in the United States.

Patents and other proprietary rights are crucial to the development of our business. We will be able to protect our proprietary technologies from unauthorized use by third parties only to the extent that our proprietary rights are covered by valid and enforceable patents, are supported by regulatory exclusivity, or are effectively maintained as trade secrets. We have several patents and patent applications related to our proprietary technologies, but we cannot guarantee the scope of protection of the issued patents, or that such patents will survive a validity or enforceability challenge, or that any of the pending patent applications will issue as patents.

Generally, patent applications in the United States are maintained in secrecy for a period of 18 months or more. The patent positions of biotechnology and pharmaceutical companies are highly uncertain and involve complex legal and factual questions. Therefore, we cannot predict the breadth of claims allowed in biotechnology and pharmaceutical patents, or their enforceability. To date, there has been no consistent policy regarding the breadth of claims allowed in biotechnology patents. Third parties or competitors may challenge or circumvent our patents or patent applications, if issued. If our competitors prepare and file patent applications in the United States that claim technology also claimed by us, we may have to participate in interference proceedings declared by the USPTO to determine priority of invention, which could result in substantial cost, even if the eventual outcome is favorable to us. In the case of inventorship contests relating to patent applications filed on or after March 16, 2013, we may have to participate in derivation proceedings initiated at the Patent Trial and Appeal Board (PTAB), which could also result in substantial cost. Because of the extensive time required for development, testing and regulatory review of a potential product, it is possible that before we commercialize any of our products, any related patent may expire or remain in existence for only a short period following commercialization, thus reducing any advantage of the patent. However, the life of a patent covering a product that has been subject to regulatory approval may have the ability be extended through the patent restoration program, although any such extension could still be minimal.

If a patent is issued to a third party containing one or more preclusive or conflicting claims, and those claims are ultimately determined to be valid and enforceable, we may be required to obtain a license under such patent or to develop or obtain alternative technology, neither of which may be possible. In the event of litigation involving a third-party claim, an adverse outcome in the litigation could subject us to significant liabilities to such third party, require us to seek a license for the disputed rights from such third party, and/or require us to cease use of the technology. Moreover, our breach of an existing license or failure to obtain a license to technology required to commercialize our products may seriously harm our business. We also may need to commence litigation to enforce any patents issued to us or to determine the scope and validity of third-party proprietary rights. Litigation would involve substantial costs.

IV Tramadol

Pursuant to the Tramadol License Agreement described above, we have exclusive, worldwide commercialization rights to all Revogenex patents, including patent applications, divisionals, continuations, and continuations-in-part, that are directed to IV tramadol (with the exception of Canada, Central America, or South America with respect to 50 mg and 100 mg IV tramadol HCl injections). Currently, this includes U.S. Patent No. 8,895,622 (“the ‘622 patent”), U.S. Patent No. 9,561,195 (“the ‘195 patent”), U.S. Patent 9,566,253 (“the ‘253 patent”), U.S. Patent No. 9,962,343 (“the ’343 patent”), U.S. Patent No. 10,406,122 (“the ’122 patent”), U.S. Patent No. 9,693,949 (“the ’949 patent”), U.S. Patent 9,968,551 (“the ’551 patent”), U.S. Patent No. 9,980,900 (“the ‘900 patent”), U.S. Patent No. 10,022,321 (“the ’321 patent”), U.S. Patent No. 10,537,521 (“the ’521 patent”), U.S. Patent No. 10,624,842 (“the ’842 patent”), U.S. Patent No. 10,751,279 (the ‘279 patent), U.S. Patent No. 10,729,644 (the ‘644 patent), U.S. Patent No. 10,646,433 (“the ‘433 patent”), U.S. Patent No. 10,617,635 (“the ‘635 patent”), U.S. Patent No. 10,729,645 (”the ‘645 patent”), U.S. Patent No. 10,751,277 (“the ‘277 patent”) and U.S. Patent No. 10,751,278 (“the ‘278 patent”), and any related patent applications or future patents, including divisionals, continuations, and continuations-in-part.

The ’622 patent is directed to and claims methods of: treating pain by administering a therapeutically effective dose of tramadol intravenously over a time period from 10 minutes to about 45 minutes (i.e., the rate of IV tramadol administration); treating pain in humans by intravenously administering tramadol in solution at a range of concentrations over the same time period; treating acute pain in humans by administering IV tramadol over 10 to 30 minutes, such that at least one side effect is reduced; and treating acute postoperative pain by administering tramadol to a human patient intra-operatively at wound closure, or from first demand of analgesia postoperatively, intravenously over a time period from 10 to 30 minutes, in conjunction with administering further tramadol doses post-operatively and administering a different intravenous opioid analgesic which is not tramadol. Further claims of the ’622 patent are directed to various effective doses, including 50 mg. These methods of treatment may provide significant benefits (e.g., reduced side effects) over previously approved methods of administration of IV tramadol, in which the dose was typically accomplished over a two to three-minute period. Additional claims of the ’622 patent focus on the intravenous administration of tramadol over 15 (±2) minutes, which represents the preferred method of administration that we will be pursuing in obtaining approval of our product through the FDA. The ’622 patent further describes and claims pharmacokinetic properties of our proprietary method of treatment (e.g., Tmax, Cmax and AUC), which are different from the previously achieved pharmacokinetics of prior IV tramadol formulations, such as Tramal® solution for injection (available outside the U.S.). This patent is scheduled to expire on October 20, 2032, absent possible regulatory patent term extensions.

In view of additional prior art discovered after the issuance of the ’622 patent, we have focused efforts on obtaining further patent coverage for the technology. Pursuant to the Tramadol License Agreement, we have exclusive commercialization rights to all continuation patent filings of the ’622 patent. As a first step, we have prosecuted further claims in multiple continuation patent applications of the ’622 patent, in which extensive searches were conducted and all information known to be material to patentability was brought to the attention of the USPTO. The goal was to obtain further patent claims which patentably differentiate over the prior art. To date, our efforts have resulted in the issuance of the ’195 patent, which issued from U.S. Application Serial No. 14/550,279 on February 7, 2017; the ’253 patent, which issued from U.S. Application Serial No. 14/713,775 on February 14, 2017; the ’343 patent, which issued from U.S. Application Serial No. 14/550,279 on May 8, 2018; and the ’122 patent, which issued from U.S Application Serial No. 15/972,684 on September 10, 2019; all of which are entitled “Intravenous Administration of tramadol,” and all of which contain the same disclosure (specification) as that of the ’622 patent. The ’195, ’253, ’343 and ’122 patents are scheduled to expire on the same day as the expiration of the ’622 patent (October 20, 2032 absent possible regulatory patent term extensions).

The ’253 patent includes claims directed to a method of treating moderate to severe acute pain in a human patient by a dose of about 50 mg of IV tramadol over a time period from 10 minutes to 20 minutes and administering further doses of tramadol at two to six-hour time intervals (each dose being administered intravenously over the same time period).

The ’343 patent includes claims directed to similar subject matter but varies from the ’253 patent in that it specifically claims treating acute post-operative pain. There is also a continuation patent application pending with the USPTO.

The ’195 patent includes claims directed to a method of treating moderate to severe acute pain by administering to a human patient a dose of about 50 mg of IV tramadol over 10 to 20 minutes, and administering further doses of IV tramadol at two to six hour time intervals to treat pain in said patient, (each dose administered over 10 to 20 minutes), such that the Cmax does not exceed the Cmax of 100 mg oral tramadol administered every six hours for nine doses. The term Cmax refers to the maximum plasma concentration of tramadol achieved during a dosing interval. The claims of the ’195 patent therefore further focus on a goal of the technology — that the blood plasma levels of tramadol resulting from our 50 mg intravenous dose to a patient would not be significantly greater than the blood plasma level of the blood plasma levels of tramadol that are already routinely experienced by patients in the United States who are administered oral doses of 100 mg tramadol. Tramadol hydrochloride is approved in the United States for oral administration in an amount from 50 mg to 100 mg administered every four to six hours, not to exceed 400 mg/day.

The ’122 patent includes claims directed to a method of treating moderate to severe acute pain or acute post-operative pain by administering to a human patient undergoing an operation a dose of about 50 mg of tramadol at about 2 to about 6 hour time intervals for at least about 48 hours to treat pain in said patient, wherein each dose of tramadol is administered intravenously over a time period from 10 minutes to 20 minutes, such that the patient is treated for acute postoperative pain. Further claims call for at least one dose of tramadol to be administered over 15 (±2) minutes.

The ’253, ’195, ’343 and ’122 patents include further claims to the treatment method, including also administering one or more doses of an IV opioid analgesic that is not tramadol as rescue medicine to the patient to treat breakthrough pain. The claims are further directed to the use of the treatment method for postoperative pain, and claims in the ’195, ’343, and ’122 patents are also directed to the treatment method resulting in a reduction in a side-effect associated with tramadol therapy selected from nausea, vomiting, or both.

The ’278 and ’277 patents are directed to the treatment method, for example, where acute pain is treated.

Other patents are directed to tramadol doses other than about 50 mg. For example, the patents include the ’279 patent and the ’433 patent (about 60 mg tramadol), and the ’521 patent and the ’321 patent (about 25 mg tramadol).

The ’645, ’644, and ’635 patents are directed to various aspects of the treatment method wherein tramadol is co-administered with another analgesic: ketorolac (the ’645 patent), another analgesic selected from NSAIDs, acetaminophen, and another opioid (the ’644 patent), or acetaminophen (the ’635 patent).

We believe that the administration of, e.g., a 50 mg IV tramadol dose over the prolonged time interval is efficacious and also may advantageously lead to a lower incidence of side effects and increased drug tolerability. Additionally, we believe that the claims of these patents patentably differentiate over all prior art that we are aware of and which was made of record with the USPTO.

The Tramadol License Agreement also grants us the exclusive commercialization rights to the ’949 patent and any related patent applications or future patents, including divisionals, continuations, and continuations-in-part. The ’949 patent is directed to an IV tramadol dosing regimen and issued on July 4, 2017. This new patent describes and claims a dosing regimen in which our IV tramadol product is dosed to a human patient(s) for treating acute pain in a manner such that the plasma levels obtained (including but not limited to Cmax and AUC) are very similar to treatment with a 100 mg oral dose of tramadol hydrochloride to a human patient(s) every six hours at steady state. This is accomplished by intravenously administering a first dose of tramadol 50 mg to a human patient; then intravenously administering a second dose of tramadol 50 mg about 2 hours after the first dose; intravenously administering a third dose of tramadol 50 mg about 2 hours after the second dose; and thereafter intravenously administering doses of tramadol 50 mg at dosage intervals of about 4 hours. It is believed that this dosing regimen may provide advantages over the commercially available oral doing regimen, and further allows the patient to be stepped down from the IV tramadol dosing regimen to an oral dosing regimen with less concern about deleterious effects which might occur from a switch from IV to oral analgesic medicine (e.g., as would be the case where the switch to an oral version of the drug provides a much different Cmax and AUC than the IV dose provides at steady state). This new dosing regimen is the result of considerable experimentation by us, and a prior art search has not revealed any similar dosing regimen being used or published with respect to IV tramadol infusions. The patent term of the ’949 patent is scheduled to expire on May 24, 2036, absent possible regulatory patent term extensions.

A continuation of the ’949 patent issued as the ’551 patent on May 18, 2018, claiming the same dosing regimen except that it includes claims that specify that the mean Cmax after the third administered dose of tramadol is similar to the mean Cmax at steady-state for a dosing regimen of 100 mg tramadol HCl administered orally every 6 hours, and/or specifies pharmacokinetic parameters for Cmax and/or AUC at steady-state. The ’551 patent is scheduled to expire on the same day as the ’949 patent (May 24, 2036, absent possible regulatory patent term extensions).

The ’900 patent (a continuation-in-part of the ’949 patent) issued on May 29, 2018 and is directed to the same dosing regimen, except that it includes claims that specify the pharmacokinetic parameters after the third administered dose of tramadol. Further continuation patent applications are pending for (i) the 50 mg dosing regimen to human patients experiencing acute pain or acute post-operative pain; (ii) the 50 mg dosing regimen directed to administering a first dose of tramadol 50 mg to a human patient and thereafter intravenously administering additional doses of tramadol to the human patient(s) in an amount of about 50 mg tramadol at dosage intervals of about 4 hours, except that a second dose is intravenously administered as a loading dose at a shortened interval as compared to the dosage interval of about 4 hours, and (iii) administering the 50 mg dosing regimen as described with an NSAID as well. The ’900 patent is scheduled to expire on the same day as the ’949 patent (May 24, 2036, absent possible regulatory patent term extensions).

The Tramadol License Agreement also grants us the exclusive commercialization rights to continuation applications of the ’949, ’551, and ’900 patents (and related applications) that are currently pending at the USPTO. This includes, but is not limited to, U.S. Application Serial No. 15/976,503 (“the ’503 application”), a continuation of the ’551 patent and filed on May 10, 2018; U.S. Application Serial No. 16/223,522 (“the ’522 application”), a continuation of the ’199 application and filed on December 18, 2018; U.S. Application Serial No. 15/986,199 (“the ’199 application”), a continuation of the ’900 patent and filed on May 22, 2018; and U.S. Application Serial No. 16/223,556 (“the ’556 application”), a continuation of the ’503 application and filed on December 18, 2018. The ’503, ’522, and ’199 applications are directed to various dosing regimens for intravenous administration of a 50 mg dose of tramadol. The ’556 application is directed to various dosing regimens for intravenous administration of a 60 mg dose of tramadol.

The Tramadol License Agreement further grants us exclusive commercialization rights to new patents/patent applications pending with the USPTO directed to the intravenous administration of tramadol co-administered with other analgesics. Currently, these patent applications include U.S. Application Serial No. 16/269,213 ("the '213 application", now the '279 patent), a continuation of the '556 application and filed February 6, 2019; U.S. Application Serial No. 16/269,124 ("the '124 application"; now U.S. Patent No. 10,729,644), a continuation of the '522 application and filed on February 6, 2019; U.S. Application Serial No. 16/375,363 ("the '363 application", now the '635 patent), a continuation of the '213 application and filed on April 4, 2019 (now U.S. Patent No. 10,751,279); and U.S. Application Serial No. 16/376,382 ("the '382 application", now the '645 patent), a continuation of the '213 application and filed on April 5, 2019. The '213 application is directed to intravenously administering a first dose of 60 mg of tramadol, later administering doses every 6 hours (except for the second dose, which is a loading dose administered in a shorter time period), and also administering another analgesic. The '124 application (now the '644 patent) is similar, but it claims a dosage of 50 mg. The '363 application is also similar to the '213 application, in that it claims 60 mg, but it varies in that it specifies acetaminophen as the other analgesic. The '382 application is similar to the '124 application, in that it claims 50 mg, but it varies in that it specifies ketorolac as the other analgesic.

The Tramadol License Agreement also grants us the exclusive commercialization rights to the '321 patent, which is directed to an IV tramadol dosing regimen and issued on July 17, 2018. This new patent describes and claims a dosing regimen in which our IV tramadol product is dosed to a human patient(s) for treating acute pain by intravenously administering a first dose of tramadol 25 mg to a human patient; then intravenously administering a second dose of tramadol 25 mg about 2 hours after the first dose; intravenously administering a third dose of tramadol 25 mg about 2 hours after the second dose; and thereafter intravenously administering doses of tramadol 25 mg at dosage intervals of about 4 hours. The '321 patent is scheduled to expire on April 13, 2037, absent possible regulatory patent term extensions.

A continuation of the '321 patent issued as the '521 patent on January 21, 2020, claiming the same dosage as the '321 patent (25 mg), but over dosing intervals of about 4 hours, where the second dose is intravenously administered as a loading dose at a shortened interval as compared to the interval of about 4 hours. It further claims this method of treatment, where the at least one side effect, selected from nausea, vomiting, and seizure, is reduced. The '521 patent is scheduled to expire on the same day as the '321 patent (April 13, 2037, absent possible regulatory patent term extensions).

With the exception of 50 mg and 100 mg dosages of IV tramadol HCl in Canada, Central America, and South America, the Tramadol License Agreement also grants us the exclusive commercialization rights to certain foreign patents and patent applications, including PCT applications. With the exception of the territory constraint listed above, we have the exclusive commercialization rights to PCT Application No. US/2012/033304 and any related patents or patent applications.

In sum, we believe that our patent filings will prevent third parties from marketing a generic version of our product without infringing claims of the patent(s) we are seeking.

ATX-04

Pursuant to the ATX-04 License Agreement described above, we obtained exclusive, worldwide rights to U.S. Patent No. 8,679,478 ("the '478 patent") title "Methods of Lysosomal Storage Disease Therapy" and rights to a U.S. provisional application.

The '478 patent (issued in March 2014) generally covers methods for improving the treatment of lysosomal storage diseases through the administration of a lysosomal enzyme therapy in combination with a second therapeutic agent, including β-adrenergic agonists such as clenbuterol, that increases the expression or availability of cell-surface receptors involved in lysosomal enzyme uptake.

The '478 patent is expected to expire in 2031, not including any potential patent term extension. The pending provisional patent application, if issued, would be expected to expire in 2046.

Other Intellectual Property Rights

We depend upon trademarks, trade secrets, and continuing technological advances to develop and maintain our competitive position. We also depend upon the skills, knowledge and experience of our scientific and technical personnel, as well as that of our advisors, consultants and other contractors. This knowledge and experience we call "know-how." To help protect our proprietary know-how which is not patentable, and for inventions for which patents may be difficult to enforce, we rely on trade secret protection and confidentiality agreements to protect our interests. To this end, we require all employees, scientific advisors, consultants, collaborators and other contractors, upon commencement of a relationship with us, to enter into confidentiality agreements, which prohibit the disclosure of confidential information and, in the case of parties other than our research and development collaborators, require disclosure and assignment to us of the ideas, developments, discoveries and inventions important to our business. These agreements are designed to protect our proprietary information and to grant us ownership of technologies that are developed in connection with their relationship with us. These agreements may not, however, provide protection for our trade secrets in the event of unauthorized disclosure of such information.

In addition to patent protection, we may utilize orphan drug regulations or other provisions of the Food, Drug and Cosmetic Act of 1938 (the "FDCA"), to provide market exclusivity for certain of our product candidates. Orphan drug regulations provide incentives to pharmaceutical and biotechnology companies to develop and manufacture drugs for the treatment of rare diseases. Under these provisions, a manufacturer of a designated orphan drug can seek tax benefits and the holder of the first approval of a designated orphan product from the FDA will be granted a seven-year period of marketing exclusivity for such FDA approved orphan product.

Supply and Manufacturing

We do not own or operate manufacturing facilities for the production of our product candidates, nor do we have plans to develop or own manufacturing operations in the foreseeable future. We currently utilize third-party contract development and manufacturing organizations ("CDMOs") for all required raw materials, drug substance, drug product and packaging for our product candidates

Currently, we have one CDMO, Polpharma, who subcontracts several activities to another manufacturer, to provide us clinical and commercial supply of IV tramadol in accordance with current Good Manufacturing Practice ("CGMP") requirements. We also may plan to qualify a backup manufacturer. We will be obligated to purchase a minimum amount of final packaged drug product from our current manufacturer over the course of five years commencing upon the approval of our NDA for IV tramadol. We will pay a fixed per dose unit fee to our current manufacturer in addition to a low single digit royalty on net sales revenue for a certain period of time and a milestone payment amount of $2.0 million upon FDA approval of IV tramadol.

We are currently in the process of establishing the supply and manufacturing sources for ATX-04 and expect to engage a CDMO to provide us clinical and potential commercial supply of ATX-04 in accordance with CGMP requirements.

We and our manufacturers, as well as their key subcontractors, are and will be subject to extensive government regulation in connection with the manufacture of any pharmaceutical product, including ongoing periodic and unannounced inspections by the FDA, the DEA and corresponding state, European and other foreign agencies to ensure strict compliance with CGMPs and other applicable state, federal and foreign regulations. We do not have control over third party manufacturers' compliance with these regulations and standards, other than through contractual obligations and audit oversight. If they are deemed out of compliance with CGMPs, product recalls could result, inventory could be destroyed, production could be stopped and supplies could be delayed or otherwise disrupted.

If we need to change manufacturers after commercialization, the FDA and some corresponding foreign regulatory agencies must approve these new manufacturers in advance, which will involve testing and additional inspections to ensure compliance with CGMPs and other FDA regulations and standards and may require significant lead times and delay. Furthermore, switching manufacturers may be difficult because the number of potential manufacturers is limited. It may be difficult or impossible for us to find a replacement manufacturer quickly or on terms acceptable to us, or at all.

Government and Industry Regulations

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, post-approval monitoring and reporting, marketing and export and import of products such as those we are developing.

U.S. Drug Development

In the United States, the FDA regulates drugs under the Food, Drug and Cosmetic Act ("FDCA"), and its implementing regulations. Since IV tramadol is an opioid, such drugs are also regulated by the DEA as controlled substances under the Controlled Substances Act, even at the drug development stage. Drugs are also subject to other federal, state and local statutes and regulations. The process of obtaining regulatory approval and maintaining subsequent compliance with applicable federal, state and local statutes and regulations require the expenditure of substantial time and financial resources. Failure to comply with the applicable U.S. requirements at any time during product development, the approval process or after approval may subject an applicant to administrative or judicial sanctions. These sanctions could include, among other actions, the FDA's refusal to approve pending applications, withdrawal of an approval, a clinical hold, untitled or warning letters, voluntary product recalls or market withdrawals, product seizures, total or partial suspension of production or distribution injunctions, fines, consent decrees, refusals of government contracts, restitution, disgorgement or civil and criminal penalties. Any regulatory, compliance or enforcement action by any agency or judicial enforcement action could have a material adverse effect on our product candidates during development and after regulatory approval, or our Company. If we fail to manufacture IV tramadol in sufficient quantities and at acceptable quality and pricing levels, fail to comply with additional DEA requirements related to controlled substances, or fail to fully comply with CGMP regulations, we may face delays in the commercialization of IV tramadol, if approved, or be unable to meet market demand, and may be unable to generate potential revenues.

Any possible product candidates must be approved by the FDA through one of FDA's available drug approval processes before they may be legally marketed in the United States – (1) an NDA submitted under section 505(b)(1) of the FDCA; (2) an abbreviated new drug application ("ANDA") under section 505(j); or (3) a new drug application submitted under section 505(b)(2) of the FDCA (505(b)(2) application). We have already submitted our first 505(b)(2) application and intend to utilize the 505(b)(2) regulatory approval pathway for any additional product candidates. Development and approval of drugs generally involves the following:

- Submission to the FDA of an IND, which must become effective before clinical trials involving humans may begin;
- Approval by an independent institutional review board, or IRB, or ethics committee at each clinical trial site before a trial may be initiated at that site;
- Performance of adequate and well-controlled human clinical trials in accordance with applicable IND regulations and other good clinical practices, or GCPs;
- Submission of an application (NDA, ANDA or 505(b)(2)) to the FDA;
- The FDA's decision within 60 days of its receipt of an NDA to accept it for filing and review;
- Satisfactory completion of an FDA pre-approval inspection of the manufacturing facility or facilities where the drug is produced to assess compliance with CGMPs and assure that the facilities, methods and controls are adequate to preserve the drug's identity, strength, quality, and purity;
- Possible FDA audit of the clinical trial sites that generated the data in support of the NDA; and
- FDA review and approval of the NDA.

The nonclinical testing, clinical trials and review process requires substantial time, effort and financial resources, and we cannot be certain that any approvals for our product candidates will be granted on a timely basis, if at all. The data required to support an NDA are generated in two distinct developmental stages: nonclinical and clinical. The nonclinical development stage generally involves synthesizing the active component, developing the formulation and control procedures and determining the manufacturing process, as well as carrying out non-human toxicology, pharmacology and drug metabolism studies in the laboratory, which may support subsequent clinical testing in humans. In the case of documentation to support a 505(b)(2) NDA, this nonclinical data may be referenced in literature or the FDA's previous findings of safety and efficacy for a listed drug. The sponsor must submit the results of the nonclinical studies, together with manufacturing information, analytical data, any available clinical data or literature and a proposed clinical protocol, to the FDA as part of the IND. An IND is a request for authorization from the FDA to administer an investigational drug product to humans, and must become effective before clinical trials may begin. An IND automatically becomes effective 30 days after receipt by the FDA, unless before that time the FDA raises concerns or questions related to one or more proposed clinical trials and places the IND on clinical hold. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. As a result, submission of an IND may not result in the FDA allowing clinical trials to commence.

The clinical stage of development involves the administration of the product candidate to healthy volunteers and patients under the supervision of qualified investigators, generally physicians not employed by or under the sponsor's control, in accordance with GCPs, which include the requirement that all research subjects provide their informed consent for their participation in any clinical trial. Clinical trials are conducted under protocols detailing, among other things, the objectives of the trial, dosing procedures, subject selection and exclusion criteria and the parameters to be used to monitor subject safety and assess efficacy. Each protocol, and any subsequent amendments to the protocol, must be submitted to the FDA as part of the IND. Further, each clinical trial must be reviewed and approved by an independent IRB for each institution where the trial will be conducted to ensure that the risks to individuals participating in the clinical trials are minimized and are reasonable in relation to anticipated benefits. The IRB also approves the informed consent form that must be provided to each subject or his or her legal representative and must monitor the clinical trial until completed.

Clinical Trials

Clinical trials are generally conducted in three sequential phases, known as Phase 1, Phase 2 and Phase 3, and may overlap.

- Phase 1 clinical trials generally involve a small number of healthy volunteers who are initially exposed to a single dose and then multiple doses of the product candidate. The primary purpose of these clinical trials is to assess the metabolism, pharmacology, side effect tolerability and safety of the drug.

- Phase 2 clinical trials typically involve studies in disease-affected patients to determine the dose required to produce the desired benefits. At the same time, safety and further pharmacokinetic and pharmacodynamics information is collected, possible adverse effects and safety risks are identified and a preliminary evaluation of efficacy is conducted.

- Phase 3 clinical trials generally involve large numbers of patients at multiple sites and are designed to provide the data necessary to demonstrate the product candidate's safety and effectiveness for its intended use, establish its overall benefit/risk relationship, and provide an adequate basis for approval.

Post-approval trials, sometimes referred to as Phase 4, may be conducted after initial marketing approval. These trials are used to gain additional experience from the management of patients in the intended therapeutic indication. In certain instances, the FDA may mandate the performance of Phase 4 clinical trials as a condition of approval of an NDA.

Before approval, progress reports detailing the results of the clinical trials, 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 rate increase of a serious suspected adverse reaction compared to that listed in the protocol or investigator brochure. Phase 1, Phase 2 and Phase 3 clinical trials may not be completed successfully within any specified period, if at all. The FDA or the sponsor may suspend or terminate a clinical trial at any time on various grounds, including a finding that the research subjects are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution if the trial is not being conducted in accordance with the IRB's requirements or the use of the drug raises any safety concerns. Additionally, some clinical trials are overseen by an independent group of qualified experts organized by the sponsor, known as a data safety monitoring board or committee. Depending on its charter, this group may determine whether a trial may move forward at designated check points based on access to certain data from the trial.

There are also requirements governing the reporting of ongoing clinical 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, study 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. However, there are evolving rules and increasing requirements for publication of all trial-related information, and it is possible that data and other information from trials involving drugs that never garner approval could require disclosure in the future.

Concurrent with clinical trials, companies usually develop additional information about the chemistry and physical characteristics of the drug as well as finalize a process for manufacturing it 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, a drug manufacturer must develop methods for testing the identity, strength, quality, and purity of the final drug product. 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.

NDA and FDA Review Process

The results of nonclinical studies and clinical trials, together with other detailed information, including extensive information on manufacturing and drug composition and proposed labeling, are submitted to the FDA in the form of an NDA requesting approval to market the drug for one or more specified indications. The FDA reviews an NDA to determine, among other things, whether a drug is safe and effective for its intended use and whether the product is being manufactured in accordance with CGMPs to assure and preserve the product's identity, strength, quality, and purity. FDA approval of an NDA must be obtained before a drug may be legally marketed in the United States.

Under the PDUFA as amended in 2017, each NDA must be accompanied by a user fee. The FDA adjusts the PDUFA user fees on an annual basis. According to the FDA's current fee schedule for fiscal year (FY) 2026, effective through September 30, 2026, the user fee for an application requiring clinical data, such as an NDA, is $4,682,003. Clinical data, as interpreted by the FDA to assess fees under PDUFA, include (1) study reports or literature reports of what are explicitly or implicitly represented by the applicant to be adequate and well-controlled trials for safety or effectiveness or (2) reports of comparative activity (other than bioequivalence and bioavailability studies), immunogenicity, or efficacy, where those reports are necessary to support a claim of comparable clinical effect. The term does not include bioequivalence and bioavailability studies submitted in support of an NDA. PDUFA also imposes an annual Prescription Drug Program Fee ($442,213 per approved prescription drug product for FY 2026) for establishments named as the applicant in a human drug application. An establishment is not to be assessed more than five (5) prescription drug program fees in a given fiscal year. Fee waivers or reductions are available in certain circumstances, including waiver of the application fee for the first application filed by a small business.

The FDA performs an administrative review of an NDA before accepting it for filing and may request additional information rather than accepting the applications. The FDA must make a decision on accepting an NDA for filing within 60 days of receipt. Once the submission is accepted for filing, the FDA begins an in-depth scientific and technical review of the NDA. Under the goals and policies agreed to by the FDA under PDUFA, the FDA has ten months from the filing date in which to complete its initial review of a standard NDA and respond to the applicant, and six months from the filing date for an NDA designated for priority review. The FDA does not always meet its PDUFA goal dates for standard and priority NDAs, and the review process is often significantly extended by FDA requests for additional information or clarification.

Before approving an NDA, the FDA will conduct a pre-approval inspection of the manufacturing facilities for the new product to determine whether they comply with CGMPs. The FDA will not approve the product unless it determines that the manufacturing processes and facilities are in compliance with CGMP requirements and adequate to assure consistent production of the product to specifications. The FDA may also audit data from clinical trials to ensure compliance with GCP requirements. Additionally, the FDA may refer applications for novel drug products or drug products which present difficult questions of safety or efficacy to an Advisory Committee, typically a panel that includes clinicians and other experts, for review, evaluation and a recommendation regarding whether the application should be approved and, if so, under what conditions. The FDA is not bound by the recommendations of an Advisory Committee, but it considers them carefully when making decisions. NDAs submitted under Section 505(b)(2) are typically not referred to an Advisory Committee for consideration unless new safety information is revealed in the review cycle. The FDA likely will re-analyze the clinical trial data, which could result in extensive discussions between the FDA and the applicant during the review process. The review and evaluation of an NDA by the FDA is extensive and time consuming and may take longer than originally planned to complete, and we may not receive a timely approval, if at all.

After the FDA evaluates an NDA, it will issue an approval letter or a Complete Response Letter. An approval letter authorizes commercial marketing of the drug with prescribing information for specific indications. A Complete Response Letter indicates that the review cycle of the application is complete and the application will not be approved in its present form. A Complete Response Letter usually describes the specific deficiencies in the NDA identified by the FDA, and may require additional clinical data, such as an additional pivotal Phase 3 clinical trial, and other significant and time-consuming requirements related to clinical trials, nonclinical studies or manufacturing. If a Complete Response Letter is issued, the applicant may resubmit the NDA, addressing all of the deficiencies identified in the letter, or withdraw the application. Even if such data and information are submitted, the FDA may decide that the NDA does not satisfy the criteria for approval. Data obtained from clinical trials are not always conclusive, and the FDA may interpret data differently than the sponsor interprets the same data.

There is no assurance that the FDA will approve a product candidate for marketing, and the sponsor may encounter significant difficulties or costs during the review process. If a product receives marketing 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. Further, the FDA may require that certain contraindications, warnings or precautions be included in the product labeling, or it may condition approval on changes to the proposed labeling. The FDA also may condition approval on the development of adequate controls and specifications for manufacturing and a commitment to conduct post-marketing testing and surveillance to monitor the potential effects of approved products. For example, the FDA may require Phase 4 trials designed to further assess a drug's safety and efficacy.

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 drug. If the FDA concludes a REMS is needed, the sponsor of the NDA must submit a proposed REMS. The FDA will not approve the NDA without an approved REMS, if required. A REMS 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. Marketing approval may be withdrawn for non-compliance with regulatory requirements or if problems occur following initial marketing.

Section 505(b)(2) Regulatory Approval Pathway

Section 505(b)(2) was added to the Act by the Drug Price Competition and Patent Term Restoration Act of 1984 (Hatch-Waxman Amendments). Section 505(b)(2) of the FDCA provides an alternate regulatory pathway for approval of a new drug by allowing the FDA to rely on data not developed by the applicant. Specifically, Section 505(b)(2) permits the submission of an NDA where one or more of the investigations relied upon by the applicant for approval was not conducted by or for the applicant and for which the applicant has not obtained a right of reference. The applicant may rely upon published literature and/or the FDA's findings of safety and effectiveness for an approved drug already on the market. Approval or submission of a 505(b)(2) application, like those for abbreviated new drugs, or ANDAs, may be delayed because of patent and/or exclusivity rights that apply to the previously approved drug.

Under the 505(b)(2) regulatory approval pathway, the applicant may reduce some of the burdens of developing a full clinical program by relying on investigations not conducted by the applicant and for which the applicant has not obtained a right of reference, such as prior investigations involving the listed drug. In such cases, some clinical trials may not be required or may be otherwise limited.

A 505(b)(2) application may be submitted for a new chemical entity (NCE), when some part of the data necessary for approval is derived from studies not conducted by or for the applicant and when the applicant has not obtained a right of reference. Such data are typically derived from published studies, rather than FDA's previous findings of safety and effectiveness of a previously approved drug. For changes to a previously approved drug however, an applicant may rely on the FDA's finding of safety and effectiveness of the approved drug, coupled with information needed to support the change from the approved drug, such as new studies conducted by the applicant or published data. When based on an approved drug, the 505(b)(2) drug may be approved for all of the indications permitted for the approved drug, as well as any other indication supported by additional data.

Section 505(b)(2) applications also may be entitled to marketing exclusivity if supported by appropriate data and information. As discussed in more detail below, three-year new data exclusivity may be granted to the 505(b)(2) application if one or more clinical investigations conducted in support of the application, other than bioavailability/bioequivalence studies, were essential to the approval and conducted or sponsored by the applicant. Five years of marketing exclusivity may be granted if the application is for an NCE, and pediatric exclusivity is likewise available.

Special FDA Expedited Review and Approval Programs

The FDA has various programs, including fast track designation, accelerated approval, priority review and breakthrough therapy designation, that are intended to expedite or simplify the process for the development and FDA review of drugs that are intended for the treatment of serious or life-threatening diseases or conditions and demonstrate the potential to address unmet medical needs. The purpose of these programs is to provide important new drugs to patients earlier than under standard FDA review procedures. To be eligible for fast track designation, the FDA must determine, based on the request of a sponsor, that a drug is intended to treat a serious or life-threatening disease or condition and based on preclinical or preliminary clinical data demonstrates the potential to address an unmet medical need. The FDA will determine that a product will fill an unmet medical need if it will provide a therapy where none exists or provide a therapy that may be potentially superior to existing therapy based on efficacy or safety factors.

The FDA may give a priority review designation to drugs that offer major advances in treatment or provide a treatment where no adequate therapy exists. A priority review means that the goal for the FDA to review an application is six months, rather than the standard review of ten months under current PDUFA guidelines. These six- and ten-month review periods are measured from the "filing" date rather than the receipt date for NDAs for new molecular entities, which typically adds approximately two months to the timeline for review and decision from the date of submission. Products that are eligible for fast track designation are also likely to be considered appropriate to receive a priority review.

In addition, drugs studied for their safety and effectiveness in treating serious or life-threatening illnesses and that provide meaningful therapeutic benefit over existing treatments may receive accelerated approval and may be approved on the basis of adequate and well-controlled clinical trials establishing that the drug 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 may require a sponsor of a drug receiving accelerated approval to perform post-marketing studies to verify and describe the predicted effect on irreversible morbidity or mortality or other clinical endpoint and under the Food and Drug Omnibus Reform Act of 2022 (FDORA), the FDA is now permitted to require, as appropriate, that such trials be underway prior to approval or within a specific time period after the date of approval for a product granted accelerated approval. Under FDORA, the FDA has increased authority for expedited procedures to withdraw approval of a drug or indication approved under accelerated approval if, for example, the confirmatory trial fails to verify the predicted clinical benefit of the product. In addition, the FDA generally requires, unless otherwise informed by the agency, pre-approval of promotional materials, which could adversely impact the timing of the commercial launch of the product.

Moreover, a sponsor can request designation of a drug candidate as a "breakthrough therapy." A breakthrough therapy is defined as a drug that is intended, alone or in combination with one or more other drugs, to treat a serious or life-threatening disease or condition, and preliminary clinical evidence indicates that the drug may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. Drugs designated as breakthrough therapies are also eligible for accelerated approval and priority review. The FDA must take certain actions, such as holding timely meetings and providing advice, intended to expedite the development and review of an application for approval of a breakthrough therapy.

Additionally, under FDORA, a platform technology incorporated within or utilized by a drug or biological product is eligible for designation as a designated platform technology if (1) the platform technology is incorporated in, or utilized by, a drug approved under an NDA; (2) preliminary evidence submitted by the sponsor of the approved or licensed drug, or a sponsor that has been granted a right of reference to data submitted in the application for such drug, demonstrates that the platform technology has the potential to be incorporated in, or utilized by, more than one drug without an adverse effect on quality, manufacturing, or safety; and (3) data or information submitted by the applicable person indicates that incorporation or utilization of the platform technology has a reasonable likelihood to bring significant efficiencies to the drug development or manufacturing process and to the review process. A sponsor may request the FDA to designate a platform technology as a designated platform technology concurrently with, or at any time after, submission of an IND application for a drug that incorporates or utilizes the platform technology that is the subject of the request. If so designated, the FDA may expedite the development and review of any subsequent original NDA for a drug that uses or incorporates the platform technology. Designated platform technology status does not ensure that a drug will be developed more quickly or receive FDA approval.

Even if a product candidate or our platform qualifies for one or more of these programs, the FDA may later decide that the product candidate no longer meets the conditions for qualification or decide that the time period for FDA review or approval will not be shortened. Furthermore, fast track designation, priority review, accelerated approval and breakthrough therapy designation, do not change the standards for approval and may not ultimately expedite the development or approval process.

Orange Book Listing and Paragraph IV Certification

For NDA submissions, including 505(b)(2) applications, applicants are required to list with the FDA certain patents with claims that cover the applicant's product. Upon approval, each of the patents listed in the application is published in *Approved Drug Products with Therapeutic Equivalence Evaluations*, commonly referred to as the Orange Book. Any applicant who subsequently files an ANDA or a 505(b)(2) application that references a drug listed in the Orange Book must certify to the FDA that (1) no patent information on the drug product that is the subject of the application has been submitted to the FDA; (2) such patent has expired; (3) the date on which such patent expires; or (4) such patent is invalid or will not be infringed upon by the manufacture, use or sale of the drug product for which the application is submitted. This last certification is known as a Paragraph IV certification.

If an applicant has provided a Paragraph IV certification to the FDA, the applicant must also send notice of the Paragraph IV certification to the holder of the NDA for the approved drug and the patent owner once the application has been accepted for filing by the FDA. The NDA holder or patent owner may then initiate a patent infringement lawsuit in response to notice of the Paragraph IV certification. The filing of a patent infringement lawsuit within 45 days of the receipt of a Paragraph IV certification prevents the FDA from approving the ANDA or 505(b)(2) application until the earlier of 30 months from the date of the lawsuit, the applicant's successful defense of the suit, or expiration of the patent.

Pediatric Information

Under the Pediatric Research Equity Act, or PREA, an NDA or supplement to an NDA must contain data to assess the safety and efficacy of the drug for the claimed indications in all relevant pediatric subpopulations and to support dosing and administration for each pediatric subpopulation in which the product is safe and effective. The FDA may grant deferrals for submission of pediatric data or full or partial waivers.

The Food and Drug Administration Safety and Innovation Act, or FDASIA, requires that a sponsor who is planning to submit an NDA for a new active ingredient, new indication, new dosage form, new dosing regimen or new route of administration submit an initial Pediatric Study Plan, or PSP, within 60 days of an end-of-Phase 2 meeting or, if there is no such meeting, as early as practicable before the initiation of the Phase 3 or Phase 2/3 trial. The initial PSP must include an outline of the pediatric trial(s) that the sponsor plans to conduct, including objectives and design, age groups, relevant endpoints and statistical approach, or a justification for not including such information and any request for a deferral of pediatric assessments or a full or partial waiver of the requirement to provide data from pediatric trials. The FDA and the sponsor must reach an agreement on the PSP, but the sponsor can submit amendments to an agreed-upon initial PSP at any time if changes to the pediatric plan need to be considered based on data collected from nonclinical studies, early phase clinical trials and other clinical development programs.

Orphan Drug Designation and Exclusivity

Under the Orphan Drug Act, the FDA may grant orphan drug designation ("ODD") to a drug or biological product intended to treat a rare disease or condition, which is generally a disease or condition that affects fewer than 200,000 individuals in the United States, or 200,000 or more individuals in the United States and for which there is no reasonable expectation that the cost of developing and making the product available in the United States for this type of disease or condition will be recovered from sales of the product.

ODD must be requested before submitting an NDA or BLA. After the FDA grants ODD, the identity of the therapeutic agent and its potential orphan use are disclosed publicly by the FDA. Orphan drug designation does not convey any advantage in or shorten the duration of the regulatory review and approval process.

In the U.S., ODD entitles a party to financial incentives such as opportunities for grant funding towards clinical trial costs, tax advantages and user-fee waivers. In addition, if a product that has ODD 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 to market the same drug for the same indication for seven years from the date of such approval, except in limited circumstances, such as a showing of clinical superiority to the product with orphan exclusivity by means of greater effectiveness, greater safety or providing a major contribution to patient care or in instances of drug supply issues. Competitors, however, may receive approval of either a different product for the same indication or the same product for a different indication but that could be used off-label in the orphan indication. Orphan drug exclusivity also could block the approval of our products for seven years if a competitor obtains approval before we do for the same product, as defined by the FDA, for the same indication we are seeking approval, or if our product is determined to be contained within the scope of the competitor's product for the same indication or disease. In February 2026, Congress passed legislation codifying the FDA's longstanding regulatory interpretation that orphan drug exclusivity applies only to the specific approved use or indication of a drug or biological product, rather than to all uses within a designated rare disease or condition. If we pursue marketing approval for an indication broader than the ODD we have received, we may not be entitled to orphan drug exclusivity. Orphan drug status in the European Union ("EU") has similar, but not identical, requirements and benefits.

In the EU, the European Commission, after receiving the opinion of the EMA's Committee for Orphan Medicinal Products ("COMP"), grants orphan medicinal product designation in respect of products that are intended for the diagnosis, prevention, or treatment of a life threatening or chronically debilitating condition affecting not more than five in 10,000 persons in the EU. In addition, designation may be granted for products intended for the diagnosis, prevention, or treatment of a life threatening, seriously debilitating, or serious and chronic condition when, without incentives, it is unlikely that sales of the drug in the EU would be sufficient to justify the necessary investment in developing the drug or biological product. In each case, there must be no satisfactory method of diagnosis, prevention, or treatment of the applicable condition authorized for marketing in the EU, or, if such a method exists, the sponsor must establish that its product would be of significant benefit to those affected by the condition. In the EU, orphan medicinal product designation also entitles a party to financial incentives such as reduction of fees or fee waivers and ten years of market exclusivity is granted following drug or biological product approval. This period may be reduced to six years if, at the end of the fifth year, it is established that the orphan designation criteria are no longer met, including where it is shown that the product is sufficiently profitable not to justify maintenance of market exclusivity.

Post-Marketing Requirements

Following approval, the company and the new product are subject to continuing regulation by the FDA, which include monitoring and recordkeeping activities, reporting of adverse experiences and complying with promotion and advertising requirements, which include prohibitions on the promotion of the drugs for unapproved, or "off-label" uses. Although physicians may prescribe legally available drugs for off-label treatments, manufacturers may not promote such non-FDA approved uses. Prescription drug promotional materials must be submitted to the FDA in conjunction with their first use on an on-going basis. Further, if there are any modifications to the drug, including changes to indications, labeling, or manufacturing processes or facilities, the applicant may be required to submit and obtain FDA approval of a supplemental NDA or new NDA, which may require the applicant to develop additional data or conduct additional nonclinical studies or clinical trials.

The FDA regulations require that products be manufactured in specific approved facilities and in accordance with CGMPs. These regulations require, among other things, quality control and quality assurance, the maintenance of records and documentation and the obligation to investigate and correct any deviations from CGMPs. Drug manufacturers and other entities involved in the manufacture and distribution of approved drugs are required to register their establishments with the FDA and certain state agencies, and are subject to periodic, unannounced inspections by the FDA and certain state agencies for compliance with CGMPs and other laws. Accordingly, manufacturers must continue to expend time, money and effort in the area of production and quality control to maintain compliance with CGMPs. The discovery of violative conditions, including failure to conform to CGMPs, could result in enforcement actions, and the discovery of problems with a product after approval may result in restrictions on a product, manufacturer or holder of an approved NDA, including voluntary recalls and product seizures.

Discovery of previously unknown problems with a product or the failure to comply with applicable FDA requirements can have negative consequences, including adverse publicity, judicial or administrative enforcement, untitled or warning letters from the FDA, mandated corrections to advertising or communications to doctors and civil or criminal penalties, among others. Newly discovered or developed safety or effectiveness data may require changes to a product's approved labeling, including the addition of new warnings and contraindications, and also may require the implementation of other risk management measures. New government requirements, including those resulting from new legislation, may be established, or the FDA's policies may change, which could delay or prevent regulatory approval of our products under development.

U.S. Marketing Exclusivity and Patent Term Extensions

Depending upon the timing, duration and specifics of the FDA approval of our drug candidates, some of our U.S. patents may be eligible for limited patent term extension ("PTE") under the Drug Price Competition and Patent Term Restoration Act of 1984, commonly referred to as the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a PTE of up to five years as compensation for patent term lost during product development and the FDA regulatory review process. However, PTE cannot extend the remaining term of a patent beyond a total of 14 years from the product's approval date. The PTE period is generally one-half the time between the effective date of an IND and the submission date of an NDA plus the time between the submission date of an NDA and the approval of that application. Only one patent applicable to an approved drug is eligible for the extension and the application for the extension must be submitted prior to the expiration of the patent. The USPTO, in consultation with the FDA, reviews and approves the application for any patent term extension. In the future, we intend to apply for PTE for one of our currently owned or licensed patents to add patent life beyond its current expiration date, depending on the expected length of the clinical trials and other factors involved in the filing of the relevant NDA.

Marketing exclusivity provisions under the FDCA can also delay the submission or the approval of certain marketing applications. The FDCA provides a five-year period of non-patent marketing exclusivity within the U.S. to the first applicant to obtain approval of an NDA for a new chemical entity. A drug is a new chemical entity if the FDA has not previously approved any other new drug containing the same active moiety, which is the molecule or ion responsible for the action of the drug substance. During the exclusivity period, the FDA may not accept for review an abbreviated new drug application, or ANDA, or a 505(b)(2) NDA submitted by another company for another drug based on the same active moiety, regardless of whether the drug is intended for the same indication as the original innovator drug or for another indication, where the applicant does not own or have a legal right of reference to all the data required for approval. However, an application may be submitted after four years if it contains a certification of patent invalidity or non-infringement to one of the patents listed with the FDA by the innovator NDA holder. The FDCA also provides three years of marketing exclusivity for an NDA, or supplement to an existing NDA if new clinical investigations, other than bioavailability studies, that were conducted or sponsored by the applicant are deemed by the FDA to be essential to the approval of the application, for example new indications, dosages or strengths of an existing drug. This three-year exclusivity covers only the modification for which the drug received approval on the basis of the new clinical investigations and does not prohibit the FDA from approving ANDAs for drugs containing the active agent for the original indication or condition of use. Five-year and three-year exclusivity will not delay the submission or approval of a full NDA. However, an applicant submitting a full NDA would be required to conduct or obtain a right of reference to all of the preclinical studies and adequate and well-controlled clinical trials necessary to demonstrate safety and effectiveness. Orphan drug exclusivity, as described below, may offer a seven-year period of marketing exclusivity, except in certain circumstances. Pediatric exclusivity is another type of regulatory market exclusivity in the U.S. which, if granted, adds six months to existing exclusivity periods for all formulations, dosage forms, and indications of the active moiety and patent terms. This six month exclusivity, which runs from the end of other exclusivity protection or patent term, may be granted based on the voluntary completion of a pediatric trial in accordance with an FDA issued “Written Request” for such a trial, provided that at the time pediatric exclusivity is granted there is not less than nine months of term remaining.

DEA Regulation

Because IV tramadol is subject to the Controlled Substances Act ("CSA") we must comply with various statutory requirements set forth by the CSA, as amended, and its implementing regulations as enforced by the DEA. The CSA imposes various registration, record-keeping and reporting requirements, procurement and manufacturing quotas, labeling and packaging requirements, security controls, prescription and order form requirements and restrictions on prescription refills for certain kinds of pharmaceutical products. A principal factor for determining the particular requirements of the CSA applicable to a product, if any, is its actual or potential abuse profile, which is classified into a DEA schedule. A product may be listed as a Schedule I, II, III, IV or V controlled substance, with Schedule I presenting the highest perceived risk of abuse and Schedule V presenting the least. For example, Schedule I controlled substances have no currently accepted medical use in treatment in the United States and a lack of accepted safety for use under medical supervision. The active ingredient in IV tramadol is classified as a Schedule IV controlled substance which are defined by the DEA as drugs with low potential for abuse and low risk of dependence.

Annual registration is required for any facility that manufactures, distributes, dispenses, imports, or exports any controlled substance. The registration is specific to the particular location, activity, and controlled substance schedule. For example, separate registrations are needed for import and manufacturing, and each registration will specify which schedules of controlled substances are authorized. Similarly, separate registrations are also required for separate facilities.

The DEA typically inspects a facility to review its security measures prior to issuing a registration and on a periodic basis. Security requirements vary by controlled substance schedule, with the most stringent requirements applying to Schedule I and Schedule II controlled substances and less stringent requirements for Schedules III, IV, and V. Required security measures include background checks on employees and physical control of inventory through measures such as vaults and inventory reconciliations. Records must be maintained for the handling of all controlled substances, and periodic reports made to the DEA. Reports must also be made for thefts or losses of any controlled substance, and to obtain authorization to destroy any controlled substance.

In addition, a DEA quota system controls and limits the availability and production of controlled substances in Schedule I or II. Distributions of any Schedule I or II controlled substance must also be accompanied by special order forms, with copies provided to the DEA. Because the active ingredient in IV tramadol is currently regulated as a Schedule IV controlled substances, it should not be subject to the DEA's production and procurement quota scheme. However, as an opioid, the DEA may consider re-classifying the active ingredient in IV tramadol from Schedule IV to Schedule II which would require compliance with the DEA security requirements and quota system controls.

To enforce these requirements, the DEA conducts periodic inspections of registered establishments that handle controlled substances. Failure to maintain compliance with applicable requirements, particularly as manifested in loss or diversion, can result in administrative, civil, or criminal enforcement action. The DEA may seek civil penalties, refuse to renew necessary registrations or initiate administrative proceedings to revoke those registrations. In some circumstances, violations could result in criminal proceedings.

In addition to federal scheduling, some drugs may be subject to state-controlled substance regulation and thus more extensive requirements than those determined by the DEA and FDA.

Other Healthcare Laws and Compliance Requirements

Manufacturing, sales, promotion and other activities following product approval are also subject to regulation by numerous regulatory authorities in addition to the FDA, including the Centers for Medicare & Medicaid Services, other divisions of the Department of Health and Human Services, the U.S. Department of Justice, the DEA, the Consumer Product Safety Commission, the Federal Trade Commission, the Occupational Safety & Health Administration, the Environmental Protection Agency and state and local governments.

We will also be subject to various federal and state laws targeting fraud and abuse in the healthcare industry. These laws may impact, among other things, our proposed sales, marketing, and educational programs. In addition, we may be subject to patient privacy regulation by both the federal government and the states in which we conduct our business. The laws that may affect our ability to operate include:

- The federal Anti-Kickback Statute, which prohibits, among other things, persons from knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, in cash or in kind, to induce or reward, or in return for, either (1) the referral of an individual to a person for furnishing any item or service for which payment is available under a federal health care program, or (2) the purchase, lease, order or recommendation thereof of any good, facility, service or item for which payment is available under a federal health care program;

- The False Claims Act and civil monetary penalty laws, which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, false or fraudulent claims for payment from the federal government or making or using, or causing to be made or used, a false record or statement material to a false or fraudulent claim;

- The federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which created new federal criminal statutes that prohibit executing a scheme to defraud any healthcare benefit program, obtaining money or property of the health care benefit program through false representations or knowingly and willingly falsifying, concealing or covering up a material fact, making false statements or using or making any false or fraudulent document in connection with the delivery of, or payment for, health care benefits or services;

- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, or HITECH, and its implementing regulations, which imposes certain requirements relating to the privacy, security and transmission of individually identifiable health information;

- The provision under the ACA commonly referred to as the Sunshine Act, which requires applicable manufacturers of covered drugs, devices, biologics and medical supplies to track and annually report to CMS payments and other transfers of value provided to physicians and teaching hospitals and certain ownership and investment interests held by physicians or their immediate family members in applicable manufacturers and group purchasing organizations; applicable manufacturers are also required to report such information regarding payments and transfers of value provided, as well as ownership and investment interests held, to physician assistants, nurse practitioners, clinical nurse specialists, certified nurse anesthetists, and certified nurse-midwives; and

- State law equivalents of each of the above federal laws, such as the Anti-Kickback Statute and False Claims Act, and state laws concerning security and privacy of health care information, which may differ in substance and application from state-to-state thereby complicating compliance efforts.

The ACA broadened the reach of the fraud and abuse laws by, among other things, amending the intent requirement of the federal Anti-Kickback Statute and the applicable criminal healthcare fraud statutes contained within 42 U.S.C. Section 1320a-7b. Pursuant to the statutory amendment, a person or entity no longer needs to have actual knowledge of this statute or specific intent to violate it in order to have committed a violation. In addition, the ACA provides that 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 or the civil monetary penalties statute. Many states have adopted laws similar to the federal Anti-Kickback Statute, some of which apply to the referral of patients for healthcare items or services reimbursed by any source, not only the Medicare and Medicaid programs.

As noted above, the federal False Claims Act prohibits anyone from, among other things, knowingly presenting, or causing to be presented, false or fraudulent claims for payment from federal programs, including Medicare and Medicaid. Although we would not submit claims directly to payors, manufacturers can be held liable under these laws if they are deemed to "cause" the submission of false or fraudulent claims by, for example, providing inaccurate billing or coding information to customers. In addition, our future activities relating to the reporting of wholesaler or estimated retail prices for our products, the reporting of prices used to calculate Medicaid rebate information and other information affecting federal, state, and third-party reimbursement for our products, and the sale and marketing of our products are subject to scrutiny under this law. For example, pharmaceutical companies have been prosecuted under the federal False Claims Act in connection with their off-label promotion of drugs. Penalties for such violations could include three times the actual damages sustained by the government, mandatory civil penalties between $13,946 and $27,894 for each separate false claim, exclusion from participation in federal healthcare programs, and the potential implication of various federal criminal statutes. Private individuals also have the ability to bring actions under the federal False Claims Act, or *qui tam* actions, and certain states have enacted laws based on the federal False Claims Act.

Pharmaceutical Coverage, Pricing and Reimbursement

In the United States and markets in other countries, sales of any products for which we receive regulatory approval for commercial sale will depend in part on the availability of reimbursement from third party payors, including government health administrative authorities, managed care providers, private health insurers and other organizations. Third party payors are increasingly examining the medical necessity and cost-effectiveness of medical products and services, in addition to their safety and efficacy, and, accordingly, significant uncertainty exists as to the reimbursement status of newly approved therapeutics. Adequate third-party reimbursement may not be available for any products for which we obtain regulatory approval to enable us to realize an appropriate return on our investment in research and product development. We are unable to predict the future course of federal or state health care legislation and regulations, including any changes, repeal, or judicial invalidation of some or all of the provisions of the Affordable Care Act. The Affordable Care Act and further changes in the law or regulatory framework could have a material adverse effect on our business.

International Regulation

In addition to regulations in the United States, there are a variety of foreign regulations governing clinical trials and commercial sales and distribution of any product candidates. The approval process varies from country to country, and the time may be longer or shorter than that required for FDA approval.

Employees

As of December 31, 2025, we had 1 full-time employee. None of our employees is represented by a labor union and we consider our employee relations to be good. We have also retained a number of expert advisors and consultants who help navigate us through different aspects of our business.

Corporate Information

Avenue Therapeutics, Inc. was incorporated in Delaware in 2015. Our executive offices are located at 1111 Kane Concourse, Suite 301, Bay Harbor Islands, Florida 33154. Our telephone number is (781) 652-4500, and our email address is info@avenuetx.com.

We maintain a website with the address www.avenuetx.com. We make available free of charge through our website our annual reports on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K, and any amendments to these reports, as soon as reasonably practicable after we electronically file such material with, or furnish such material to, the SEC. We are not including the information on our website as a part of, nor incorporating it by reference into, this report. Additionally, the SEC maintains a website that contains annual, quarterly, and current reports, proxy statements, and other information that issuers (including us) file electronically with the SEC. The SEC's website address is http://www.sec.gov.

Item 1A. Risk Factors

Our business, financial condition, results of operations, and the industry in which we operate are subject to various risks. You should carefully consider the risks described below, in addition to the other information contained in this Form 10-K, before making an investment decision. The risks and uncertainties described below are not the only ones we face and you should not interpret the disclosure of a risk to imply that the risk has not already materialized. Additional risks not presently known to us or other factors not perceived by us to present significant risks to our business at this time also may impair our business operations.

Risks Pertaining to Our Business and Industry

We have terminated our license agreement for AJ201 with AnnJi and disposed of our equity interest in Baergic and rights to BAER101, resulting in the loss of two of our primary product candidates. As a result, our product pipeline is limited and our prospects depend heavily on our ability to identify and develop new product candidates, and on the success of third parties over whom we have no control.

As a result of the Termination and Transfer Agreement with AnnJi and the disposition of Baergic, we have lost ownership and control of AJ201 and BAER-101 (AXS-17), which together had constituted two of our primary product candidates. Accordingly, our potential future economics from AJ201 and AXS-17 now consist solely of contingent milestone and royalty payments that depend on the efforts and decisions of AnnJi and Axsome. As a result, there is significant uncertainty as to the timing and amounts to be realized from these future milestone and royalty revenue streams, if at all. These counterparties may delay, reduce the scope of, reprioritize or discontinue development or commercialization of AJ201 or AXS-17 for reasons within or outside their control, may not achieve the applicable development, regulatory or commercial milestones, or may not generate significant sales. If these milestones are not achieved, if sales of AJ201 or AXS-17 are lower than expected, if the applicable agreements are amended, terminated or disputed, or if our counterparties otherwise fail to perform their obligations, we may never realize any significant value from these arrangements.

Further, our remaining portfolio of product candidates is limited to two product candidates. Unless and until we are able to successfully identify, evaluate, in-license or acquire, and subsequently fund, develop and commercialize additional product candidates, our ability to generate revenue from internally controlled programs will be severely constrained, and our business, financial condition and prospects will be materially and adversely affected. We may not be able to identify suitable acquisition or in-licensing opportunities on acceptable terms, or at all, and even if we do, such product candidates may fail in preclinical or clinical development, experience delays, or not achieve regulatory approval or commercial success. Our limited current pipeline may also make it more difficult to attract collaboration partners, qualified personnel, and additional capital. If we are unable to build a viable pipeline of product candidates in a timely manner, our business and prospects will be materially and adversely affected.

We may need to pursue one or more strategic alternatives, which could include additional asset dispositions, mergers, business combinations, reverse mergers, joint ventures, recapitalizations, or other transactions, as well as the wind-down or liquidation of the Company. There can be no assurance that any such strategic transaction will be identified, pursued or consummated on favorable terms, or at all, or that any such transaction will enhance stockholder value. If we are unable to successfully execute our business development strategy or complete a strategic transaction, we may be required to significantly curtail, suspend or cease operations, which would have a material adverse effect on our Company.

We currently have no drug products for sale, but we are developing two drug product candidates, ATX-04 and IV tramadol. We are dependent on the success of our current or future product candidates and cannot guarantee that these product candidates will receive regulatory approval or be successfully commercialized.

We do not currently have any drug products approved for commercial sale. Accordingly, our business success depends on our ability to obtain regulatory approval for, and to successfully commercialize, market and sell our current or future product candidates, and any significant delays in obtaining approval to commercialize, market and sell our current or future product candidates will have a substantial adverse impact on our business and financial condition.

Following execution of the Termination and Transfer Agreement with AnnJi, the disposition of Baergic and the ATX-04 License with Duke, the only product candidates that we are actively developing are ATX-04 and IV tramadol. Although we may be eligible to receive future milestone payments and royalties from third parties in respect of AJ201 and AXS-17, we have no control over the development or commercialization of those product candidates. As a result, our business, financial condition and prospects currently depend primarily on the successful development, regulatory approval and commercialization of ATX-04 and IV tramadol, or the identification, acquisition and subsequent development and commercialization of additional product candidates.

The development of ATX-04 and IV tramadol is subject to the risks inherent in the development of pharmaceutical products, including unfavorable clinical results, delays in or failure to obtain regulatory approval, changes in the regulatory environment, safety or tolerability concerns, manufacturing or supply issues, competition, and challenges in obtaining adequate reimbursement and market acceptance. If ATX-04 and IV tramadol encounter significant delays, adverse clinical or regulatory outcomes, or

fail to obtain or maintain regulatory approval, or if, after approval, they fail to achieve sufficient market acceptance or generate lower than anticipated revenues, we may not have any other internally controlled product candidates to offset the resulting adverse impact on our business. In that event, our ability to continue operations, fund our activities, and realize value for our stockholders would be materially and adversely affected, and we may be forced to scale back or cease development activities, seek to in-license or acquire additional product candidates, pursue strategic alternatives, or ultimately wind down or liquidate our business.

If the applications for any of our current or future product candidates are approved, our ability to generate revenues from such product candidates will depend on our ability to:

- establish and maintain agreements with our contract manufacturers, wholesalers, distributors, and group purchasing organizations on commercially reasonable terms;
- obtain sufficient quantities of our current or future product candidates from qualified third-party manufacturers that manufacture in accordance with CGMP requirements, as required to meet commercial demand at launch and thereafter;
- hire, train, deploy, and support our sales force;
- create market demand through our own marketing and sales activities, and through any other arrangements we may later establish;
- conduct such marketing and sales activities in a manner that is compliant with federal and state laws, and any applicable foreign regulations, including restrictions on off-label promotion and anti-kickback requirements;
- obtain and maintain government and private payer reimbursement for our approved products; and
- obtain, maintain, defend and enforce patent protection and regulatory exclusivity for our current and future product candidates.

We may not receive regulatory approval for our current or future product candidates, or their approvals may be delayed, which would have a material adverse effect on our business and financial condition.

Our current product candidates, and other future product candidates and the activities associated with their development and with their commercialization, if approved, including their design, testing, manufacture, safety, efficacy, recordkeeping, labeling, storage, approval, advertising, promotion, sale, and distribution, are subject to premarket approval and comprehensive regulation by the FDA, DEA, and other regulatory agencies in the United States and potentially foreign governmental authorities. Failure to obtain marketing approval for our current or future product candidates will prevent us from commercializing such product candidates. We have not received approval to market any of our product candidates from regulatory authorities in any jurisdiction. We have only limited experience in conducting preclinical and clinical studies and filing and supporting the applications necessary to gain marketing approvals and expect to continue to rely on third party contract research organizations as well as consultants and vendors to assist us in the process. Securing marketing approval requires the submission of extensive preclinical and clinical data and supporting information to regulatory authorities for each therapeutic indication to establish the product candidate's safety and efficacy. Securing marketing approval also requires the submission of information about the product manufacturing process to, and inspection of manufacturing facilities by, the regulatory authorities.

Our current and future product candidates must meet FDA's standards for safety and efficacy, but may be determined not to be effective, to be only moderately effective, to not be safe for use in its intended population, or may prove to have undesirable or unintended side effects, toxicities, or other characteristics that may preclude our obtaining marketing approval or prevent or limit commercial use.

The process of obtaining marketing approvals, both in the United States and abroad, is expensive, may take many years if approval is granted at all, and can vary substantially based upon a variety of factors, including the type, complexity, and novelty of the product candidates involved. Changes in marketing approval policies during the development period, changes in or the enactment of additional statutes or regulations, or changes in the regulatory review process for each submitted product application, may cause delays in the approval or rejection of an application. Regulatory authorities have substantial discretion in the approval process and may refuse to accept any application or may decide that our data is insufficient for approval and require additional preclinical studies or clinical trials. In addition, varying interpretations of the data obtained from preclinical and clinical testing could delay, limit, or prevent marketing approval of a product candidate. Any marketing approval we ultimately obtain may be limited or subject to restrictions or post-approval commitments that render the approved product not commercially viable.

If we experience delays in obtaining approval or if we fail to obtain approval of any of our current or future product candidates, the commercial prospects for such product candidates may be harmed and our ability to generate revenue will be materially impaired, thereby negatively impacting our business, financial condition, and results of operations.

In addition, even if we were to obtain approval, the approval of the indication for any of our current or future product candidates by such regulatory authorities may, among other things, be more limited than we request. Such regulatory authorities may not approve the price we intend to charge for our product, may grant approval contingent on the performance of costly post-marketing clinical trials, or may approve a product candidate with a label that does not include the labeling claims necessary or desirable for the successful commercialization of that product candidate. These regulatory authorities may also require the label to contain warnings, contraindications, or precautions that limit the commercialization of that product. Our third-party suppliers may be subject to inspections by the FDA that identifies deficiencies in their manufacturing facilities and concludes they are not operating in compliance with CGMP requirements, which in turn, may force us to identify, qualify, and rely upon additional suppliers. Any of these scenarios could compromise the commercial prospects for our current or future product candidates.

If serious adverse or unacceptable side effects are identified during the development of our current or future product candidates, we may need to abandon or limit our development of some of our current or future product candidates.

If our current or future product candidates are associated with undesirable side effects in clinical trials or have characteristics that are unexpected, we may need to abandon their development or limit 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. In our industry, many compounds that initially showed promise in early-stage testing have later been found to cause undesirable side effects that prevented further development of the compound. In the event that our preclinical or clinical trials reveal a high and unacceptable severity and prevalence of side effects, our trials could be delayed, suspended, or terminated and the FDA or comparable foreign regulatory authorities could order us to cease further development or deny approval of our current or future product candidates for any or all targeted indications. The FDA could also issue a letter requesting additional data or information prior to making a final decision regarding whether or not to approve a product candidate. The number of requests for additional data or information issued by the FDA in recent years has increased and resulted in substantial delays in the approval of several new drugs. Undesirable side effects caused by our current or future product candidates could also result in the inclusion of serious risk information in our product labeling, application of burdensome post-market requirements, or the denial of regulatory approval by the FDA or other regulatory authorities for any or all targeted indications, and in turn, prevent us from commercializing and generating revenues from the sale of our current or future product candidates. Drug-related side effects could affect patient recruitment or the ability of enrolled patients to complete the trial and could result in potential product liability claims.

Additionally, if one or more of our current or future product candidates receives marketing approval, and we or others later identify undesirable adverse events caused by this product, a number of potentially significant negative consequences could result, including:

- regulatory authorities may require the addition of serious risk-related labeling statements, specific warnings, precautions, contraindications, or limitations of use;
- regulatory authorities may suspend or withdraw their approval of the product, or require the suspension of manufacturing or the recall of the product from the market;
- regulatory authorities may require implementation of burdensome post-market risk mitigation strategies and practices;
- we may be required to change the way the product is administered, conduct additional clinical trials, or change the labeling of the product; or
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining marketing approval and market acceptance of our current or future product candidates or could substantially increase our development and commercialization costs and expenses, which in turn could delay or prevent us from generating significant revenues from its sale.

We may not be able to manage our business effectively if we are unable to attract and retain key personnel.

We may not be able to attract or retain qualified management and commercial, scientific and clinical personnel in the future due to the intense competition for qualified personnel among biotechnology, pharmaceutical and other businesses. If we are not able to attract and retain necessary personnel to accomplish our business objectives, we may experience constraints that will significantly impede the achievement of our development objectives, our ability to raise additional capital, and our ability to implement our business strategy, any of which may have a material adverse effect on our business, financial condition, and results of operations.

Our employees, consultants, or third-party partners may engage in misconduct or other improper activities, including those that result in noncompliance with certain regulatory standards and requirements, which could have a material adverse effect on our business.

We are exposed to the risk of employee fraud or other misconduct. Misconduct by employees, consultants, or third-party partners could include intentional failures to comply with FDA regulations, provide accurate information to the FDA, comply with manufacturing standards we have established, comply with federal and state healthcare fraud and abuse laws and regulations or comparable applicable foreign laws and regulations, report financial information or data accurately, or disclose unauthorized activities to us. In particular, sales, marketing, and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, kickbacks, self-dealing, and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs, and other business arrangements. Employee, consultant, or third-party misconduct could also involve the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation, as well as civil and criminal liability. The precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, financial condition, and results of operations, including the imposition of significant fines or other civil and/or criminal sanctions.

If we fail to comply with environmental, health, and safety laws and regulations, we could become subject to fines or penalties or incur costs that could harm our business.

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

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

In addition, we may incur substantial costs in order to comply with current or future environmental, health, and safety laws and regulations, including climate-related initiatives. These current or future laws and regulations may impair our research, development, or production efforts. Our failure to comply with these laws and regulations also may result in substantial fines, penalties, or other sanctions.

The use of artificial intelligence in the healthcare industry and challenges with properly managing its use could adversely affect our business.

We may incorporate artificial intelligence ("AI") solutions into our business, and applications of AI may become important in our operations over time. Our competitors or other third parties may incorporate AI into their businesses more quickly or more successfully than us, which could impair our ability to compete effectively and adversely affect our results of operations. There are also significant risks involved in developing and deploying AI, and there can be no assurance that the usage of AI will enhance the development of our current or future product candidates or be beneficial to our business, including our efficiency or profitability. For example, any AI-related efforts, particularly those related to generative AI, could subject us to risks related to harmful content, inaccuracies, bias, discrimination, intellectual property infringement or misappropriation, defamation, data privacy, cybersecurity, and sanctions and export controls, among others. It is also uncertain how various laws will apply to content generated by AI. We are subject to the risks of new or enhanced governmental or regulatory scrutiny, litigation, or other legal liability, ethical concerns, negative consumer perceptions as to automation and AI, or other complications that could adversely affect our business, reputation, or financial results.

AI's rapid development is the subject of evolving review by various U.S. governmental and regulatory agencies, and other foreign jurisdictions are applying, or are considering applying, their intellectual property, cybersecurity, data protection and other laws to AI, and/or are considering general legal frameworks on AI. We may not be able to timely comply with these frameworks and, if such regulatory actions are contrary to our use of AI, would require us to expend our limited resources to adjust our use accordingly.

We are a "smaller reporting company" and the reduced disclosure requirements applicable to smaller reporting companies may make our common stock less attractive to investors.

We are a smaller reporting company, and we will remain a smaller reporting company until the fiscal year following the determination that our voting and non-voting common equity held by non-affiliates is more than $250 million measured on the last business day of our second fiscal quarter, or our annual revenues are more than $100 million during the most recently completed fiscal year and our voting and non-voting common equity held by non-affiliates is more than $700 million measured on the last business day of our second fiscal quarter. Smaller reporting companies are allowed to provide simplified executive compensation disclosure, are exempt from the auditor attestation requirements of the Sarbanes-Oxley Act, and have certain other reduced disclosure obligations, including, among other things, being required to provide only two years of audited financial statements and not being required to provide selected financial data, supplemental financial information, or risk factors.

We have elected to take advantage of certain of the reduced reporting obligations. We cannot predict whether investors will find our common stock less attractive if we rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be reduced or more volatile.

Certain of our directors currently serve, and in the past, certain officers and directors have served, in similar roles with our parent company, affiliates, related parties, and other parties with whom we transact business; ongoing and future relationships and transactions between these parties could result in conflicts of interest.

We sometimes share directors and/or officers with certain of our parent company, affiliates, related parties, or other companies with which we transact business, and such arrangements could create conflicts of interest in the future, including with respect to the allocation of corporate opportunities. While we believe that we have put in place policies and procedures to identify such conflicts, and that any existing agreements that may give rise to such conflicts and any such policies or procedures, were negotiated at arm's length in conformity with fiduciary duties, such conflicts of interest may nonetheless arise. The existence and consequences of such potential conflicts could expose us to lost profits, claims by our investors and creditors, and harm to our business, financial condition, and results of operations.

Risks Pertaining to Our Finances

We have incurred significant losses since our inception. We expect to incur losses for the foreseeable future, and may never achieve or maintain profitability.

We have a limited operating history. We have focused primarily on in-licensing and developing IV tramadol, AJ201 until April 2025, and until November 2025, BAER-101, with the goal of supporting regulatory approval. We have incurred losses since our inception in February 2015.

These losses, among other things, have had and will continue to have an adverse effect on our stockholders' equity and working capital. We expect to continue to incur significant operating losses for the foreseeable future. We also do not anticipate that we will achieve profitability for a period of time after generating material revenues, if ever. If we are unable to generate revenues, we will not become profitable and may be unable to continue operations without continued funding. Because of the numerous risks and uncertainties associated with developing pharmaceutical products, we are unable to predict the timing or amount of increased expenses or when or if, we will be able to achieve profitability. In addition, the Company cannot be certain that additional funding will be available on acceptable terms, or at all.

Our net losses may fluctuate significantly from quarter to quarter and year to year. We anticipate that our expenses will increase substantially if:

- any of our current or future product candidates are approved for commercial sale, due to the necessity in establishing adequate commercial infrastructure to launch such candidate or candidates without substantial delays, including hiring sales and marketing personnel, and contracting with third parties for warehousing, distribution, cash collection and related commercial activities;
- we are required by the FDA, and/or other foreign regulatory authorities, to perform studies in addition to those currently expected;
- there are any delays in completing our clinical trials or the development of any of our current or future product candidates;
- we execute other collaborative, licensing, or similar arrangements and the timing of payments we may make or receive under these arrangements;
- there are variations in the level of expenses related to our future development programs;
- there are any product liability or intellectual property infringement lawsuits in which we may become involved; and
- there are any regulatory developments affecting our current or future product candidates or the product candidates of our competitors.

Our ability to become profitable depends upon our ability to generate revenue. To date, we have not generated any revenue from our development stage products, and we do not know when, or if, we will generate any revenue.

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

- obtain regulatory approval for our current or future product candidates that we may license or acquire;
- manufacture commercial quantities of our current or future product candidates or other product candidates, if approved, at acceptable cost levels; and
- develop a commercial organization and the supporting infrastructure required to successfully market and sell our current or future product candidates, if approved.

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 would depress our value and could impair our ability to raise capital, expand our business, maintain our research and development efforts, diversify our product offerings or even continue our operations, which would have a material adverse effect on our business, financial condition, cash flows, and results of operations and could cause the market value of our securities to decline. A decline in our value could also cause you to lose all or part of your investment.

Our operating history makes it difficult to evaluate our business and prospects.

We were incorporated on February 9, 2015, and we have not yet demonstrated an ability to successfully obtain regulatory approvals, manufacture a commercial scale product, or arrange for a third party to do so on our behalf, or conduct sales and marketing activities necessary for successful product commercialization. Consequently, any predictions about our future performance may not be as accurate as they could be if we had a history of successfully developing and commercializing pharmaceutical products.

In addition, as a young business, we may encounter unforeseen expenses, difficulties, complications, delays, and other known and unknown factors. We will need to expand our capabilities to support development and commercial activities. We may not be successful in adding such capabilities.

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

There is substantial doubt about our ability to continue as a going concern, which may hinder our ability to obtain future financing.

Our audited consolidated financial statements as of December 31, 2025 have been prepared under the assumption that we will continue as a going concern for the next twelve months. As of December 31, 2025, we had cash and cash equivalents of $2.9 million and an accumulated deficit of $105.5 million. As a result of our financial condition and other factors described herein, there is substantial doubt about our ability to continue as a going concern. Our ability to continue as a going concern will depend on our ability to successfully identify, evaluate, in-license or acquire, and subsequently develop and commercialize additional product candidates and obtain additional funding, as to which no assurances can be given. We continue to analyze various alternatives, including potentially obtaining lines of credit, debt or equity financings, or other arrangements, including the sale or out-licensing of one or more of our product candidates. Our future success depends on our ability to raise capital and/or implement the various strategic alternatives discussed above. We cannot be certain that these initiatives or raising additional capital, whether through selling additional debt or equity securities or obtaining a line of credit or other loan, will be available to us or, if available, will be on terms acceptable to us. If we issue additional securities after the closing of this offering to raise funds, these securities may have rights, preferences, or privileges senior to those of our common stock, and our current shareholders may experience dilution. If we are unable to obtain funds when needed or on acceptable terms, we may be required to curtail our current development programs, cut operating costs, forego future development and other opportunities, or even terminate our operations.

We do not have any products that are approved for commercial sale and therefore do not expect to generate any revenues from product sales in the foreseeable future, if ever.

We have not generated any product related revenues to date. To obtain revenues from sales of our current or future product candidates, we must succeed, either alone or with third parties, in developing, obtaining regulatory approval for, manufacturing, and marketing products with commercial potential. We may never succeed in these activities, and we may not generate sufficient revenues to continue our business operations or achieve profitability.

We will require substantial additional funding, which may not be available to us on acceptable terms, or at all. If we fail to raise the necessary additional capital, we may have to delay, reduce, or eliminate our product development programs or commercialization efforts.

Our operations have consumed substantial amounts of cash since inception. We expect to significantly increase our spending to advance the clinical development and potential regulatory approval of our current or future product candidates and launch and commercialize any additional product candidates for which we receive regulatory approval, including building our own commercial organizations to address certain markets. Even after the completion of future offerings, we may require additional capital for the further development and potential commercialization of our current or future product candidates, as well as to fund our other operating expenses and capital expenditures, and cannot provide any assurance that we will be able to raise funds to complete the development of our products.

We cannot be certain that additional funding will be available on acceptable terms, or at all. If we are unable to raise additional capital in sufficient amounts or on terms acceptable to us, we may have to significantly delay, scale back, or discontinue the development or commercialization of one or more of our current or future product candidates. We may also seek collaborators for our current or future product candidates at an earlier stage than otherwise would be desirable or on terms that are less favorable than might otherwise be available. Any of these events could significantly harm our business, financial condition, and prospects.

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

- the potential for delays in our efforts to seek regulatory approval for our current or future product candidates, and any costs associated with such delays;
- the costs of establishing a commercial organization to sell, market, and distribute our current or future product candidates, if approved;
- the rate of progress and costs of our efforts to prepare for the submission of an NDA for any current or future product candidates that we may in-license or acquire, and the potential that we may need to conduct additional clinical trials to support applications for regulatory approval;
- the costs of filing, prosecuting, defending, and enforcing any patent claims and other intellectual property rights associated with our current or future product candidates, including any such costs we may be required to expend if our licensors are unwilling or unable to do so;
- the cost and timing of securing sufficient supplies of our current or future product candidates from our contract manufacturers in preparation for commercialization;
- the effect of competing technological and market developments;
- the terms and timing of any collaborative, licensing, co-promotion, or other arrangements that we may establish;
- if one or more of our current or future product candidates are approved, the potential that we may be required to file a lawsuit to defend our patent rights or regulatory exclusivities from challenges by companies seeking to market generic versions of one or more of our current or future product candidates; and
- the success of the commercialization of one or more of our current or future product candidates, if approved.

In order to carry out our business plan and implement our strategy, we may need to obtain additional financing and may choose to raise additional funds through strategic collaborations, licensing arrangements, public or private equity or debt financing, bank lines of credit, asset sales, government grants, or other arrangements. We cannot be sure that any additional funding, if needed, will be available on terms favorable to us or at all. Furthermore, any additional equity or equity-related financing may be dilutive to our stockholders, and debt or equity financing, if available, may subject us to restrictive covenants and significant interest costs. If we obtain funding through a strategic collaboration or licensing arrangement, we may be required to relinquish our rights to our current or future product candidates or marketing territories.

Our inability to raise capital when needed would harm our business, financial condition, and results of operations, and could cause our stock value to decline or require that we wind down our operations altogether.

Raising additional capital may cause dilution to our existing stockholders, restrict our operations, or require us to relinquish proprietary rights.

Until such time, if ever, as we can generate substantial product revenue, we expect to finance our cash needs through a combination of equity offerings, debt financings, grants, and license and development agreements in connection with any collaborations. To the extent that we raise additional capital through the sale of equity, instruments exercisable for 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 stockholder. Debt financing and preferred equity financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures, or declaring dividends.

If we raise additional funds through collaborations, strategic alliances, or marketing, distribution, or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs, or current or future product candidates or grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce, or terminate our product development or future commercialization efforts or grant rights to develop and market any potential product candidates that we would otherwise prefer to develop and market ourselves.

The delisting of our common stock from the Nasdaq Capital Market may continue to adversely affect the liquidity and trading price of our common stock and our ability to raise additional capital.

On March 17, 2025, The Nasdaq Stock Market LLC ("Nasdaq") notified us that it had determined to delist our common stock and that trading of our securities would be suspended at the open of trading on March 19, 2025. On July 18, 2025, Nasdaq filed a Form 25 with the United States Securities and Exchange Commission (the "SEC") to remove our common stock from listing and registration. As a result, our common stock ceased to be registered pursuant to Section 12(b) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and is now deemed registered pursuant to Section 12(g) of the Exchange Act.

The delisting of our common stock from the Nasdaq Capital Market has adversely affected, and may continue to adversely affect, the liquidity and market price of our common stock. Delisting may also impair the ability of our stockholders to sell or purchase shares of our common stock at the time and price they desire, reduce the number of investors willing or able to hold or acquire our common stock, and limit our ability to use our equity securities as consideration in strategic transactions. The delisting may also make it more difficult and more expensive for us to raise additional capital through public or private offerings of our securities. We may be required to structure any such financings on terms that are less favorable to us and more dilutive to our existing stockholders than if our common stock were still listed on a national securities exchange. If we are unable to raise capital when needed on acceptable terms, or at all, our business, financial condition and prospects could be materially and adversely affected.

The OTC Pink Open Market is a thinly traded market lacking in liquidity, which could make it difficult for our stockholders to sell their shares of common stock and/or for us to raise additional funding.

Since March 17, 2025, our common stock has been listed on the OTC Pink Open Market, an over-the-counter market, under the symbol "ATXI." The OTC Pink Open Market is a thinly traded market and lacks the liquidity of certain other public markets with which some investors may have more experience. We may not ever be able to regain satisfaction of the listing requirements for our common stock to be listed on a national securities exchange, which is often a more widely traded and liquid market. Some of the factors which may delay or prevent the re-listing of our common stock on a more widely-traded and liquid market include the following: our stockholders' equity may be insufficient; the market value of our outstanding securities may be too low; our net income from operations may be too low; our common stock may not be sufficiently widely held; we may not be able to secure market makers for our common stock; and we may fail to meet the rules and requirements mandated by the relevant exchanges and markets to have our common stock listed. Should we fail to satisfy the listing standards of a national exchange, or our common stock is otherwise rejected for listing, and remains listed on the OTC Pink Open Market or is suspended from the OTC Pink Open Market, the trading price of our common stock could suffer and be subject to increased volatility and the trading market for our common stock may be less liquid, making it difficult or impossible to sell shares of our common stock.

There is only a limited, illiquid public trading market for our common stock. There can be no assurance that a liquid market for our common stock will continue. Therefore, investors may not be able to liquidate their investment or liquidate it at a price paid by investors equal to or greater than their initial investment in our common stock. Moreover, holders of our common stock may not find purchasers for their shares should they decide to sell the common stock held by them at any particular time, if ever. Our common stock should be purchased only by investors who have no immediate need for liquidity in their investment and who can hold our common stock, possibly for a prolonged period of time.

Prior to Avenue's delisting from the Nasdaq Capital Market, our common stock had never traded on the OTC Pink Open Market. We may have more difficulty raising additional funding with our stock listed on the OTC Pink Open Market than we would if our stock were still listed and trading on the Nasdaq Capital Market.

Our stock price and trading volume on the OTC Pink Open Market is subject to price volatility unrelated to us or our operations, which could depress the market price of our common stock and result in rapid and substantial losses for our stockholders, who may lose all or part of their investment.

The OTC Pink Open Market is subject to extreme price and volume fluctuations. This volatility has had a significant effect on the market price of securities issued by many companies for reasons unrelated to their operating performance and could have the same effect on our common stock. The trading price of our common stock is volatile and could fluctuate substantially due to a variety of factors, including quarterly operating results of other companies in the same industry, changes in general conditions in the economy and the financial markets, or other developments affecting the Company's competitors. These factors and market fluctuations may materially and adversely affect the market price of our common stock. As a result, you may not be able to resell your shares at an attractive price. In addition, price volatility may be greater if the public float and trading volume of our common stock is low.

Our common stock may be considered a "penny stock" and, therefore, may be subject to certain rules that make it difficult for brokers, dealers, or investors to sell the shares.

The SEC has adopted Rule 15g-9 under the Exchange Act, which generally defines a "penny stock," for the purposes relevant to us, as any equity security that has a market price of less than $5.00 per share or an exercise price of less than $5.00 per share, subject to specific exemptions. The market price of our common stock is less than $5.00 per share and, therefore, it may be designated as a "penny stock" according to SEC rules.

This designation requires any broker or dealer selling these securities to disclose certain information concerning the transaction, obtain certain financial information from the purchaser to determine that the purchaser is reasonably suitable to purchase the securities, and obtain from the purchaser a signed written agreement reflecting the details of such determination and the purchaser's financial situation, investment experience, and investment objectives. These rules may restrict the ability of brokers or dealers to sell our common stock and may affect the ability of investors to sell their shares, and also hamper our ability to raise funds in the primary market for our shares of common stock. Generally, brokers may be less willing to execute transactions in securities subject to the "penny stock" rules. This may make it more difficult for investors to dispose of our common stock and cause a decline in the market value of our common stock.

The market for penny stocks has experienced numerous frauds and abuses, which could adversely impact investors in our common stock.

OTC Pink Open Market securities are frequent targets of fraud or market manipulation, both because of their generally low prices and because OTC Pink Open Market reporting and compliance requirements are less stringent than those of the established stock exchanges such as the Nasdaq Capital Market. Patterns of fraud and abuse include: control of the market for the security by one or a few broker-dealers that are often related to the promoter or issuer; manipulation of prices through prearranged matching of purchases and sales and false and misleading press releases; "boiler room" practices involving high pressure sales tactics and unrealistic price projections by inexperienced sales persons; excessive and undisclosed bid-ask differentials and mark-ups by selling broker-dealers; and wholesale dumping of the same securities by promoters and broker-dealers after prices have been manipulated to a desired level, along with the inevitable collapse of those prices with consequent investor losses.

Volatility in our common stock price may subject us to securities litigation.

The market for our common stock may have significant price volatility and we expect that our share price may continue to be volatile for the indefinite future. In the past, plaintiffs have often initiated securities class action litigation against a company following periods of volatility in the market price of its securities. We have been and may, in the future, be the target of such litigation. Securities litigation could result in substantial costs and liabilities and could divert management's attention and resources.

Risks Pertaining to Reliance on Third Parties

If any of our current or future product candidates are approved and our contract manufacturers fail to produce the products in the volumes that we require on a timely basis, to produce the products according to the applicable quality standards and requirements, or to comply with stringent regulations applicable to pharmaceutical drug manufacturers, we may face delays in the commercialization of that product candidate, if approved, lose potential revenues, or be unable to meet market demand.

The manufacture of pharmaceutical products requires significant expertise and capital investment, including the development of advanced manufacturing techniques and process controls, and the use of specialized processing equipment. We have entered into a development and supply agreement for the completion of pre-commercialization manufacturing development activities and the manufacture of commercial supplies of IV tramadol. Any termination or disruption of this relationship may materially harm our business and financial condition, and impact any commercialization efforts for this product candidate.

In order to meet anticipated demand for IV tramadol, if this product candidate is approved, we currently have one manufacturer to provide us clinical and commercial supply of IV tramadol in accordance with the CGMP requirements. We also may plan to qualify a backup manufacturer, in order to ensure an alternative source and to mitigate any potential supply issues. Failure to secure such sources could have a material adverse effect on our ability to pursue our product candidates.

All of our contract manufacturers must comply with strictly enforced federal, state and, where applicable, foreign regulations, including CGMP requirements enforced by the FDA through its inspectional authority over facilities under the Federal Food Drug and Cosmetics Act (the "FDCA"), as well as requirements for controlled substance handling and security requirements enforced by DEA, and while we exercise oversight of our suppliers, we have limited direct control over their compliance with these regulations, as reflected in day-to-day operations. Any failure to comply with applicable regulations may result in fines and civil penalties, suspension of production, suspension or delay in product approval, product seizure or recall, or withdrawal of product approval, and would limit the availability of our current or future product candidates, if approved. Any quality or compliance issue, manufacturing defect, or error discovered after products have been produced and distributed could result in even more significant consequences, including costly recall procedures, re-stocking costs, damage to our reputation, and potential for product liability claims.

If the commercial manufacturers upon whom we rely to manufacture our current or future product candidates fail to deliver sufficient commercial quantities on a timely basis, at commercially reasonable prices, we would likely be unable to meet demand for any current or future product candidates for which we obtain regulatory approval, and we would lose potential revenues, which could have a material adverse effect on our business, financial condition, and results of operations.

We rely, and expect to continue to rely, on third parties to conduct our preclinical studies and clinical trials, and those third parties may not perform satisfactorily, including failing to meet deadlines for the completion of such trials or complying with applicable regulatory requirements.

We have relied on third party contract research organizations and clinical research organizations to conduct some of our preclinical studies and all of our clinical trials for IV tramadol, and any other future product candidates. We expect to continue to rely on third parties, such as contract research organizations, clinical research organizations, clinical data management organizations, medical institutions, and clinical investigators, to conduct preclinical studies and clinical trials. The agreements with these third parties might terminate for a variety of reasons, including a failure to perform by the third parties. If we need to enter into alternative arrangements, that could delay our product development activities.

Our reliance on these third parties for research and development activities will reduce our control over these activities but will not relieve us of our legal and regulatory product development responsibilities. For example, we will remain responsible for ensuring that each of our preclinical studies and clinical trials are conducted in accordance with the general investigational plan and protocols for the trial and for ensuring that our preclinical studies are conducted in accordance with good laboratory practice ("GLP"), as appropriate. Moreover, the FDA requires us to comply with standards, commonly referred to as good clinical practices ("GCPs"), for conducting, recording, and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the rights, integrity, and confidentiality of trial participants are protected. Regulatory authorities enforce these requirements through periodic inspections of trial sponsors, clinical investigators, and trial sites. If we or any of our clinical research organizations fail to comply with applicable GCPs, the clinical data generated in our clinical trials may be deemed unreliable or unacceptable, and the FDA, or comparable foreign regulatory authorities, may require us to perform additional clinical trials before approving our marketing applications. We cannot assure you that upon inspection by a given regulatory authority, such regulatory authority will determine that any of our clinical trials complies with GCP regulations. In addition, our clinical trials must be conducted using products manufactured and produced in accordance with CGMP regulations. Our failure to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process. We are also required to register certain ongoing clinical trials and post the results of completed clinical trials on a government-sponsored database, ClinicalTrials.gov, within specified timeframes. Failure to do so can result in fines, adverse publicity, and civil and criminal sanctions.

The third parties with whom we have contracted to help perform our preclinical studies or clinical trials may also have relationships with other entities, some of which may be our competitors. If these third parties do not successfully carry out their contractual duties, meet expected deadlines, or conduct our preclinical studies or clinical trials in accordance with regulatory requirements or our stated protocols, we will not be able to obtain, or may be delayed in obtaining, marketing approvals for our current or future product candidates and will not be able to, or may be delayed in our efforts to, potentially successfully commercialize our current or future product candidates, if approved.

If any of our relationships with these third-party contract research organizations or clinical research organizations terminates, we may not be able to enter into arrangements with alternative contract research organizations or clinical research organizations or do so on commercially reasonable terms. Switching or adding additional contract research organizations or clinical research organizations involves additional cost and requires extensive training and management time and focus. In addition, there is a natural transition period when a new contract research organization or clinical research organization commences work. As a result, delays could occur, which could compromise our ability to meet our desired development timelines. Though we carefully manage our relationships with our contract research organizations or clinical research organizations, there can be no assurance that we will not encounter challenges or delays in the future.

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

We do not own any manufacturing facilities or employ any manufacturing personnel. We rely, and expect to continue to rely, on third-party manufacturers to manufacture our current and future product candidates for preclinical and clinical testing, as well as for commercial manufacture, once any of our current or future product candidates receives marketing approval. This reliance on third parties increases the risk that we will not have sufficient quantities of our current or future product candidates or products for which we obtain regulatory approval or such quantities at an acceptable cost or quality, which could delay, prevent, or impair our development or potential commercialization efforts.

We may be unable to establish any agreements with such third-party manufacturers or 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, but not necessarily limited to:

- reliance on the third party for regulatory compliance and quality assurance;
- raw material or active ingredient shortages from suppliers the third party has qualified for our current or future product candidates for development and for commercialization, if approved;
- the possible breach of the manufacturing agreement by the third party;
- manufacturing delays if our third-party manufacturers give greater priority to the supply of other products over our product candidates or otherwise do not satisfactorily perform according to the terms of the agreement between us;
- the possible misappropriation of our proprietary information, including our trade secrets and know-how; and
- the possible termination or nonrenewal of the agreement by the third party at a time that is costly or inconvenient for us.

The facilities used by our contract manufacturers to manufacture our current or future product candidates are subject to registration requirements, and inspection by the FDA. A pre-approval inspection may be conducted after the submission of an application to the FDA. Although we will have oversight over our suppliers and manufacturers, we do not directly control the manufacturing operations and processes at these facilities, and therefore, rely on our contract manufacturers to ensure full compliance with CGMP regulations with respect to the day-to-day operations related to the manufacture of our current or future product candidates. Third-party manufacturers may, following an inspection, be subject to a Form FDA-483 or similar inspectional findings, or a Warning or Untitled Letter, or may not otherwise be able to comply with the CGMP regulations or similar regulatory requirements outside the United States. The failure of our third-party manufacturers to comply with applicable regulations directly impacts our compliance and could result in sanctions being imposed on us, including clinical holds, fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, license revocation, 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.

Any product candidates that we may develop and commercialize, if approved, may compete with other product candidates and products for access to manufacturing facilities. There may be a limited number of manufacturers that both operate under CGMP regulations and are capable of manufacturing for us. Any performance failure on the part of our existing or future manufacturers could delay clinical development or marketing approval. We do not currently have arrangements in place for redundant supply or a second source for bulk drug substance. If our current contract manufacturers cannot perform as agreed, we may be required to replace such manufacturers. We may incur added costs and delays in identifying and qualifying any replacement manufacturers.

The DEA restricts the importation of a controlled substance finished drug product when the same substance is commercially available in the United States, which could reduce the number of potential alternative manufacturers for IV tramadol.

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

We also expect to rely on other third parties to store and distribute drug supplies for our clinical trials. Any performance failure on the part of our distributors could delay clinical development or marketing approval of our current or future product candidates or potential commercialization of our products, producing additional losses and depriving us of potential product revenue.

We rely on clinical data and results obtained by third parties that could ultimately prove to be inaccurate, unreliable, or unacceptable to regulatory authorities.

As part of our strategy to mitigate development risk, we seek to develop product candidates with a validated mechanism of action, and we utilize biomarkers to assess potential clinical efficacy early in the development process. This strategy necessarily relies upon clinical data and other results obtained by third parties that may ultimately prove to be inaccurate, unreliable, or unacceptable to regulatory authorities. Further, such clinical data and results may be based on products or product candidates that are significantly different from our current or future product candidates. If the third-party data and results we rely upon prove to be inaccurate, unreliable, not acceptable by regulatory authorities, or not applicable to our current or future product candidates, we could make inaccurate assumptions and conclusions about such product candidates and our research and development efforts could be compromised and called into question during the review or any marketing applications we submit.

Risks Pertaining to Regulatory Approval Process

The making, use, sale, importation, exportation, and distribution of controlled substances are subject to regulation by state, federal, and foreign law enforcement and other regulatory agencies.

Controlled substances are subject to state, federal and foreign laws and regulations regarding their manufacture, use, sale, importation, exportation, and distribution. Controlled substances are regulated under the Federal Controlled Substances Act of 1970 ("CSA") and regulations of the DEA. IV tramadol, which we currently have under development, will be subject to these regulations.

The DEA regulates controlled substances as Schedule I, II, III, IV, or V substances. Schedule I substances by definition have a high potential for abuse and no established medicinal use and may not be marketed or sold in the United States. A pharmaceutical product may be listed as Schedule II, III, IV, or V, with Schedule II substances considered to present the highest risk of abuse and Schedule V substances the lowest relative risk of abuse among such substances.

Various states also independently regulate controlled substances. Though state-controlled substances laws often mirror federal law, because the states are separate jurisdictions, they may separately schedule drugs as well. While some states automatically schedule a drug when the DEA does so, in other states there must be rulemaking or a legislative action. State scheduling may delay commercial sale of any controlled substance drug product for which we obtain federal regulatory approval and adverse scheduling could impair the commercial attractiveness of such product. We or our collaborators must also obtain separate state registrations in order to be able to obtain, handle, and distribute controlled substances for clinical trials or commercial sale, and failure to meet applicable regulatory requirements could lead to enforcement and sanctions from the states in addition to those from the DEA or otherwise arising under federal law.

For any of our current or future product candidates classified as controlled substances, we and our suppliers, manufacturers, contractors, customers, and distributors are required to obtain and maintain applicable registrations from state, federal, and foreign law enforcement and regulatory agencies and comply with state, federal, and foreign laws and regulations regarding the manufacture, use, sale, importation, exportation, and distribution of controlled substances. There is a risk that DEA regulations may limit the supply of the compounds used in clinical trials for our current or future product candidates and the ability to produce and distribute our products for which we obtain regulatory approval in the volume needed to both meet commercial demand and build inventory to mitigate possible supply disruptions.

Regulations associated with controlled substances govern manufacturing, labeling, packaging, testing, dispensing, production and procurement quotas, recordkeeping, reporting, handling, shipment, and disposal. These regulations increase the personnel needs and the expense associated with development and commercialization of product candidates including controlled substances. The DEA, and some states, conduct periodic inspections of registered establishments that handle controlled substances. Failure to obtain and maintain required registrations or comply with any applicable regulations could delay or preclude us from developing and commercializing our current or future product candidates, if approved, containing controlled substances and subject us to enforcement action. The DEA may seek civil penalties, refuse to renew necessary registrations, or initiate proceedings to revoke those registrations. In some circumstances, violations could lead to criminal proceedings. Because of their restrictive nature, these regulations could limit commercialization of any of our current or future product candidates, if approved, that are classified as controlled substances, which would have a material adverse effect on our business, financial condition, cash flows and results of operations, and could cause the market value of our securities to decline.

If the DEA decides to reschedule tramadol from a Schedule IV controlled substance to a more restrictive Schedule, IV tramadol could lose its competitive advantage associated with having less burdensome regulatory requirements, and our related clinical development and regulatory approval could be delayed or prevented and, if approved, we could be subject to additional security requirements and quota system controls.

In July 2014, the DEA classified tramadol as a Schedule IV controlled substance. In comparison, other opioids are classified by the DEA as Schedule II controlled substances. The regulatory burden associated with Schedule II drugs is substantially greater than that associated with Schedule IV drugs. If approved, IV tramadol will be the only intravenous Schedule IV opioid on the market. However, in the current environment where the opioid epidemic is a recognized problem in the United States, there is a possibility that the DEA could reschedule tramadol to a more restrictive classification (Schedule II or III). Such a rescheduling, or other similar action by DEA, would severely impair IV tramadol's current competitive advantage over traditional opioids based on the less burdensome regulatory requirements and may affect our ability to potentially market IV tramadol. It could also delay or prevent clinical development and regulatory approval and, if approved, subject us to additional security requirements and quota system controls.

We may not receive regulatory approval for IV tramadol, or our approval may be significantly delayed due to scientific or regulatory reasons.

We continue to pursue regulatory approval for IV tramadol. However, in light of recently disclosed developments, there is doubt about our ability to obtain regulatory approval for IV tramadol. In December 2019, we submitted an NDA for IV tramadol and received the First CRL from the FDA in October 2020. In February 2021, we resubmitted the NDA for IV tramadol. The FDA assigned a PDUFA goal date of April 12, 2021 for the resubmitted NDA for IV tramadol. On June 14, 2021, we announced that we had received the Second CRL from the FDA regarding our NDA for IV tramadol. We submitted an FDRR with the Office of Neuroscience of the FDA on July 27, 2021. On August 26, 2021, we received an Appeal Denied Letter from the Office of Neuroscience of the FDA in response to the FDRR submitted on July 27, 2021. On August 31, 2021, we submitted an FDRR with the Office of New Drugs of the FDA. On October 21, 2021, we received a written response from the Office of New Drugs of the FDA stating that the OND needs additional input from an Advisory Committee in order to reach a decision on the FDRR. On February 15, 2022, we had our Advisory Committee meeting with the FDA. In the final part of the public meeting, the Advisory Committee voted yes or no on the following question: "Has the Applicant submitted adequate information to support the position that the benefits of their product outweigh the risks for the management of acute pain severe enough to require an opioid analgesic in an inpatient setting?" The results were 8 yes votes and 14 no votes. On March 18, 2022, we received an Appeal Denied Letter from the Office of New Drugs in response to the FDRR.

Following the receipt of the Appeal Denied Letter, we submitted a Type A Meeting Request and related briefing document to the FDA on June 17, 2022. The meeting was granted by the DAAAP on June 27, 2022, and scheduled for August 9, 2022. We submitted a briefing document presenting a study design that we believe has the potential to address the concerns around the safety risk of IV tramadol in combination with other opioid analgesics for the management of moderate-to-moderately-severe pain in adults in a medically supervised healthcare setting that was discussed in detail at the previously disclosed Advisory Committee meeting on February 15, 2022 and in the Appeal Denied letter received on March 18, 2022.

The meeting on August 9, 2022 was a collaborative discussion on the study design and following the meeting, we incorporated the FDA's suggestions from the meeting minutes and submitted a detailed study protocol that could form the basis for the submission of a complete response to the Second CRL.

Following the Type A Meeting, we submitted a request to the FDA and were granted a Type C Meeting to discuss a proposed study protocol to assess the risk of respiratory depression related to opioid stacking on IV tramadol relative to an approved opioid analgesic. In January 2024, we announced that we reached final agreement with the FDA on the Phase 3 safety study protocol and statistical analysis approach, including the primary endpoint, for IV tramadol.

We are currently evaluating the feasibility of the Phase 3 safety study. The initiation of the study is subject to the Company obtaining the necessary financing or partnership. If the FDA does not approve, or significantly delays the approval of, IV tramadol, or if we are unable to obtain the necessary financing, it could cause a material adverse effect on our business, financial condition, and results of operations.

Even if one or more of our current or future product candidates receives regulatory approval, which may not occur, it will remain subject to substantial regulatory scrutiny.

Our current product candidate and any other product candidates we may license or acquire will also be subject to ongoing regulatory and compliance requirements, including regular inspections by the FDA and other regulatory authorities, following any such approval. These requirements relate to, among others, labeling, packaging, storage, advertising, promotion, record-keeping and submission of safety and other post-market information and reports, registration and listing requirements, ongoing CGMP requirements relating to manufacturing, quality control, quality assurance and corresponding maintenance of records and documents, requirements regarding the distribution of samples to physicians and recordkeeping of the drug.

The FDA, and/or other regulatory authorities, may also impose requirements for costly post-marketing studies or clinical trials and surveillance programs to monitor the safety or efficacy of the products. The FDA and other regulatory authorities closely regulate the post-approval marketing and promotion of drugs to ensure drugs are marketed only for the approved indications and in accordance with the approved labeling. The FDA and other regulatory authorities impose stringent restrictions on manufacturers' communications regarding off-label use and off-label information and if we market any of our approved products for uses other than their approved indications and on-label information, we may be subject to enforcement action for off-label marketing as well as false claims liability. Violations of the FDCA relating to the promotion of prescription drugs may lead to investigations, civil claims, and/or criminal charges alleging violations of federal and state health care fraud and abuse laws, as well as state consumer protection laws.

In addition, later discovery of previously unknown adverse events or other problems with our product, manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may yield various results, including:

- restrictions on such product, operations, manufacturers, or manufacturing processes;
- restrictions or new requirements related to the promotion, labeling, or marketing of a product;
- restrictions on product distribution or use, including import and export restrictions;
- requirements to conduct post-marketing studies or clinical trials;
- Form FDA-483 findings, warning letters, or untitled letters;
- recall of the product, or withdrawal of the product from the market;
- refusal to approve pending applications or supplements to approved applications that we submit;
- fines, restitution, or disgorgement of profits;
- suspension or withdrawal of marketing or regulatory approvals;
- suspension of any ongoing clinical trials;
- refusal to permit the import or export of our product;
- product seizure; or
- injunctions or the imposition of civil or criminal penalties.

The FDA's policies, as well as policies of the DEA, which has jurisdiction over controlled substances and opioids, including IV tramadol, may change and additional government regulations may be enacted that could prevent, limit, or delay regulatory approval of our product candidate. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained. We do not know what impact any changes made by the U.S. government will have on our business. Such actions may impact the development and commercialization of drug products and could materially harm our business and financial condition.

We will need to obtain FDA approval of any proposed product brand names, and any failure or delay associated with such approval may adversely impact our business.

A pharmaceutical product candidate cannot be marketed in the United States or many other countries until we have completed a rigorous and extensive regulatory review processes, including obtaining the approval of a brand name. Any brand names we intend to use for our current or future product candidates will require approval from the FDA regardless of whether we have secured a formal trademark registration from the U.S. Patent and Trademark Office (the "USPTO"). The FDA typically conducts a review of proposed product brand names, including an evaluation of potential for confusion with other product names. The FDA may also object to a product brand name if it believes the name inappropriately implies medical claims. If the FDA objects to any of our proposed product brand name, we may be required to adopt an alternative brand name for our product candidate. If we have to adopt an alternative brand name, we would lose the benefit of our existing trademark applications for such product candidate and may be required to expend significant additional resources in an effort to identify a suitable product brand name that would qualify under applicable trademark laws, not infringe the existing rights of third parties, and be acceptable to the FDA. We may be unable to build a successful brand identity for a new trademark in a timely manner, or at all, which would limit our ability to potentially commercialize our product candidate, if approved.

Our current and future relationships with customers and third-party payors in the United States and elsewhere may be subject, directly or indirectly, to applicable anti-kickback, fraud and abuse, false claims, transparency, health information privacy and security and other healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, contractual damages, reputational harm, administrative burdens, and diminished profits and future earnings.

Healthcare providers, physicians, and third-party payors in the United States and elsewhere will play a primary role in the recommendation and prescription of any product candidates for which we obtain marketing approval. Our future arrangements with third-party payors, distributors, retailers, marketers, and customers may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations, including, without limitation, the federal Anti-Kickback Statute, the federal False Claims Act, and similar state or foreign laws, which may constrain the business or financial arrangements and relationships through which we sell, market, and distribute any product candidates for which we obtain marketing approval. In addition, we may be subject to transparency laws and patient privacy regulation by U.S. federal and state governments and by governments in foreign jurisdictions in which we conduct our business. The applicable federal, state, and foreign healthcare laws and regulations that may affect our ability to operate include, but are not necessarily limited to:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons from knowingly and willfully soliciting, offering, receiving, or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made under federal and state healthcare programs, such as Medicare and Medicaid;

- federal civil and criminal false claims laws and civil monetary penalty laws, including the federal False Claims Act, which impose criminal and civil penalties, including civil whistleblower or qui tam actions, against individuals or entities for knowingly presenting, or causing to be presented, to the federal government, including the Medicare and Medicaid programs, claims for payment that are false or fraudulent, making a false statement to avoid, decrease, or conceal an obligation to pay money to the federal government, or the knowing retention of an overpayment from government health care programs;

- the federal Health Insurance Portability and Accountability Act of 1996 (“HIPAA”), which imposes criminal and civil liability for executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters;

- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009 ("HITECH"), and their respective implementing regulations, which impose obligations on covered healthcare providers, health plans, and healthcare clearinghouses, as well as their business associates that create, receive, maintain, or transmit individually identifiable health information for or on behalf of a covered entity, with respect to safeguarding the privacy, security, and transmission of individually identifiable health information;

- the federal Open Payments program, which requires manufacturers of certain 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 (“CMS”), information related to “payments or other transfers of value” made to physicians, which is defined to include doctors, dentists, optometrists, podiatrists, chiropractors, physician assistants, nurse practitioners, clinical nurse specialists, certified nurse anesthetists, certified nurse-midwives, and certain teaching hospitals and applicable manufacturers to report annually to CMS ownership and investment interests held by the physicians and their immediate family members;

- U.S. Foreign Corrupt Practices Act (“FCPA”), which prohibit us and third parties working on our behalf from making payments to foreign government officials to assist in obtaining or retaining business. Specifically, the anti- bribery provisions of the FCPA prohibit the willful use of the mails or any means of instrumentality of interstate commerce corruptly in furtherance of any offer, payment, promise to pay, or authorization of the payment of money or anything of value to any person, while knowing that all or a portion of such money or thing of value will be offered, given or promised, directly or indirectly, to a foreign official to influence the foreign official in his or her official capacity, induce the foreign official to do or omit to do an act in violation of his or her lawful duty, or to secure any improper advantage in order to assist in obtaining or retaining business for or with, or directing business to, any person; enforcement actions may be brought by the Department of Justice or the SEC; legislation has expanded the SEC’s power to seek disgorgement in all FCPA cases filed in federal court and extended the statute of limitations in SEC enforcement actions in intent-based claims, such as those under the FCPA, from five years to ten years; and

- analogous state and foreign laws and regulations, such as state anti-kickback and false claims laws, which may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third party payors, including private insurers; state and foreign 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; state and foreign laws that require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures; and state and foreign laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Efforts to ensure that our business arrangements with third parties will comply with applicable healthcare laws and regulations may involve 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 civil, criminal, and administrative penalties, including, without limitation, damages, fines, imprisonment, exclusion from participation in government healthcare programs, such as Medicare and Medicaid, and the curtailment or restructuring of our operations, which could have a material adverse effect on our business. If any of the physicians or other healthcare providers or entities with whom we expect to do business, including our collaborators, is found not to be in compliance with applicable laws, it may be subject to criminal, civil, or administrative sanctions, including exclusions from participation in government healthcare programs, which could also materially affect our business, financial condition, and results of operations.

Regulatory approval for any approved product is limited by the FDA to those specific indications and conditions for which clinical safety and efficacy have been demonstrated.

Any regulatory approval is limited to the specific labeled indication(s) for which a product is deemed to be safe and effective by the FDA. In addition to the FDA approval required for new formulations, any new indication for an approved product also requires FDA approval. If we are not able to obtain FDA approval for any desired future indications for our current or future product candidates, our potential ability to effectively market and sell such product candidates may be reduced and our business may be adversely affected.

While physicians may choose to prescribe drugs for uses that are not described in the product's approved labeled indication, or for uses that differ from those tested in clinical studies, and thus the basis for approval by the regulatory authorities, our ability to promote the products is limited to those indications that are specifically approved by the FDA. These "off-label" uses are common across medical specialties and may constitute an appropriate treatment for some patients in varied circumstances. Regulatory authorities in the United States generally do not regulate the practice of medicine by physicians with respect to their choice of treatments. Regulatory authorities do, however, restrict communications by pharmaceutical companies in terms of their ability to promote off-label uses or disseminate off-label information. If our promotional activities fail to comply with these requirements, we may be subject to regulatory, compliance, or enforcement action by, these authorities. In addition, our failure to follow FDA requirements relating to promotion and advertising may result in a Warning Letter or Untitled Letter, cause the FDA to suspend or withdraw an approved product from the market, require a recall, require the issuance of corrective advertising, institute fines, or could result in disgorgement of money, operating restrictions, injunctions, or civil or criminal prosecution by the government, any of which could harm our reputation and business.

If the FDA does not conclude that a product candidate satisfies the requirements for the Section 505(b)(2) regulatory approval pathway, or if the requirements for such product candidate under Section 505(b)(2) are not as we expect, the approval pathway for the product candidate will likely take significantly longer, cost significantly more and entail significantly greater complications and risks than anticipated, and in either case may not be successful.

The Drug Price Competition and Patent Term Restoration Act of 1984, also known as the Hatch-Waxman Act, added Section 505(b)(2) to the FDCA. Section 505(b)(2) permits the filing of an NDA where at least some of the information required for approval comes from studies that were not conducted by or for the applicant and for which the applicant has not obtained a right of reference. Section 505(b)(2), if applicable to us under the FDCA, would allow an NDA we submit to FDA to rely in part on data in the public domain or the FDA's prior conclusions regarding the safety and effectiveness of approved compounds, which could expedite the development program for our current and future product candidates by potentially decreasing the amount of clinical data that we would need to generate in order to obtain FDA approval. If the FDA does not allow us to pursue the Section 505(b)(2) regulatory pathway as anticipated, we may need to conduct additional clinical trials, provide additional data and information, and meet additional standards for regulatory approval. If this were to occur, the time and financial resources required to obtain FDA approval for these product candidates, and complications and risks associated with these product candidates, would likely substantially increase. We could need to obtain additional funding, which could result in significant dilution to the ownership interests of our then existing stockholders to the extent we issue equity securities or convertible debt. We cannot assure you that we would be able to obtain such additional financing on terms acceptable to us, if at all. Moreover, inability to pursue the Section 505(b)(2) regulatory pathway would likely result in new competitive products reaching the market more quickly than our current or future product candidates, which would likely materially adversely impact our competitive position and prospects. Even if we are allowed to pursue the Section 505(b)(2) regulatory pathway, we cannot assure you that our current or future product candidates will receive the requisite approvals for commercialization in a timely manner, or at all.

In addition, notwithstanding the approval of a number of products by the FDA under Section 505(b)(2) over the last few years, certain brand-name pharmaceutical companies and others have objected to the FDA's interpretation of Section 505(b)(2). If the FDA's interpretation of Section 505(b)(2) is successfully challenged, the FDA may change its Section 505(b)(2) policies and practices, which could delay or even prevent the FDA from approving any NDA that we submit under Section 505(b)(2). In addition, the pharmaceutical industry is highly competitive, and Section 505(b)(2) NDAs are subject to special requirements designed to protect the patent rights of sponsors of previously approved drugs that are referenced in a Section 505(b)(2) NDA. These requirements may give rise to patent litigation and mandatory delays in approval of our NDAs for up to 30 months or longer depending on the outcome of any litigation. It is not uncommon for a manufacturer of an approved product to file a citizen petition with the FDA seeking to delay approval of, or impose additional approval requirements for, pending competing products. If successful, such petitions can significantly delay, or even prevent, the approval of the new product. However, even if the FDA ultimately denies such a petition, the FDA may substantially delay approval while it considers and responds to the petition. In addition, even if we are able to utilize the Section 505(b)(2) regulatory pathway, there is no guarantee this would ultimately lead to faster product development or earlier approval.

Moreover, even if our current or future product candidates are approved under Section 505(b)(2), the approval may be subject to limitations on the indicated uses for which the products may be marketed or to other conditions of approval, or may contain requirements for costly post-marketing testing and surveillance to monitor the safety or efficacy of the products.

Changes in U.S. government policy, regulation, enforcement priorities, and funding decisions could adversely affect our business, financial condition and results of operations.

There may be significant shifts in policies that directly impact the life sciences industry, including policies relating to FDA regulation and enforcement, drug approval and review processes, reimbursement and pricing (including Medicare, Medicaid and other government programs), healthcare reform, intellectual property protection, trade and tariffs, and federal research and public health funding. The administration's approach, together with actions by Congress and federal agencies such as the FDA, the USPTO, Centers for Medicare & Medicaid Services, HHS, National Institutes of Health and the Centers for Disease Control and Prevention, is inherently uncertain and may materially differ from historical norms or from our current expectations.

Potential changes may include, among others: (i) modifications to standards, procedures or timelines for the review, clearance, approval or post-market oversight of drugs; (ii) changes to policies on real-world evidence, accelerated approval, emergency use authorizations, and clinical trial requirements; (iii) reforms or restrictions affecting drug pricing, reimbursement levels, coverage decisions and formulary placement for products paid for by federal healthcare programs; (iv) increased or decreased enforcement of laws and regulations relating to manufacturing, promotion, fraud abuse, data integrity, privacy and cybersecurity; (v) changes in federal funding priorities for biomedical research and public health programs that may impact key customers, collaborators and research partners; and (vi) trade, tariff and supply-chain measures that could affect our access to critical materials, components, contract manufacturers, or international markets.

Any such actions, or uncertainty regarding potential actions, could increase development, regulatory, compliance, and commercialization costs; delay, limit or prevent the development, approval, launch or commercial success of future product candidates or marketed products; affect pricing, reimbursement and market access; disrupt our supply chain; alter the behavior and financial condition of our customers, clinical sites, collaborators and payors; and contribute to volatility in capital markets that could affect our ability to raise additional financing on acceptable terms or at all. Because we cannot predict the timing, scope, direction, or ultimate impact of policy or regulatory changes, we may not be able to anticipate or fully mitigate their effects. Any of the foregoing could materially and adversely affect our business, financial condition, and results of operations.

Risks Pertaining to the Commercialization of Product Candidates, if Approved

Any products for which we receive approval may become subject to unfavorable pricing regulations, third-party coverage and reimbursement practices or healthcare reform initiatives, which could harm our business.

Our ability to successfully commercialize any current or future product candidate that receives marketing authorization will depend in part on the extent to which coverage and reimbursement for these products and related treatments will be available from government health administration authorities, private health insurers and other organizations. Government authorities and other third-party payors, such as private health insurers and health maintenance organizations, decide which medications they will pay for and establish reimbursement levels. A primary trend in the healthcare industry in the United States and elsewhere is cost containment.

The United States and many foreign jurisdictions have enacted or proposed legislative and regulatory changes affecting the healthcare system, including implementing cost-containment programs to limit the growth of government-paid healthcare costs, including price controls, restrictions on reimbursement and requirements for substitution of generic products for branded prescription drugs. In the United States, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010 (the "Affordable Care Act"), was intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, enhance remedies against fraud and abuse, add transparency requirements for the healthcare and health insurance industries, impose new taxes and fees on the healthcare industry and impose additional health policy reforms. We expect that changes to the Affordable Care Act, the Medicare and Medicaid programs, changes allowing the federal government to directly negotiate drug prices and changes stemming from other healthcare reform measures, especially with regard to healthcare access, financing or other legislation in individual states, may result in more rigorous coverage criteria and in additional downward pressure on the price that that can be charged for drug products. In addition, on May 12, 2025, the U.S. President issued an executive order implementing the concept of most-favored nation pricing. Under this order, the U.S. Department of Health and Human Services ("HHS"), in coordination with other federal agencies, is directed to take actions to ensure that the price of prescription drugs paid by federal health insurers, including Medicare and Medicaid, is in line with the prices paid in comparably developed nations. Any reduction in reimbursement from Medicare, Medicaid, or other government programs may result in a similar reduction in payments from private payers.

The Inflation Reduction Act of 2022 (the "IRA") contains substantial drug pricing reforms, including the establishment of a drug price negotiation program within the HHS that would require manufacturers to charge a negotiated "maximum fair price" for certain selected drugs or pay an excise tax for noncompliance, the establishment of rebate payment requirements on manufacturers of certain drugs payable under Medicare Parts B and D to penalize price increases that outpace inflation, and requires manufacturers to provide discounts on Part D drugs. Orphan drugs that treat only one rare disease are exempt from the IRA's drug negotiation program. Substantial penalties can be assessed for noncompliance with the drug pricing provisions in the IRA.

As an alternative to the Affordable Care Act, the U.S. President recently announced the Great Healthcare Plan. As presented, the plan is intended to lower drug prices by increasing competition and benchmarking U.S. drug prices to other countries, reduce insurance premiums by redirecting subsidies from insurers to individuals, increase accountability and transparency from insurers, and promote consumer choice by giving individuals more direct control over how healthcare dollars are spent. Legislative and regulatory action will be required to fully implement the plan. It is unclear how these proposed changes will impact our business and the pharmaceutical industry in general.

At the state level, legislatures have increasingly passed legislation and implemented 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. Additional federal, state and foreign healthcare reform measures will be adopted in the future.

The implementation of any of the cost containment measures or other healthcare reforms discussed above may prevent us from being able to generate revenue, attain profitability or commercialize our products.

Legislative and regulatory proposals have been made to expand post-approval requirements and restrict sales and promotional activities for drugs. It is uncertain whether additional legislative changes will be enacted, or whether the FDA regulations, guidance or interpretations will be changed, or what the impact of such may be. In addition, increased Congressional scrutiny of the FDA's approval process, as well as staffing cuts effected at the FDA in early 2025, may significantly delay or prevent marketing approval, and the industry could become subject to more stringent product labeling and post-marketing testing and other requirements, any of which could have a material adverse impact on the development and commercialization of drug products.

Over the last several years, the U.S. government shut down several times and certain regulatory agencies, such as the FDA and the SEC, had to furlough critical employees and stop critical activities. If a prolonged government shutdown occurs, it could significantly impact the ability of the FDA to review and process any regulatory submissions we submit in a timely manner, which could have a material adverse effect on our business. Further, future government shutdowns could impact our ability to access the public markets and obtain necessary capital in order to properly capitalize and continue our operations.

Public concern regarding the safety of opioid drug products such as IV tramadol could delay or limit our ability to obtain regulatory approval for this product candidate, result in the inclusion of serious risk information in our labeling, negatively impact market performance, or require us to undertake other activities that may entail additional costs.

In light of widely publicized events concerning the safety risk of certain drug products, the FDA, members of Congress, the Government Accountability Office, medical professionals, and the general public have raised concerns about potential controlled substance drug safety issues. These events have resulted in the withdrawal of drug products, revisions to drug labeling that further limit use of the drug products, and the establishment of risk management programs. Under the Food and Drug Administration Amendments Act of 2007 ("FDAAA"), the FDA has authority to, among other things, require post-approval studies and clinical trials, mandate changes to drug labeling to reflect new safety information, and require risk evaluation and mitigation strategies for certain drugs, including certain currently approved drugs. The FDAAA also expanded the federal government's clinical trial registry and results databank, resulting in significantly increased government oversight of clinical trials. Under the FDAAA, companies that violate these and other provisions of the law are subject to substantial civil monetary penalties, among other regulatory, civil, and criminal penalties. The increased attention to drug safety issues may result in a more cautious approach by the FDA in its review of data from our clinical trials. Data from clinical trials may receive greater scrutiny, particularly with respect to safety, which may make the FDA or other regulatory authorities more likely to require additional preclinical studies or clinical trials. If the FDA requires us to conduct additional preclinical studies or clinical trials prior to approving IV tramadol, our ability to obtain approval of this product candidate will be delayed. If the FDA requires us to provide additional clinical or preclinical data following the approval of IV tramadol, the indications for which this product candidate is approved may be limited or there may be specific warnings or limitations on production dosing, and our efforts to commercialize IV tramadol may be otherwise adversely impacted.

Rising public, medical, Congressional, and agency concern around the prescription of controlled substance drug products to patients and a growing movement to reduce the use of opioid drug products, to develop abuse-deterrent products, and to prevent dependence also could negatively impact our ability to commercialize and generate revenue from IV tramadol if it is approved for marketing in the United States. Congress has enacted several laws intended to address opioid use disorder, including the Comprehensive Addiction and Recovery Act ("CARA") in 2016, the 21st Century Cures Act ("Cures Act") in 2016, and the Substance Use-Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities Act (the "SUPPORT Act") in 2018. These laws primarily focus on funding for treatment, research, and education, but also include provisions intended to encourage reduction in opioid use, such as funding for research on non-opioid pain treatments. Other legislative and administrative measures at the state and federal level include, or may include in the future, restrictions and limitations on opioid prescribing, limitations on opioid doses dispensed per episode of care, labeling requirements specific to opioids, limitations on FDA approval of opioids, assessment of fees against opioid manufacturers, or reimbursement disincentives specific to opioids.

If we experience delays or difficulties in the enrollment of patients in any future clinical trials, our receipt of necessary regulatory approvals could be delayed or prevented.

We may not be able to initiate any future clinical trials for any current or future product candidates if we are unable to locate and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA or similar regulatory authorities outside the United States. Some of our competitors may have ongoing clinical trials for product candidates that treat the same indications as our current or potential future product candidates, and patients who would otherwise be eligible for any future clinical trials may instead enroll in clinical trials of our competitors' product candidates. Patient enrollment is affected by other factors, including:

- the severity of the disease under investigation;
- the eligibility criteria for a study;
- the perceived risks and benefits of the product candidate under study;
- the efforts to facilitate timely enrollment in clinical trials;
- the patient referral practices of physicians;
- the ability to monitor patients adequately during and after treatment; and
- the proximity and availability of clinical trial sites for prospective patients.

Our inability to enroll a sufficient number of patients for any future clinical trials would result in significant delays and could require us to abandon any future clinical trials altogether. Enrollment delays in any future clinical trials may result in increased development costs for any current or future product candidates, which would cause the value of our company to decline and limit our ability to obtain additional financing.

We expect intense competition for our current or future product candidates, and new products may emerge that provide different or better therapeutic alternatives for our targeted indications.

The biotechnology and pharmaceutical industries are subject to rapid and intense technological change. We face, and will continue to face, competition in the development and marketing of our current or future product candidates, if approved, from academic institutions, government agencies, research institutions and biotechnology and pharmaceutical companies, including specialty and other large pharmaceutical companies, and OTC companies and generic manufacturers. There can be no assurance that developments by others will not render our current or future product candidates obsolete or noncompetitive. Furthermore, new developments, including the development of other drug technologies and methods of preventing the incidence of disease, occur in the pharmaceutical industry at a rapid pace. These developments may render one or more of our current or future product candidates obsolete or noncompetitive.

IV tramadol will compete with well-established products with similar indications. Competing products available for the management of pain include other approved opioid agonists such as morphine, hydromorphone, and fentanyl, and the recently approved sodium channel blocker Journavx (suzetrigine). In 2020, the FDA also approved OLINVYK (oliceridine), an intravenous opioid agonist for the management of moderate to severe acute pain in adults, where the pain is severe enough to require an intravenous opioid and for whom alternative treatments are inadequate. Non-opioid products include Journavx, Combogesic (combination IV acetaminophen and ibuprofen), Ofirmev (IV acetaminophen) and IV formulations of NSAIDs such as Dyloject (diclofenac), Toradol (ketorolac), Anjeso (meloxicam), and Caldolor (ibuprofen). In addition, we also expect to compete with agents such as Exparel (bupivacaine liposome injectable suspension), Zynrelef (bupivacaine and meloxicam) and Xaracoll (bupivacaine implant). In addition to approved products, there are a number of product candidates in development for the management of acute pain. In addition to reformulations and fixed-dose combination products of already available therapies, there are also several novel agents in clinical development such as LTG-001 (Latigo Biotherapeutics), LY4515100 (Eli Lilly), Halneuron Nav1.7 (Dogwood Therapeutics), and CA-008 (Concentric Analgesics).

The potential commercial opportunity for our current or future product candidates could be significantly harmed if competitors are able to develop alternative formulations outside the scope of our in-licensed patents. Compared to us, many of our potential competitors have substantially greater:

- capital resources;
- development resources, including personnel and technology;
- clinical trial experience;
- regulatory experience;
- expertise in prosecution of intellectual property rights; and
- manufacturing, distribution, and sales and marketing experience.

As a result of these factors, our competitors may obtain regulatory approval of their products more rapidly than we are able to or may obtain patent protection or other intellectual property rights that limit our ability to develop or potentially commercialize our current or future product candidates. Our competitors may also develop drugs that are more effective, safe, useful, and less costly than ours and may be more successful than us in manufacturing and marketing their products. If we are unable to compete effectively, our business, our business prospects, results of operations, financial condition, or cash flows may be materially adversely affected.

We face substantial competition from other pharmaceutical and biotechnology companies, many of which have significantly greater resources than we do.

The development and commercialization of drugs is highly competitive. We face, and will continue to face, competition from large pharmaceutical and biotechnology companies, specialty pharmaceutical companies, and academic and research institutions for our current and future product candidates. Many of these competitors have significantly greater financial, technical, regulatory, manufacturing, marketing, and human resources than we do, and may be better positioned to discover, develop, obtain regulatory approval for, and market competing products. Competitors may also obtain FDA or other regulatory approval for their products more rapidly than we obtain approval for our current or future product candidates, which could result in our competitors establishing a strong market position before we are able to enter the market. Additionally, we compete with these organizations for enrollment in clinical trials, as well as for qualified personnel and third-party collaboration or licensing opportunities.

If the government or third-party payors fail to provide adequate coverage and payment rates for our current or future product candidates, if approved, or if hospitals choose to use therapies that are less expensive, our potential revenue and prospects for profitability will be limited.

Reimbursement rates may vary according to the use of the drug and the clinical setting in which it is used, may be based on reimbursement levels already set for lower-cost drugs, and may be incorporated into existing payments for other services. In both domestic and foreign markets, our sales of any future products will depend in part upon the availability of coverage and reimbursement from third party payors. Such third-party payors include government health programs such as Medicare and Medicaid, managed care providers, private health insurers, and other organizations. In particular, many U.S. hospitals receive a fixed reimbursement amount per procedure for certain surgeries and other treatment therapies they perform. Because this amount may not be based on the actual expenses the hospital incurs, hospitals may choose to use therapies which are less expensive when compared to our current or future product candidates. Accordingly, our current or future product candidates, if approved, will face competition from other therapies and drugs for these limited hospital financial resources. We may need to conduct post-marketing studies in order to demonstrate the cost-effectiveness of any future products to the satisfaction of hospitals, other target customers, and their third-party payors. Such studies might require us to commit a significant amount of management time and financial and other resources. Net prices for drugs may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by implementation of recently promulgated regulations that permit importation of drugs from countries where they may be sold at lower prices than in the United States. Our future product might not ultimately be considered cost-effective. Adequate third-party coverage and reimbursement might not be available to enable us to maintain price levels sufficient to realize an appropriate return on investment in product development.

If none of our current or future product candidates, if approved, achieves broad market acceptance, the potential revenues that we generate from sales will be limited.

The commercial success of our current or future product candidates or any or all of them, if approved, will depend upon its acceptance by the medical community, the ability to ensure that the drug is included in hospital formularies, and coverage and reimbursement for the drug by third party payors, including government payors. The degree of market acceptance of our current or future product candidates or any other product candidate we may license or acquire would depend on a number of factors, including, but not necessarily limited to:

- the efficacy and safety as demonstrated in clinical trials;
- the safety and use of our current or future product candidates in its intended patient population;
- the timing of market introduction of our current or future product candidates as well as competitive products;
- the clinical indications for which the drug is approved;
- acceptance by physicians, major operators of hospitals and clinics, and patients of the drug as a safe and effective treatment;
- the safety of our current or future product candidates seen in a broader patient group (i.e., real world use);
- the availability, cost, and potential advantages of alternative treatments, including less expensive generic drugs;
- the availability of adequate reimbursement and pricing by third party payors and government authorities;
- the relative convenience and ease of administration of our current or future product candidates for clinical practices;
- the product labeling or product insert required by the FDA or regulatory authority in other countries, including any contradictions, warnings, drug interactions, or other precautions;
- the approval, availability, market acceptance, and reimbursement for a companion diagnostic, if any;
- the prevalence and severity of adverse side effects;
- the effectiveness of our sales and marketing efforts;
- changes in the standard of care for the targeted indications for our current or future product candidates, which could reduce the marketing impact of any superiority claims that we could make following FDA approval; and
- potential advantages over, and availability of, alternative treatments.

If any product candidate that we develop does not provide a treatment regimen that is as beneficial as, or is not perceived as being as beneficial as, the current standard of care or otherwise does not provide patient benefit, that product candidate, if approved for commercial sale by the FDA or other regulatory authorities, likely will not achieve market acceptance. Our ability to effectively promote and potentially sell our product candidate and any other product candidates we may license or acquire in the hospital marketplace will also depend on pricing and cost effectiveness, including our ability to produce a product at a competitive price and achieve acceptance of the product onto hospital formularies, as well as our ability to obtain sufficient third-party coverage or reimbursement. Since many hospitals are members of group purchasing organizations, which leverage the purchasing power of a group of entities to obtain discounts based on the collective buying power of the group, our ability to potentially attract customers in the hospital marketplace will also depend on our ability to effectively potentially promote our current or future product candidates, if approved, to group purchasing organizations. We will also need to demonstrate acceptable evidence of safety and efficacy, as well as relative convenience and ease of administration. Market acceptance could be further limited depending on the prevalence and severity of any expected or unexpected adverse side effects associated with our current or future product candidates. If any of our current or future product candidates are approved but does not achieve an adequate level of acceptance by physicians, health care payors, and patients, we may not potentially generate sufficient revenue from this product, and we may not become or remain profitable. In addition, our efforts to educate the medical community and third-party payors on the benefits of our current or future product candidates may require significant resources and may never be successful.

If we are unable to establish sales and marketing capabilities or enter into agreements with third parties to market and sell our current or future product candidates, if approved, we may not be successful in commercializing such product candidates if and when they are approved.

We currently do not have a marketing or sales organization for the marketing and sales of pharmaceutical products since we currently have no drug products for sale. In order to potentially commercialize any product candidate that receives marketing approval, we would need to build our marketing, sales, managerial, and other non-technical capabilities, or enter into agreements with third party contract organizations to perform these services, and we may not be successful in doing so. In the event of successful development and regulatory approval of our current or future product candidates, if approved, we may license or acquire, we might have to build a targeted specialist sales force to market or co-promote the product. There are risks involved with establishing our own sales and marketing capabilities. For example, recruiting and training a sales force is expensive and time consuming and could delay any product launch. If the commercial launch of a product candidate for which we recruit a sales force and establish marketing capabilities is delayed or does not occur for any reason, we would have prematurely or unnecessarily incurred these commercialization expenses. This may be costly, and our investment would be lost if we cannot retain or reposition our sales and marketing personnel.

Factors that may inhibit our potential efforts to successfully commercialize our future products, if any, using our own sales and marketing capabilities include, but are not necessarily limited to:

- our inability to recruit, train, and retain adequate numbers of effective sales and marketing personnel;
- the inability of sales personnel to obtain access to physicians or persuade adequate numbers of physicians to prescribe any future products;
- the lack of complementary or other products to be offered by sales personnel, which may put us at a competitive disadvantage from the perspective of sales efficiency relative to companies with more extensive product lines; and
- unforeseen costs and expenses associated with creating an independent sales and marketing organization.

As an alternative to establishing our own sales force, we may choose to partner with third parties that have well-established direct sales forces to sell, market, and distribute any current or future product candidates for which we receive marketing approval. There are risks involved with partnering with third party sales forces, including ensuring adequate training on the product, regulatory, and compliance requirements associated with promotion of the product.

We face potential product liability exposure, and if successful claims are brought against us, we may incur substantial liability for our current or future product candidates and may have to limit their commercialization, if approved.

The use of our product candidates and any other product candidates we may license or acquire in clinical trials and the sale of any products for which we obtain marketing approval expose us to the risk of product liability claims. For example, we may be sued if any product candidate or product we develop allegedly causes injury or is found to be otherwise unsuitable during clinical testing, manufacturing, marketing, or sale. Any such product liability claims may include allegations of defects in manufacturing, defects in design, a failure to warn of dangers inherent in the product, negligence, strict liability, or a breach of warranties. Product liability claims might be brought against us by consumers, health care providers or others using, administering, or selling our products. If we cannot successfully defend ourselves against these claims, we will incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- withdrawal of clinical trial participants;
- termination of clinical trial sites or entire trial programs;
- decreased demand for any product candidates or products that we may develop;
- initiation of investigations by regulators;
- impairment of our business reputation;
- costs of related litigation;
- substantial monetary awards to patients or other claimants;

- loss of revenues;
- reduced resources of our management to pursue our business strategy; and
- the inability to commercialize our current or future product candidates, if approved.

We have limited product liability insurance coverage for our clinical trials. However, our insurance coverage may not reimburse us or may not be sufficient to reimburse us for any expenses or losses we may suffer. Moreover, insurance coverage is becoming increasingly expensive, and, in the future, we may not be able to maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses due to liability. When needed, we intend to potentially expand our insurance coverage to include the sale of commercial products if we obtain marketing approval for our current or future product candidates in development, but we may be unable to obtain commercially reasonable product liability insurance for any products approved for marketing. On occasion, large judgments have been awarded in class action lawsuits based on drugs that had unanticipated adverse events. A successful product liability claim or series of claims brought against us could cause our stock price to fall and, if judgments exceed our insurance coverage, could decrease our cash and adversely affect our business, financial condition, and results of operations.

Risks Pertaining to Intellectual Property and Potential Disputes Thereof

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

Our commercial success will depend in part on obtaining and maintaining patent protection and trade secret protection in the United States with respect to our current or future product candidates and the methods we use to manufacture them, as well as successfully defending these patents and trade secrets against third party challenges. We seek to protect our proprietary position by filing patent applications in the United States and abroad related to our current or future product candidates. We will only be able to protect our technologies from unauthorized use by third parties to the extent that valid and enforceable patents or trade secrets cover them.

The patent prosecution process is expensive and time-consuming, and we may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. It is also possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. If our licensors or we fail to obtain or maintain patent protection or trade secret protection for our product candidate or any other product candidate we may license or acquire, third parties could use our proprietary information, which could impair our ability to compete in the market and adversely affect our ability to generate revenues and achieve profitability. Moreover, should we enter into other collaborations we may be required to consult with or cede control to collaborators regarding the prosecution, maintenance, and enforcement of our patents. Therefore, these patents and applications may not be prosecuted and enforced in a manner consistent with the best interests of our business.

The patent position of biotechnology and pharmaceutical companies generally is highly uncertain, involves complex legal and factual questions, and has in recent years been the subject of much litigation. In addition, no consistent policy regarding the breadth of claims allowed in pharmaceutical or biotechnology patents has emerged to date in the United States. The patent situation outside the United States is even more uncertain. The laws of foreign countries may not protect our rights to the same extent as the laws of the United States. For example, European patent law restricts the patentability of methods of treatment of the human body more than United States law does. 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 a first filing, or in some cases at all. Therefore, we cannot know with certainty whether we or our licensors were the first to make the inventions claimed in our owned or licensed patents or pending patent applications, or that we were the first to file for patent protection of such inventions. In the event that a third party has also filed a U.S. patent application relating to our current or future product candidates or a similar invention, we may have to participate in interference proceedings declared by the USPTO to determine priority of invention in the United States. The costs of these proceedings could be substantial and it is possible that our efforts would be unsuccessful, resulting in a material adverse effect on our U.S. patent position. As a result, the issuance, scope, validity, enforceability, and commercial value of our or any of our licensors' patent rights are highly uncertain. Our pending and future patent applications may not result in patents being issued which protect our technology or products, in whole or in part, or which effectively prevent others from commercializing competitive technologies and products. Changes in either the patent laws or interpretation of the patent laws in the United States and other countries may diminish the value of our patents or narrow the scope of our patent protection. For example, the federal courts of the United States have taken an increasingly dim view of the patent eligibility of certain subject matter, such as naturally occurring nucleic acid sequences, amino acid sequences, and certain methods of utilizing same, which include their detection in a biological sample and diagnostic conclusions arising from their detection. Such subject matter, which had long been a staple of the biotechnology and biopharmaceutical industry to protect their discoveries, is now considered, with few exceptions, ineligible in the first place for protection under the patent laws of the United States. Accordingly, we cannot predict the breadth of claims that may be allowed or enforced in our patents (if any) or in those licensed from third parties.

Recent patent reform legislation could increase the uncertainties and costs surrounding the prosecution of our patent applications and affect the validity, enforceability, scope, or defense of our issued patents. The Leahy-Smith America Invents Act (the "Leahy-Smith Act") includes a number of significant changes to United States patent law. These include provisions that affect the way patent applications are prosecuted and may also affect patent litigation. The USPTO issues and administers regulations and procedures to govern administration of the Leahy-Smith Act, including the first-to-file provisions. The Leahy-Smith Act could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could have a material, adverse effect on our business and financial condition.

Moreover, we may be subject to a third-party pre-issuance submission of prior art to the USPTO, or become involved in opposition, derivation, reexamination, inter parties review, post-grant review, or interference proceedings challenging our patent rights or the patent rights of others. An adverse determination in any such submission, Patent Trial and Appeal Board ("PTAB") trial, proceeding, or litigation could reduce the scope of, render unenforceable, or invalidate, our patent rights, allow third parties to commercialize our technology or products 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. In addition, if the breadth or strength of protection provided by our patents and patent applications is threatened, it could dissuade companies from collaborating with us to license, develop, or commercialize current or future product candidates.

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 from competing with us, or otherwise provide us with any competitive advantage. Our competitors may be able to circumvent our owned or licensed patents by developing similar or alternative technologies or products in a non-infringing manner.

The issuance of a patent does not foreclose challenges to its inventorship, scope, validity, or enforceability. Therefore, our owned and licensed patents may be challenged in the courts or patent offices in the United States and abroad. Such challenges may result in loss of exclusivity or freedom to operate or in patent claims being narrowed, invalidated, or held unenforceable, in whole or in part, which could limit our ability to stop others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of our technology and products. Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such product candidates might expire before or shortly after such product candidates are commercialized. As a result, our owned and licensed patent portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours.

The patent rights that we have in-licensed covering the infusion time and pharmacokinetics, or "PK", profile for IV tramadol are limited to a specific IV formulation of centrally acting synthetic opioid analgesic, and our market opportunity for this product candidate may be limited by the lack of patent protection for the active ingredient itself and other formulations that may be developed by competitors.

The active ingredients in IV tramadol have been generic in the United States for a number of years. While we believe that the patent estate covering IV tramadol (including but not limited to U.S. Patent Nos. 8,895,622; 9,561,195, 9,566,253 9,962,343, 10,406,122, 9,693,949, 9,968,551, 9,980,900, 10,022,321,10,537,521, 10,624,842, 10,751,277, 10,751,278, 10,751,279, 10,646,433, 10,729,644, 10,729,645, and 10,617,635) provides strong protection, our market opportunity would be limited if a generic manufacturer could obtain regulatory approval for another IV formulation of tramadol and commercialize it without infringing our patents.

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

Competitors may infringe our issued patents or other intellectual property. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time consuming. Any claims we assert against perceived infringers could provoke these parties to assert counterclaims against us alleging that we infringe their patents. In addition, in a patent infringement proceeding, a court may decide that a patent of ours is invalid or unenforceable, in whole or in part, construe the patent's claims narrowly, or refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question. An adverse result in any litigation proceeding could put one or more of our patents at risk of being invalidated, rendered unenforceable, or interpreted narrowly.

We may become involved in other types of legal proceedings related to our intellectual property that could result in the invalidation or unenforceability of our patents and could be expensive and time consuming, regardless of the outcome.

Any party can challenge the validity of our patents in post-grant proceedings at the PTAB, which include *inter partes* review and *post-grant* review proceedings. Although these proceedings are more limited, and therefore are often less expensive, than district court litigation, they can still require substantial resources. If the PTAB finds that our patents are unpatentable, we will be unable to enforce those patents against our competitors. Additionally, our competitors may bring other administrative challenges to our patents before the USPTO, including opposition, derivation, interference, *ex parte* reexamination, and *inter partes* reexamination proceedings. These proceedings may prevent our patent applications from issuing, or for patents that are already issued, an unsuccessful outcome will render the patent unenforceable.

If we are sued for infringing intellectual property rights of third parties, it will be costly and time consuming, and an unfavorable outcome in any litigation would harm our business.

Our ability to develop, manufacture, market, and potentially sell our current or future product candidates depends upon our ability to avoid infringing the proprietary rights of third parties. Numerous U.S. and foreign patents and pending patent applications, which are owned by third parties, exist in the general fields of pain treatment and neurologic disorder treatment and cover the use of numerous compounds and formulations in our targeted markets. Because of the uncertainty inherent in any patent or other litigation involving proprietary rights, we and our licensors may not be successful in defending intellectual property claims by third parties, which could have a material adverse effect on our business, financial condition, and results of operations. Regardless of the outcome of any litigation, defending the litigation may be expensive, time-consuming, and distracting to management. In addition, because patent applications can take many years to issue, there may be currently pending applications, unknown to us, which may later result in issued patents that our current or future product candidates may infringe upon. There could also be existing patents of which we are not aware that one of our current or future product candidates may inadvertently infringe.

There is a substantial amount of litigation involving patent and other intellectual property rights in the biotechnology and biopharmaceutical industries generally. If a third party claims that we infringed on their patents or misappropriated their technology, we could face a number of issues, including:

- infringement and other intellectual property claims which, with or without merit, can be expensive and time consuming to litigate and can divert management's attention from our core business;
- substantial damages for past infringement which we may have to pay if a court decides that our product infringes on a competitor's patent;
- a court prohibiting us from selling or licensing our product unless the patent holder licenses the patent to us, which it would not be required to do;
- if a license is available from a patent holder, we may have to pay substantial royalties or grant cross licenses to our patents; and
- redesigning our processes so they do not infringe, which may not be possible or could require substantial funds and time.

We may need to license certain intellectual property from third parties, and such licenses may not be available or may not be available on commercially reasonable terms.

A third party may hold intellectual property, including patent rights that are important or necessary to the development and potential commercialization of our product. It may be necessary for us to use the patented or proprietary technology of third parties to potentially commercialize our product, in which case we would be required to obtain a license from these third parties on commercially reasonable terms, or our business could be harmed, possibly materially.

If we fail to comply with our obligations in our intellectual property licenses and funding arrangements with third parties, we could lose rights that are important to our business.

We are currently party to a license agreement under which we acquired rights to develop and market IV tramadol. The license agreement for IV tramadol will terminate on a product-by-product and country-by-country basis upon the expiration of the last licensed patent right, unless the agreement is earlier terminated. In addition to standard early termination provisions, the license agreement pertaining to IV tramadol, included provisions allowing early termination by: (i) Revogenex Ireland Ltd. ("Revogenex") if the FDA did not issue an approval or otherwise issues a "not approvable" notice for the NDA within 15 months after the NDA was filed with the FDA, although this termination right will be tolled if we are using commercially reasonable efforts in our negotiations with the FDA for approval and if we receive a "not approvable" notice, we will have a 15 month period to correct any issues and re-submit the NDA for approval, (ii) us if we reasonably determine prior to NDA approval that the development of IV tramadol is not economically viable, or (iii) either Revogenex or us (provided we are using or have used commercially reasonable efforts to commercialize IV tramadol) if, after the third anniversary date of the commercial launch, we fail to achieve annual net sales with respect to IV tramadol of at least $20 million in any given calendar year, with certain exceptions.

We are also party to a license agreement under which we acquired rights to patents and know-how to develop ATX-04. The license agreement includes customary development and commercialization diligence obligations for the Company, as well as customary termination provisions, including for uncured material breach, certain insolvency-related events and specified patent challenges, and otherwise continues on a product-by-product and country-by-country basis for so long as royalties are payable.

In the future, we may become party to licenses that are important for product development and potential commercialization. If we fail to comply with our obligations under current or future license and funding agreements, our counterparties may have the right to terminate these agreements, in which event we might not be able to develop, manufacture, or market any product or utilize any technology that is covered by these agreements or may face other penalties under the agreements. Such an occurrence could materially and adversely affect the value of a product candidate being developed under any such agreement or could restrict our drug discovery activities. Termination of these agreements or reduction or elimination of our rights under these agreements may result in our having to negotiate new or reinstated agreements with less favorable terms, or cause us to lose our rights under these agreements, including our rights to important intellectual property or technology.

To the extent we operate in foreign jurisdictions, we may be exposed to increased risk associated with the potential theft of technology and intellectual property.

Our U.S. patents can be enforced against those who make, use, offer to sell, or sell our licensed patented inventions within the U.S., or against those who import our licensed patented inventions within the U.S. We may depend on foreign intellectual property rights to prevent competitors from manufacturing and selling our products outside of the U.S. without our authorization. Foreign laws and regulations may not protect our patent rights and trade secret rights to the same extent as U.S. law. It is also possible that we may be required to compromise protections or waive rights in order to conduct business in a foreign jurisdiction. Such restrictions may limit our ability to profitably compete in those markets.

We may be subject to claims that our employees have wrongfully used or disclosed alleged trade secrets of their former employers.

As is common in the biotechnology and pharmaceutical industry, we employ individuals who were previously employed at other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although no claims against us are currently pending, we may be subject to claims that these employees or we have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of their former employers. Litigation may be necessary to defend against these claims. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to management.

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 current or future product candidates, we also rely on trade secrets, including unpatented know-how, technology, and other proprietary information, to maintain our competitive position, particularly where we do not believe patent protection is appropriate or obtainable. However, trade secrets are difficult to protect. We limit disclosure of such trade secrets where possible, but we also seek to protect these trade secrets, in part, by entering into non-disclosure and confidentiality agreements with parties who do have access to them, such as our employees, our licensors, corporate collaborators, outside scientific collaborators, contract manufacturers, consultants, advisors, and other third parties. We also enter into confidentiality and invention or patent assignment agreements with our employees and consultants. Despite these efforts, any of these parties may breach the agreements and may unintentionally or willfully disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive, and time-consuming, and the outcome is unpredictable. In addition, some courts inside and outside the United States are less willing or unwilling to protect trade secrets. Moreover, if any of our trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent them, or those to whom they communicate it, from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to or independently developed by a competitor, our competitive position would be harmed.

General Risk Factors

Our results of operations and liquidity needs could be materially negatively affected by unfavorable global economic, political and market conditions, including geopolitical conflicts, trade restrictions, tariffs, economic downturn and other macroeconomic factors.

Our results of operations could be materially negatively affected by economic conditions generally, both in the United States and elsewhere around the world. Continuing concerns over inflation, energy costs, geopolitical issues, including the invasion of Ukraine by military forces of the Russian Federation and the war between Israel and Hamas in Gaza, the availability and cost of credit, the U.S. mortgage market, and the residential real estate market in the United States have contributed to increased volatility and diminished expectations for the economy and the markets going forward. These factors, combined with volatile oil prices, declining business and consumer confidence, and increased interest rate, have precipitated an economic recession and fears of a possible depression. Domestic and international equity markets continue to experience heightened volatility and turmoil. These events and the continuing market upheavals may have an adverse effect on us. In the event of a continuing market downturn, our results of operations could be adversely affected by those factors in many ways, including making it more difficult for us to raise funds if necessary, and our stock price may further decline.

Our business is subject to risks associated with adverse worldwide economic and political conditions, including geopolitical conflicts, terrorism, trade disputes, tariffs, sanctions, export controls, pandemics and other public health crises, inflationary pressures, increased interest rates, disruptions in global supply chains, and volatility in the capital markets. Additionally, trade policies and geopolitical disputes and other international conflicts can result in tariffs, sanctions and other measures that restrict international trade, and can materially adversely affect our business, particularly if these measures occur in regions where drug products are manufactured or raw materials are sourced. The U.S. has imposed higher tariffs and sanctions on goods imported from Canada and China, and may be imposed on goods imported from other countries, which could increase the cost of goods needed to commercialize our products and continue development of our current or future product candidates. Further, such actions by the U.S. could result in retaliatory action by those countries which could impact our ability to profitably commercialize our products in those jurisdictions. Any of these factors could delay or disrupt our clinical trials, increase our costs (including for raw materials, manufacturing, logistics, and insurance), impair our relationships with contract research organizations or contract manufacturers, or adversely affect the availability or cost of capital on which we depend to fund our operations. As a result, our business, operations, and financial condition could be materially harmed.

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

We are a traded public company. As a public company, we incur significant legal, accounting, and other expenses under the Sarbanes-Oxley Act of 2002, as well as rules subsequently implemented by the SEC. These rules impose various requirements on public companies, including requiring establishment and maintenance of effective disclosure and financial controls and appropriate corporate governance practices. Our management and other personnel have devoted and will continue to devote a substantial amount of time to these compliance initiatives. Moreover, these rules and regulations increase our legal and financial compliance costs and make some activities more time-consuming and costly. For example, these rules and regulations make it more difficult and more expensive for us to obtain director and officer liability insurance, and we may be required to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. As a result, it may be more difficult for us to attract and retain qualified persons to serve on our board of directors, our board committees, or as executive officers.

The Sarbanes-Oxley Act of 2002 requires, among other things, that we maintain effective internal controls for financial reporting and disclosure controls and procedures. As a result, we are required to periodically perform an evaluation of our internal controls over financial reporting to allow management to report on the effectiveness of those controls, as required by Section 404 of the Sarbanes-Oxley Act. However, while we remain a non-accelerated filer, we will not be required to include an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. To maintain compliance with Section 404, we have in place a process to document and evaluate our internal control over financial reporting. These efforts to comply with Section 404 and related regulations have required, and continue to require, the commitment of significant financial and managerial resources. While we anticipate maintaining the integrity of our internal controls over financial reporting and all other aspects of Section 404, we cannot be certain that a material weakness will not be identified when we test the effectiveness of our control systems in the future. If a material weakness is identified, we could be subject to sanctions or investigations by the SEC or other regulatory authorities, which would require additional financial and management resources, costly litigation, or a loss of public confidence in our internal controls, which could have an adverse effect on the market price of our stock.

Our business and operations would suffer in the event of computer system failures, cyber-attacks, or deficiencies in our or third parties' cybersecurity.

We are increasingly dependent upon information technology systems, infrastructure, and data to operate our business. In the ordinary course of business, we collect, store, and transmit confidential information, including, but not limited to, information related to our intellectual property and proprietary business information, personal information, and other confidential information. It is critical that we maintain such confidential information in a manner that preserves its confidentiality, availability and integrity. Furthermore, we have outsourced elements of our operations to third party vendors, who each have access to our confidential information, which increases our disclosure risk.

Despite the implementation of security measures, our information technology and other internal infrastructure systems, including corporate firewalls, servers, third-party software, data center facilities, lab equipment, and connection to the internet, face the risk of breakdown or other damage or interruption from service interruptions, system malfunctions, natural disasters, terrorism, war, and telecommunication and electrical failures, as well as security breaches from inadvertent or intentional actions by our employees, contractors, consultants, business partners, and/or other third parties, or from cyber-attacks by malicious third parties (including the deployment of harmful malware and other malicious code, ransomware, denial-of-service attacks, social engineering and other means to affect service reliability and threaten the confidentiality, integrity and availability of information), each of which could compromise our system infrastructure or lead to the loss, destruction, alteration, disclosure, or dissemination of, or damage or unauthorized access to, our data or data that is processed or maintained on our behalf, or other assets.

Any system failure, accident, or security breach that causes interruptions in our operations could result in a material disruption of our drug development programs. For example, the loss of clinical trial data from completed clinical trials for our product candidates could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach results in a loss or damage to our data or applications, or inappropriate disclosure of confidential or proprietary information, we may incur liability and the further development of our current or future product candidates may be delayed. We may not be able to anticipate all types of security threats, and we may not be able to implement effective preventive measures against all such security threats. The techniques used by cyber criminals change frequently, may not be recognized until launched, and can originate from a wide variety of sources, including outside groups such as external service providers, organized crime affiliates, terrorist organizations, or hostile foreign governments or agencies.

Any security breach or other event leading to the loss or damage to, or unauthorized access, use, alteration, disclosure, or dissemination of, personal information, including personal information regarding clinical trial subjects, contractors, directors, or employees, our intellectual property, proprietary business information, or other confidential or proprietary information, could directly harm our reputation, enable competitors to compete with us more effectively, compel us to comply with federal and/or state breach notification laws and foreign law equivalents, subject us to mandatory corrective action, or otherwise subject us to liability under laws and regulations that protect the privacy and security of personal information. Each of the foregoing could result in significant legal and financial exposure and reputational damage that could adversely affect our business. Notifications and follow-up actions related to a security incident could impact our reputation or cause us to incur substantial costs, including legal and remediation costs, in connection with these measures and otherwise in connection with any actual or suspected security breach. We expect to incur significant costs in an effort to detect and prevent security incidents and otherwise implement our internal security and business continuity measures, and actual, potential, or anticipated attacks may cause us to incur increasing costs, including costs to deploy additional personnel and protection technologies, train employees, and engage third-party experts and consultants. We may face increased costs and find it necessary or appropriate to expend substantial resources in the event of an actual or perceived security breach.

The costs related to significant security breaches or disruptions could be material, and our insurance policies may not be adequate to compensate us for the potential losses arising from any such disruption in, or failure or security breach of, our systems or third-party systems where information important to our business operations or commercial development is stored or processed. In addition, such insurance may not be available to us in the future on economically reasonable terms, or at all. Further, our insurance may not cover all claims made against us and could have high deductibles in any event, and defending a suit, regardless of its merit, could be costly and divert management attention. Furthermore, if the information technology systems of our third-party vendors and other contractors and consultants become subject to disruptions or security breaches, we may have insufficient recourse against such third parties and we may have to expend significant resources to mitigate the impact of such an event, and to develop and implement protections to prevent future events of this nature from occurring.

The occurrence of a catastrophic disaster could damage our facilities beyond insurance limits or we could lose key data which could cause us to curtail or cease operations.

We are vulnerable to damage and/or loss of vital data from natural disasters, such as earthquakes, tornadoes, power loss, fire, health epidemics and pandemics, floods, and similar events, as well as from accidental loss or destruction. If any disaster were to occur, our ability to operate our businesses could be seriously impaired. We have property, liability, and business interruption insurance that may not be adequate to cover losses resulting from disasters or other similar significant business interruptions, and we do not plan to purchase additional insurance to cover such losses due to the cost of obtaining such coverage. Any significant losses that are not recoverable under our insurance policies could seriously impair our business, financial condition, and prospects. Any of the aforementioned circumstances may also impede our employees' and consultants' abilities to provide services in-person and/or in a timely manner; hinder our ability to raise funds to finance our operations on favorable terms or at all; and trigger effectiveness of "force majeure" clauses under agreements with respect to which we receive goods and services, or under which we are obligated to achieve developmental milestones on certain timeframes. Disputes with third parties over the applicability of such "force majeure" clauses, or the enforceability of developmental milestones and related extension mechanisms in light of such business interruptions, may arise and may become expensive and time-consuming.

We may become involved in securities class action litigation that could divert management's attention and harm our business.

The stock markets have from time to time experienced significant price and volume fluctuations that have affected the market prices for the common stock of biotechnology and pharmaceutical companies. These broad market fluctuations may cause the market price of our stock to decline. 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. We may become involved in this type of litigation in the future. Litigation often is expensive and diverts management's attention and resources, which could adversely affect our business.

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

New income, sales, use or other tax laws, statutes, rules, regulations, or ordinances could be enacted at any time, which could adversely affect our business operations and financial performance. For example, the United States recently passed the Inflation Reduction Act, which provides for a minimum tax equal to 15% of the adjusted financial statement income of certain large corporations, as well as a 1% excise tax on certain share buybacks by public corporations that would be imposed on such corporations. In addition, it is uncertain if and to what extent various states will conform to newly enacted federal tax legislation. Changes in corporate tax rates, the realization of net deferred tax assets relating to our operations, the taxation of foreign earnings, and the deductibility of expenses could have a material impact on the value

of our deferred tax assets, could result in significant one-time charges, and could increase our future U.S. tax expense.

Risks Pertaining to the Influence of Fortress

Fortress controls a voting majority of our common stock.

Pursuant to the terms of the Class A Preferred Stock held by Fortress, Fortress is entitled to cast, for each share of Class A Preferred Stock held by Fortress, the number of votes that is equal to 1.1 times a fraction, the numerator of which is the sum of (A) the aggregate number of shares of outstanding common stock and (B) the whole shares of common stock into which the shares of outstanding the Class A Preferred Stock are convertible and the denominator of which is the aggregate number of shares of outstanding Class A Preferred Stock, or the "Class A Preferred Stock Ratio." Thus, Fortress will at all times have voting control of us. Further, for a period of ten (10) years from the date of the first issuance of shares of Class A Preferred Stock, the holders of record of the shares of Class A Preferred Stock (or other capital stock or securities issued upon conversion of or in exchange for the Class A Preferred Stock), exclusively and as a separate class, shall be entitled to appoint or elect the majority of our directors; however, the Company and Fortress waived application of this provision of the certificate of incorporation, and the holders of the Common Stock voted together with the holders of the Class A Preferred Stock for all directors, at our most recent annual meeting of stockholders, with the holders of the Class A Preferred Stock utilizing the super-voting rights described above.

Accordingly, conflicts of interest may arise between Fortress and its affiliates, on the one hand, and us and our other stockholders, on the other hand. In resolving these conflicts of interests, Fortress may favor its own interests and the interests of its affiliates, over the interests of our other stockholders, which could cause a material adverse effect on our business, financial condition, and results of operations. This concentration of voting power may also have the effect of delaying, preventing, or deterring a change in control of us even when such a change may be in the best interests of all stockholders, could deprive our stockholders of an opportunity to receive a premium for their shares of common stock as part of a sale of us or our assets, and might affect the prevailing market price of our common stock.

Fortress has the right to receive a significant grant of shares of our common stock annually, which would result in the dilution of your holdings of common stock upon each grant, which could reduce their value.

Under the terms of the Amended and Restated Founders Agreement, which became effective September 13, 2016, Fortress is entitled to receive a grant of shares of our common stock equal to 2.5% of the gross amount of any equity or debt financing. Additionally, the holders of Class A Preferred Stock, as a class, are to receive an Annual Stock Dividend, payable in shares of common stock in an amount equal to 2.5% of our fully-diluted outstanding capital stock as of the business day immediately prior to the date such dividend is payable. Fortress currently owns all outstanding shares of Class A Preferred Stock. These potential future share issuances to Fortress and any other holder of Class A Preferred Stock will dilute your holdings in our common stock and, if our value has not grown proportionately over the prior year, would result in a reduction in the value of your shares. The Amended and Restated Founders Agreement has a term of 15 years and renews automatically for subsequent one-year periods unless terminated by Fortress or upon a Change in Control (as defined in the Amended and Restated Founders Agreement).

We might have received better terms from unaffiliated third parties than the terms we receive in our agreements with Fortress.

We entered into certain agreements with Fortress in connection with our separation from Fortress into an independent company, including the Management Services Agreement (the "MSA") and the Founders Agreement, and entered into the Contribution Agreement with Fortress in May 2022. While we believe the terms of these agreements are reasonable, they might not reflect terms that would have resulted from arm's-length negotiations between unaffiliated third parties. The terms of the agreements relate to, among other things, payment of a royalty on product sales and the provision of employment and transition services. We might have received better terms from third parties because, among other things, third parties might have competed with each other to win our business.

The ownership by our executive officers and some of our directors of equity securities of Fortress and/or rights to acquire equity securities of Fortress might create, or appear to create, conflicts of interest.

Because of their current or former positions with Fortress, some of our executive officers and directors own shares of Fortress common stock and/or options to purchase shares of Fortress common stock. Their individual holdings of common stock and/or options to purchase common stock of Fortress may be significant compared to their total assets. Ownership by our directors and officers, after our separation from Fortress, of common stock and/or options to purchase common stock of Fortress create or might appear to create conflicts of interest when these directors and officers are faced with decisions that could have different implications for Fortress than for us. For instance, and by way of example, if there were to be a dispute between Fortress and us regarding the calculation of the royalty fee due to Fortress under the terms of the Founders Agreement, then certain of our officers and directors may have and will appear to have a conflict of interest with regard to the outcome of such dispute.

Fortress' current or future financial obligations and arrangements, or an event of default thereon, may change the ownership dynamic of us by Fortress.

Any default or breach by Fortress under any current or future credit agreement or arrangements may have an adverse effect on our business. Fortress has pledged, as collateral to certain of its creditors, equity in the Company. If Fortress were to default on its obligations to any such creditor, that creditor, whose interests may not align with those of our other stakeholders, could acquire a controlling interest in the Company. In addition, Fortress' current credit agreement with Oaktree Capital, as amended on December 12, 2025 (as further amended from time to time, the "Oaktree Credit Agreement") contains certain affirmative and negative covenants and events of default that apply in different instances to Fortress itself, its private subsidiaries, its public subsidiaries, or combinations of the foregoing. Although we are not a party to the Oaktree Credit Agreement, because Fortress controls our stockholder vote, Fortress may not permit us to effect certain actions which we feel would be in the Company's best interests, but which Fortress cannot allow so as to remain in compliance with the Oaktree Credit Agreement.

Item 1B. Unresolved Staff Comments

None.

Item 1C. Cybersecurity

Cybersecurity Risk Management and Strategy

We have established certain processes for identifying, evaluating, and managing material risks from cybersecurity threats as a part of our overall technology management strategy. These processes are designed and reassessed on a periodic basis to help protect our technology assets and operations from internal and external security threats. We also engage with third parties, including consultants, to enhance our security processes.

We have previously engaged and currently engage third parties to assess the effectiveness of our cybersecurity and technology management strategy and continue to seek to implement new, and improve existing, processes regularly to adjust for changes in technology, internal or external threats, business strategy, and regulatory requirements. We, and our third parties, have deployed managed detection and response services to monitor our technology infrastructure and information systems for possible threats. Our technology management strategy also includes ongoing security training and education for employees regarding threats, including their role and responsibility in detecting and responding to such threats.

We review the processes of our third party vendors and consider their ability to adhere to relevant industry practices and maintain adequate technology risk programs. In addition, we maintain cyber and cyber-related crime insurance coverage policies as part of our overall risk management strategy, however, our policies may not be sufficient to cover against all potential future claims, if any.

In the last two fiscal years, we have not identified cybersecurity threats that have materially affected, or are reasonably likely to materially affect, our business, results of operations, or financial condition. Although we proactively attempt to prevent all threats, we are unable to eliminate all risk from cybersecurity threats or provide assurance that we have not experienced an undetected cybersecurity incident. For more information about these risks, please see Item 1A. Risk Factors “Our business and operations would suffer in the event of computer system failures, cyber-attacks, or deficiencies in our or third parties’ cybersecurity”.

Cybersecurity Governance

While our Board of Directors is responsible for oversight and risk management in general, our Audit Committee provides oversight of our technology management strategy to ensure that cybersecurity threats and risks are identified, evaluated, and managed. The Audit Committee receives periodic updates from our management team regarding the overall state of our technology management strategy and any relevant risks from cybersecurity threats and cybersecurity incidents.

Our management team is responsible for assessing and managing the material risks from cybersecurity threats and our Interim Chief Financial Officer leads these efforts on behalf of the management team. Our management team members have expertise in information systems, compliance and corporate governance, which we believe are disciplines that are effective in the management of the Company’s cybersecurity risk. Our Interim Chief Financial Officer ("CFO") is well-informed on emerging cybersecurity risks and solutions used to mitigate and remediate loss due to cybersecurity incidents and is responsible for our internal cybersecurity programs and oversight of third-party cybersecurity vendors who monitor and execute on the prevention, detection, and mitigation of cybersecurity threats and incidents. Our CFO, as well as our management team, are informed about, and monitor the prevention, mitigation, detection and remediation of cybersecurity incidents through their management of, and participation in, the cybersecurity risk management and strategy processes described above, including the operation of our incident response plan, and report to our audit committee and overall board of directors on any appropriate items.

Item 2. Properties

Our corporate and executive office is located at 1111 Kane Concourse, Suite 301, Bay Harbor Islands, FL 33154. We are not currently under a lease agreement at 1111 Kane Concourse, but we are provided access to this space by Fortress at no cost to us. We believe that our existing facilities are adequate to meet our current requirements. We do not own any real property.

Item 3. Legal Proceedings

To our knowledge, there are no material legal proceedings pending against us, other than routine actions and administrative proceedings, and other actions we have deemed not material and not expected to have, individually or in the aggregate, a material adverse effect on our financial condition, results of operations, or cash flows. In the ordinary course of business, however, the Company may be subject to both insured and uninsured litigation. Suits and claims may be brought against the Company by customers, suppliers, partners, and/or third parties (including tort claims for personal injury arising from clinical trials of the Company’s product candidates and property damage) alleging deficiencies in performance, breach of contract, negligence and other matters, and seeking resulting alleged damages.

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 not currently listed for trading on any national securities exchange. Our common stock is quoted for trading on the OTC Pink Open Market, an over-the-counter market, under the symbol "ATXI". Over-the-counter market quotations reflect inter-dealer prices, without retail mark-up, mark-down or commission and may not necessarily represent actual transactions. There is no established public trading market for our common stock.

Holders of Record

As of March 25, 2026, there were approximately 33 holders of record of our common stock. The actual number of stockholders is greater than this number of record holders and includes stockholders who are beneficial owners, but whose shares are held in street name by brokers and other nominees. This number of holders of record also does not include stockholders whose shares may be held in trust by other entities.

Dividends

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

Recent Sales of Unregistered Securities

Not applicable.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

Not applicable.

Item 6. Reserved

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

Forward-Looking Statements

Statements in the following discussion and throughout this report that are not historical in nature are "forward-looking statements." You can identify forward-looking statements by the use of words such as "expect," "anticipate," "estimate," "may," "will," "should," "intend," "believe," and similar expressions. Although we believe the expectations reflected in these forward-looking statements are reasonable, such statements are inherently subject to risk and we can give no assurances that our expectations will prove to be correct. Actual results could differ from those described in this report because of numerous factors, many of which are beyond our control. These factors include, without limitation, those described under Item 1A "Risk Factors." We undertake no obligation to update these forward-looking statements to reflect events or circumstances after the date of this report or to reflect actual outcomes. Please see the section of this report titled "Cautionary Note Regarding Forward-Looking Statements" at the beginning of this Form 10-K.

The following discussion of our financial condition and results of operations should be read in conjunction with our audited consolidated financial statements and the related notes thereto and other financial information appearing elsewhere in this Form 10-K. We undertake no obligation to update any forward-looking statements in the discussion of our financial condition and results of operations to reflect events or circumstances after the date of this report or to reflect actual outcomes.

Overview

Avenue Therapeutics, Inc. ("Avenue" or the "Company") is a specialty pharmaceutical company focused on the development and commercialization of therapies for the treatment of neurologic diseases. Our product candidates include are ATX-04, a selective β2-adrenergic agonist for Pompe disease, and intravenous tramadol ("IV tramadol"), a schedule IV opioid for the treatment of post-operative acute pain. We may in the future acquire additional product candidates.

Our net loss for the years ended December 31, 2025 and 2024 was approximately $2.9 million and $11.7 million, respectively. As of December 31, 2025, we had an accumulated deficit of approximately $105.5 million. Substantially all our net losses resulted from costs incurred for licenses acquired, research and development, and general and administrative purposes.

We expect to continue to incur research and development costs and general and administration costs and incur operating losses for at least the next several years as we continue the development of our product candidates.

We intend to obtain additional capital through the sale of debt or equity securities or other arrangements to fund our operations, research and development activity or regulatory approval activity; however, there can be no assurance that we will be able to raise the necessary capital under acceptable terms, if at all. The sale of additional equity or securities convertible into or exercisable for equity may dilute existing stockholders and newly issued shares may contain senior rights and preferences compared to currently outstanding shares of our common stock. Issued debt securities may contain covenants and limit our ability to pay dividends or make other distributions to stockholders. We may also seek financing through strategic partnerships for some or all of our portfolio assets. If we are unable to obtain such additional financing, future operations would need to be scaled back or discontinued.

We are a majority-controlled subsidiary of Fortress. For related party transactions, see Note 4 to our consolidated financial statements included herein.

Avenue Therapeutics, Inc. was incorporated in Delaware on February 9, 2015. Our executive offices are located at 1111 Kane Concourse, Suite 301, Bay Harbor Islands, FL 33154. Our telephone number is (781) 652-4500, and our email address is info@avenuetx.com.

ATX-04

In February 2026, Avenue entered into a license agreement with Duke University ("Duke"), pursuant to which Avenue obtained an exclusive worldwide license (the "ATX-04 License") from Duke to certain patents and know-how pertaining to clenbuterol ("ATX-04") for the treatment of lysosomal storage diseases.

Under the ATX-04 License, Avenue made an upfront payment and reimbursed certain patent expenses to Duke and has an obligation to make development, regulatory, and commercial milestone payments upon the achievement of certain milestones. In addition, Avenue is obligated to pay a tiered low single-digit royalty on future net sales of ATX-04.

ATX-04 was studied in a 52-week Phase I/II clinical study conducted at Duke University in patients with Pompe disease on baseline ERT and demonstrated that ATX-04 treatment was associated with meaningful improvements across multiple clinically and biologically relevant domains. Treatment with ATX-04 resulted in improvements in six-minute walk distance, reflecting enhanced functional capacity, as well as increased respiratory muscle strength, including maximal inspiratory pressure. ATX-04 was also associated with reductions in muscle glycogen burden assessed by biopsy, increased GAA activity with improved intracellular trafficking, and broad normalization of disease-relevant gene expression. The therapy was generally well tolerated with chronic, titrated dosing.

Based on this data, Avenue is currently preparing a pre-IND meeting to align with the FDA regarding a pivotal study design for Pompe disease, and subsequent to that meeting, will seek to raise the necessary capital to fund the pivotal study and initiate the trial.

AJ201

In February 2023, we announced that we entered into a license agreement (the "AnnJi License Agreement") with AnnJi Pharmaceutical Co., Ltd. ("AnnJi") whereby we obtained an exclusive license from AnnJi to intellectual property rights pertaining to the molecule known as JM17, which activates Nrf1 and Nrf2, enhances androgen receptor degradation and underlies AJ201, a clinical product candidate currently in a Phase 1b/2a clinical trial in the United States ("U.S.") for the treatment of SBMA.

Under the AnnJi License Agreement, in exchange for exclusive rights to the intellectual property underlying the AJ201 product candidate, we paid an initial cash license fee of $3.0 million. The Company issued shares of its common stock equivalent to $1.2 million and was obligated to make additional payments over the course of the AnnJi License Agreement including reimbursement payments of up to $10.8 million in connection with the product's Phase 1b/2a clinical trial.

On April 24, 2025 (the "AnnJi Termination Effective Date"), we and AnnJi entered into a License Termination and Program Transfer Agreement (the "Termination and Transfer Agreement"), pursuant to which: (i) the AnnJi License Agreement (as well as the Subscription Agreement and the Registration Rights Agreement entered into in connection therewith) was terminated with immediate effect; (ii) the parties dismissed all pending dispute resolution proceedings between them and provided mutual releases of claims; (iii) we transferred to AnnJi all of our rights, title and interest to and under the assets arising under the AnnJi License Agreement and otherwise related to AJ201 and (iv) we agreed not to, for 48 months following the date of the Termination and Transfer Agreement, develop, commercialize, manufacture or sell any product competing with AJ201 in the US, Canada, the European Union, Great Britain or Israel. Under the Termination and Transfer Agreement, we repurchased, for an aggregate payment of $1.00, all 14,777 shares of our common stock held by AnnJi, and we also made a payment of $0.2 million to AnnJi as consideration for legal expenses.

Also under the Termination and Transfer Agreement, AnnJi agreed to make payments to us of $1.6 million net of 20% tax withholding, with $0.8 million having been collected in May 2025 and $0.8 million collected in July 2025. The $1.6 million, less the $0.2 million as consideration for legal expenses, was recognized as other revenue as the performance obligations related to rights transferred to AnnJi were satisfied during the quarter ended June 30, 2025. Additionally, Avenue will further be eligible to receive from AnnJi:

- payments totaling up to $5 million in the aggregate upon the occurrence of certain development and regulatory milestone events pertaining to AJ201;
- payments totaling up to $17 million in the aggregate upon AJ201 achieving certain commercial sales milestone events;
- a 1.75% royalty on net sales of AJ201, which royalty percentage is subject to potential diminution in certain circumstances; and
- in the event that AnnJi enters into one or more subsequent licenses of rights to AJ201 with third party licensee(s), 15% of payments received by AnnJi from such licensee(s), up to a cap of $7.5 million, and with a minimum of $4 million owing under certain mechanisms in the event of an approval of a New Drug Application in the U.S. with respect to AJ201.

We are treating the payments related to future milestones and potential royalties as variable consideration that is constrained until the achievement of the specified milestones.

IV Tramadol

We participated in a Type C meeting with the FDA in March 2023 to discuss a proposed study protocol to assess the risk of respiratory depression related to opioid stacking on IV tramadol relative to an approved opioid analgesic. We announced in April 2023 that we received official meeting minutes from the Type C meeting with the FDA. The Type C meeting minutes indicate that we are in agreement with the FDA on a majority of the proposed protocol items and are in active discussion about remaining open items. The minutes indicate that the FDA also agrees that a successful study will support the submission of a complete response to the second Complete Response Letter for IV tramadol pending final agreement on a statistical analysis plan and a full review of the submitted data in the complete response as well as concurrence from the DAAAP.

In January 2024, we announced that we reached final agreement with the FDA on the Phase 3 safety study protocol and statistical analysis approach, including the primary endpoint. The final non-inferiority study is designed to assess the risk of opioid-induced respiratory depression related to opioid stacking on IV tramadol compared to IV morphine. The study would randomize approximately 300 post bunionectomy patients to IV tramadol or IV morphine for pain relief administered during a 48-hour post-operative period. This study design was used in the first of two Phase 3 trials. In a Phase 3 safety study patients would have access to IV hydromorphone, a Schedule II opioid, for rescue of breakthrough pain. The primary endpoint is a composite of elements indicative of respiratory depression.

We are currently evaluating the feasibility of the safety study. The initiation of the study is subject to the Company obtaining the necessary financing or partnership.

BAER-101

The descriptions below are with respect to the former product candidate, BAER-101, which we sold on November 5, 2025. Baergic was a clinical-stage pharmaceutical company founded in December 2019 that focused on the development of pharmaceutical products for the treatment of neurologic disorders. Baergic's pipeline consisted of a single compound, BAER-101, a novel α2/3–subtype-selective GABA A positive allosteric modulator ("PAM").

In November 2025, we sold Baergic to Axsome Therapeutics, Inc. ("Axsome") pursuant to a stock purchase agreement (the "Baergic Agreement") under which Axsome: (i) purchased 100% of the equity interests in Baergic from Avenue and the other stockholders of Baergic for an upfront payment of $0.3 million (less transaction fees) and additional contingent consideration and (ii) received worldwide commercial, development, and manufacturing rights to BAER-101 (now referred to as AXS-17), including all available nonclinical and clinical data.

Avenue and the other former stockholders of Baergic will be eligible to receive from Axsome:

- payments totaling up to $2.5 million in the aggregate upon the occurrence of certain development and regulatory milestone events for the first indication pertaining to AXS-17 and $1.5 million for each indication thereafter;
- payments totaling up to $79 million in aggregate upon AXS-17 achieving certain commercial sales milestone events; and
- a tiered mid-to-high single digit royalty on potential global net sales of AXS-17.

Avenue is eligible to receive approximately 74% of all future payments and royalties payable under the Baergic Agreement.

Other Recent Developments

Reverse Stock Split

On April 25, 2024, we filed the Reverse Split Amendment to the Company's Third Amended and Restated Certificate of Incorporation with the Secretary of State of the State of Delaware to effect a 1-for-75 reverse stock split of our shares of common stock ("Reverse Stock Split"). As a result of the Reverse Stock Split, every 75 shares of common stock outstanding immediately prior to effectiveness of the Reverse Stock Split were combined and converted into one share of common stock without any change in the par value per share. The Reverse Stock Split became effective on April 26, 2024, and the common stock was quoted on the Nasdaq Stock Market on a post-split basis at the open of business on April 26, 2024. No fractional shares were issued in connection with the Reverse Stock Split. Stockholders who would have otherwise been entitled to a fraction of one share of common stock as a result of the Reverse Stock Split instead received one whole share of common stock.

All share and per share information has been retroactively adjusted to give effect to the Reverse Stock Split for all periods presented, unless otherwise indicated.

Nasdaq Delisting

On March 17, 2025, The Nasdaq Stock Market LLC ("Nasdaq") notified the Company that the Nasdaq Hearings Panel (the "Panel") has determined to delist the Company's common stock due to a violation of Nasdaq Listing Rule 5550(b)(1), which requires companies listed on The Nasdaq Capital Market to maintain stockholders' equity of at least $2,500,000. As a result, trading of the Company's common stock was suspended from Nasdaq at the open of trading on March 19, 2025. On July 18, 2025, we were formally delisted when Nasdaq filed Form 25 with the United States Securities and Exchange Commission (the "SEC"). As a result, the common stock of the Company ceased to be registered pursuant to Section 12(b) of the Securities Act and was immediately deemed registered pursuant to Section 12(g) of the Securities Act.

The Company's common stock began trading under its current trading symbol ("ATXI") on the OTC Markets system effective with the open of the markets on March 19, 2025. The Company plans to continue to file its required periodic reports and other filings with the SEC. The Company can provide no assurance that its common stock will continue to trade on this market, whether broker-dealers will continue to provide public quotes of its common stock on this market, or whether the trading volume of its common stock will be sufficient to provide for an efficient trading market for existing and potential holders of its common stock. See "Item 1A. Risk Factors" under "The OTC Pink Open Market is a thinly traded market lacking in liquidity, which could make it difficult for our stockholders to sell their shares of common stock," and "Our stock price and trading volume on the OTC Pink Open Market is subject to price volatility unrelated to us or our operations, which could depress the market price of our common stock and result in rapid and substantial losses for our stockholders, who may lose all or part of their investment."

Critical Accounting Policies and Use of Estimates

Our discussion and analysis of our financial condition and results of operations are based on our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States ("U.S. GAAP"). The preparation of these consolidated financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses and the disclosure of contingent assets and liabilities in our consolidated financial statements. On an ongoing basis, we evaluate our estimates and judgments, including those related to accrued expenses and stock-based compensation. We base our estimates on historical experience, known trends and events and various other factors that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

Research and Development

Research and development costs are expensed as incurred. Advance payments for goods and services that will be used in future research and development activities are expensed when the activity has been performed or when the goods have been received rather than when the payment is made. Upfront and milestone payments due to third parties that perform research and development services on our behalf will be expensed as services are rendered or when the milestone is achieved. Costs incurred in obtaining technology licenses are charged to research and development expense if the technology licensed has not reached technological feasibility and has no alternative future use.

Research and development costs primarily consist of personnel related expenses, including salaries, benefits, travel, and other related expenses, stock-based compensation, payments made to third parties for license and milestone costs related to in-licensed products and technology, payments made to third party contract research organizations for preclinical and clinical studies, investigative sites for clinical trials, consultants, the cost of acquiring and manufacturing clinical trial materials, costs associated with regulatory filings and patents, laboratory costs and other supplies.

Costs incurred in obtaining technology licenses are charged to research and development expense if the technology licensed has not reached commercial feasibility and has no alternative future use. The licenses purchased by us require substantial completion of research and development, regulatory and marketing approval efforts in order to reach commercial feasibility and has no alternative future use. Accordingly, the total purchase price for the licenses acquired are reflected as research and development.

Stock-Based Compensation

We expense stock-based compensation to employees, consultants and board members over the requisite service period based on the estimated grant-date fair value of the awards. Stock-based award expense is recognized over the requisite service period for each separately vesting tranche of the award.

The assumptions used in calculating the fair value of stock-based awards represent management's best estimates and involve inherent uncertainties and the application of management's judgment.

Warrants

We have issued freestanding warrants to purchase shares of our common stock in connection with financing activities and account for them in accordance with applicable accounting guidance as either liabilities or as equity instruments depending on the specific terms of the warrant agreements. Our outstanding common stock warrants issued in connection with the equity financings completed in 2022 are classified as liabilities in the consolidated balance sheet as they contain terms for redemption of the underlying security that are outside our control. We use the Black-Scholes option pricing model to value warrants, which requires management to estimate inputs including expected volatility and expected term, and is most significantly impacted by our common stock price. These inputs are inherently subjective and require significant analysis and judgment to develop. The fair value of all warrants is re-measured at each financial reporting date with any changes in fair value being recognized in change in fair value of warrant liabilities, a component of other income (expense), in the consolidated statements of operations and comprehensive income (loss). We will continue to re-measure the fair value of the warrant liabilities until exercise or expiration of the related warrant. Equity-classified warrants are recorded within equity and are not remeasured.

Recently Adopted Accounting Standards

See Note 2 to our consolidated financial statements included herein for a full description of recent accounting pronouncements including the respective expected dates of adoption and expected effects on results of operations and financial condition.

Smaller Reporting Company Status

We are a “smaller reporting company,” meaning that either (i) the market value of our shares held by non-affiliates is less than $250 million or (ii) the market value of our shares held by non-affiliates is less than $700 million and our annual revenue was less than $100 million during the most recently completed fiscal year. We may continue to be a smaller reporting company if either (i) the market value of our shares held by non-affiliates is less than $250 million or (ii) our annual revenue was less than $100 million during the most recently completed fiscal year and the market value of our shares held by non-affiliates is less than $700 million. As a smaller reporting company, we may choose to present only the two most recent fiscal years of financial statements in our Annual Report on Form 10-K, have reduced disclosure obligations regarding executive compensation, and smaller reporting companies are permitted to delay adoption of certain recent accounting pronouncements discussed in Note 2 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Results of Operations

Comparison of the Years Ended December 31, 2025 and 2024

	For The Years Ended December 31,		Change	
($ in thousands)	**2025**	**2024**	**$**	**%**
Revenue				
Other revenue	$ 1,404	$ —	$ 1,404	100%
Operating expenses:				
Research and development	$ 1,037	$ 6,645	$ (5,608)	-84%
General and administrative	3,653	4,638	(985)	-21%
Gain on sale of Baergic	(203)	—	(203)	100%
Total operating expenses	4,487	11,283	(6,796)	-60%
Loss from operations	(3,083)	(11,283)	8,200	-73%
Interest income	(121)	(176)	55	-31%
Loss on common stock warrant liabilities	—	759	(759)	-100%
Change in fair value of warrant liabilities	(15)	(170)	155	-91%
Net loss	$ **(2,947)**	$ **(11,696)**	$ **8,749**	**-75%**
Net loss attributable to non-controlling interests	(38)	(44)	6	-14%
Net loss attributable to common stockholders	$ **(2,909)**	$ **(11,652)**	$ **8,743**	**-75%**

Revenue

For the year ended December 31, 2025, revenue was $1.4 million, comprised of payments received from AnnJi related to the termination of the license agreement for AJ201. There was no comparable revenue recorded in 2024.

Research and Development Expenses

For the years ended December 31, 2025 and 2024, research and development expenses were $1.0 million and $6.6 million, respectively. The $5.6 million decrease primarily reflects a decrease of $5.2 million in pre-clinical and clinical development costs for AJ201, prior to its return to AnnJi, $0.2 million decrease in non-cash stock compensation costs, $0.1 million decrease in personnel costs, and $0.1 million decrease in manufacturing expenses.

We expect our research and development activities to remain flat or increase as we continue to advance our portfolio, reflecting costs associated with the following:

- employee-related expenses;
- license fees and milestone payments related to in-licensed products and technologies;
- expenses incurred under agreements with contract research organizations, investigative sites and consultants that conduct our clinical trials;
- the cost of acquiring and manufacturing clinical trial materials; and
- costs associated with non-clinical activities, and regulatory approvals.

General and Administrative Expenses

General and administrative expenses consist principally of professional fees for legal and consulting services, market research, personnel-related costs, public company reporting related costs and other general operating expenses not otherwise included in research and development expenses. We expect our general and administrative costs to continue as we seek potential regulatory approval and potential commercialization of our product candidates.

For the years ended December 31, 2025 and 2024, general and administrative expenses were $3.7 million and $4.6 million, respectively. The $0.9 million decrease primarily reflects a decrease of $0.5 million in professional fees and $0.4 million in non-cash stock compensation costs.

Gain on Sale of Baergic

During the year ended 2025, a gain of $0.2 million was recognized on the sale of Baergic to Axsome in November 2025.

Interest Income

Interest income was $0.1 million and $0.2 million for the years ended December 31, 2025 and 2024, respectively.

Loss on common stock warrant liabilities

The loss on common stock warrant liabilities was $0 and $0.8 million for the year ended December 31, 2025 and 2024, respectively. In 2024, the Series A common stock warrants, Series B common stock warrants, Series C common stock warrants and Series D common stock warrants had a fair value of $0.8 million allocated to the liability classified warrants to purchase shares of our common stock originally issued in October 2022 and January 2023 at the time of issuance as a cost of inducement, which was recorded as a loss on settlement of common stock warrant liabilities.

Change in fair value of warrant liabilities

Change in the estimated fair value of warrant liabilities is comprised of the fair value remeasurement of the liabilities associated with the October 2022 Public Offering and January 2023 Registered Direct Offering and Private Placement. We account for warrants as either equity-classified or liability-classified instruments based on an assessment of the warrant's specific terms and applicable authoritative guidance in ASC 480 and 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 our own common stock, 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. The approach requires management to estimate inputs including expected volatility and expected term and is most significantly impacted by the volatility of the Company's common stock price.

For issued or modified warrants that meet all of the criteria for equity classification, the warrants are required to be recorded as a component of additional paid-in capital at the time of issuance. For issued or modified warrants that do not meet all the criteria for equity classification, the warrants are required to be recorded at their initial fair value on the date of issuance, and each balance sheet date thereafter. Changes in the estimated fair value of the warrants are recognized as a non-cash gain or loss on the consolidated statements of operations. The fair value of the warrants was estimated using the Black-Scholes Model. (see Note 8 to our consolidated financial statements included herein).

Liquidity and Capital Resources

At December 31, 2025, we had $2.9 million in cash and cash equivalents as compared to $2.6 million at December 31, 2024. To date, we have funded our operations primarily with proceeds from various public and private offerings of our common stock. We expect that our expenses will increase compared to our most recent fiscal year as we advance our candidates through clinical development and ultimately regulatory approval, and seek opportunities to license or acquire additional products. We will require additional financing to carry out our business plan and implement our strategy, and continue to analyze various alternatives, including potentially obtaining lines of credit, debt or equity financings. We cannot be sure that any additional funding, if needed, will be available on terms favorable to us or at all. Our common stock was suspended from trading on the Nasdaq Capital Market on March 17, 2025 and subsequently has been formally delisted as of July 18, 2025. Since March 18, 2025, our common stock has been quoted on the over-the-counter market (OTCID) under the symbol "ATXI". The delisting may make it more difficult for us to obtain additional funding. For example, we are no longer eligible to use our shelf registration statement on Form S-3, which means we cannot access our ATM facility under the At the Market Offering Agreement (the "ATM Agreement") with H.C. Wainwright & Co. LLC dated May 10, 2024. If we obtain funding through a strategic collaboration or licensing arrangement, we may be required to relinquish our rights to our product candidates or marketing territories. Without additional capital, we do not expect our cash will be sufficient to fund our projected operating requirements or allow us to fund our operating plan for more than 12 months from the date of issuance of the accompanying consolidated financial statements. We regularly evaluate market conditions, our liquidity profile, and various financing alternatives for opportunities to enhance our capital structure.

Cash Flows for the Years Ended December 31, 2025 and 2024

	For The Years Ended December 31,	
($ in thousands)	**2025**	**2024**
Total cash and cash equivalents (used in)/provided by:		
Operating activities	$ (1,833)	$ (9,026)
Financing activities	2,094	9,837
Net increase in cash and cash equivalents	$ 261	$ 811

Operating Activities

Net cash and cash equivalents used in operating activities was approximately $1.8 million for the year ended December 31, 2025, primarily comprised of our $2.9 million net loss partially offset by $0.7 million in share-based compensation, an increase of $0.1 million in operating assets and liabilities, and $0.1 million for common shares issued or issuable to Fortress.

Net cash and cash equivalents used in operating activities was approximately $9.0 million for the year ended December 31, 2024, primarily comprised of our $11.7 million net loss, $0.2 million reduction in common shares issuable to Fortress and $0.2 million change in fair value of warrant liabilities, partially offset by a $0.8 million loss on settlement of common stock warrant liabilities, an increase of $0.1 million in operating assets and liabilities, $0.8 million for common shares issued to Fortress and $1.2 million in share-based compensation.

Financing Activities

Net cash provided by financing activities for the year ended December 31, 2025 was $2.1 million, primarily due to $2.1 million in net proceeds from the sale of common stock issued pursuant to the ATM Agreement.

Net cash provided by financing activities for the year ended December 31, 2024 was $9.8 million, primarily due to $8.2 million in net proceeds from the inducement offer letter agreements we entered into in January 2024 and April 2024 and $1.6 million in net proceeds received from the sale of common stock pursuant to the ATM Agreement.

Sources of Liquidity

January 2024 Warrant Inducement and Private Placement

On January 5, 2024, we entered into (i) an inducement offer letter agreement (the "January 2023 Investor Inducement Letter") with a certain investor (the "January 2023 Investor") in connection with certain outstanding January 2023 Warrants and (ii) an inducement offer letter agreement (the "November 2023 Investor Inducement Letter Agreement" and, together with the January 2023 Investor Inducement Letter, the "Inducement Letters") with certain investors (the "November 2023 Investors" and, together with the January 2023 Investor, the "Holders") in connection with certain outstanding November 2023 Warrants (and, together with the January 2023 Warrants, the "Existing Warrants") to purchase up to an aggregate of 194,667 shares of common stock. The January 2023 Warrants had an exercise price of $116.25 per share, and the November 2023 Warrants had an exercise price of $22.545 per share. Pursuant to the Inducement Letters, (i) the January 2023 Investor agreed to exercise its January 2023 Warrants for cash at a reduced exercise price of $22.545 per share and (ii) the November 2023 Investors agreed to exercise their November 2023 Warrants for cash at the existing exercise price of $22.545, in each case in consideration for our agreement to issue in a private placement (x) Series A Warrants to purchase up to 220,538 shares of common stock and (y) Series B Warrants to purchase up to 220,538 shares of common stock (together, the "New Jan 2024 Warrants"). The gross proceeds to us from the exercise of the warrants was approximately $5.0 million, before deducting placement agent fees and offering costs.

Approximately $4.3 million of the New Jan 2024 Warrants fair value was allocated to the November 2023 Warrants and deemed to be a dividend and recorded to additional paid-in-capital because we had an accumulated deficit on the exercise date. The deemed dividend was included in net loss attributable to common stockholders in the calculation of net loss per share in the condensed consolidated statements of operations (See Note 2 to our consolidated financial statements included herein).

May 2024 Warrant Inducement and Private Placement

On April 28, 2024, we entered into inducement offer letter agreements (the "May 2024 Warrant Inducement") with (i) certain investors (the "October 2022 Investors") that held certain outstanding October 2022 Warrants to purchase up to an aggregate of 27,271 shares of the Company's common stock; (ii) certain investors (the "May Inducement November 2023 Investors") that hold November 2023 Warrants to purchase up to an aggregate of 221,333 shares of common stock; and (iii) certain investors (the "January 2024 Investors" and, collectively with the October 2022 Investors and May Inducement November 2023 Investors, the "May 2024 Holders") that hold January 2024 Warrants to purchase up to an aggregate of 441,076 shares of common stock. We refer to the exercised January 2024 Warrants collectively with the October 2022 Warrants and November 2023 Warrants as the "May 2024 Exercised Warrants"). The October 2022 Warrants had an exercise price of $116.25 per share, the November 2023 Warrants had an exercise price of $22.545 per share, and the January 2024 Warrants had an exercise price of $22.545 per share. Pursuant to the May 2024 Warrant Inducement, the May 2024 Holders agreed to exercise for cash the May 2024 Exercised Warrants at a reduced exercise price of $6.20 per share in partial consideration for our agreement to issue in a private placement (x) new Series C Common Stock purchase warrants (the "New Series C Warrants") to purchase up to 689,680 shares of common stock (the "New Series C Warrant Shares") and (y) new Series D Common Stock Purchase Warrants (the "New Series D Warrants" and, together with the New Series C Warrants, the "May 2024 Warrants") to purchase up to 689,680 shares of common stock (the "New Series D Warrant Shares" and, together with the New Series C Warrant Shares, the "May 2024 Warrant Shares"). The May 2024 Holders also agreed to pay us $0.125 per May 2024 Warrant Share (the "Additional Warrant Consideration"). The closing of the transactions contemplated pursuant to the May 2024 Warrant Inducement occurred on May 1, 2024. The May 2024 Warrants meet the criteria for permanent equity classification.

The October 2022 Warrants, which were liability classified, were revalued on May 1, 2024 using the Black-Scholes Model to calculate the difference in fair value as a result of the change in exercise price. The difference in fair value of $0.1 million was recorded as a change in fair value of warrant liabilities in the consolidated statements of operations (see Note 8). The issuance of the May 2024 Warrants was considered as part of the cost of the inducement and the May 2024 Warrants were valued using the Black-Scholes Model with the fair value being allocated between the October 2022 Warrants, November 2023 Warrants and January 2024 Warrants on a weighted basis. The approximately $0.2 million of the May 2024 Warrants fair value was allocated to the October 2022 warrants and recorded as a loss on common stock warrant liabilities in the consolidated statements of operations with a corresponding offset to additional paid-in-capital. Approximately $4.5 million of the May 2024 Warrant fair value was allocated to the November 2023 Warrants and January 2024 Warrants and deemed to be a dividend and recorded to additional paid-in-capital because the Company had an accumulated deficit on the exercise date. The deemed dividend was included in net loss attributable to common stockholders in the calculation of net loss per share in the consolidated statements of operations (see Note 2 to our consolidated financial statements included herein).

We received net proceeds of approximately $3.7 million from the exercise of the May 2024 Exercised Warrants by the May 2024 Holders and the payment of the Additional Warrant Consideration, after deducting placement agent fees and other expenses payable by us.

We filed a registration statement on Form S-3 (File No. 333-279125) with the SEC providing for the resale of the May 2024 New Warrant Shares (the "May 2024 Resale Registration Statement") on May 6, 2024, which was declared effective on May 10, 2024. Due to our delisting from Nasdaq, we are no longer eligible to use shelf registration statement on Form S-3.

ATM Facility

On May 10, 2024, we entered into an At the Market Offering Agreement (the "ATM Agreement") with H.C. Wainwright & Co. LLC (the "ATM Manager") under which we may offer and sell, from time to time at its sole discretion, shares of our common stock, par value $0.0001 per share, through or to the ATM Manager. The offer and sale of the shares will be made pursuant to a previously filed shelf registration statement on Form S-3 (File No. 333-261520), originally filed with the SEC on December 7, 2021 and declared effective by the SEC on December 10, 2021, and the related prospectus supplement dated May 10, 2024 (including such replacement registration statement as may be filed with the SEC, the "ATM Registration Statement") and filed with the SEC on such date pursuant to Rule 424(b) under the Securities Act of 1933, as amended (the "Securities Act"). The replacement registration statement was later withdrawn. As a result of the limitations of General Instruction I.B.6 of Form S-3, we may sell up to a maximum of $3,850,000 of our shares pursuant to the ATM Agreement. On December 15, 2025, we filed a Post-Effective Amendment No. 1 for Form S-3 on Form S-1 (File No. 333-279125), which Post-Effective Amendment was declared effective on December 16, 2025.

Under the ATM Agreement, the ATM Manager may sell shares by any method permitted by law deemed to be an "at the market offering" as defined in Rule 415(a)(4) under the Securities Act. The ATM Manager will use commercially reasonable efforts to sell the shares from time to time, based upon instructions from us (including any price, time or size limits or other customary parameters or conditions we may impose). We agreed to pay the ATM Manager a commission of 3.0% of the gross proceeds from the sales of shares sold through the ATM Manager under the ATM Agreement and has provided the ATM Manager with customary indemnification and contribution rights. We also agreed to reimburse the ATM Manager for certain expenses incurred in connection with the ATM Agreement. We and the ATM Manager may each terminate the ATM Agreement at any time upon specified prior written notice.

For the year ended December 31, 2025, we sold an aggregate of 938,990 shares of our common stock pursuant to the ATM Agreement, resulting in net proceeds of approximately $2.1 million, after deducting underwriting discounts. Avenue is no longer able to utilize the Avenue ATM as a result of the delisting of its stock from trading on Nasdaq.

Contractual Obligations and Commitments

We enter into contracts in the normal course of business with licensors, CROs, contract manufacturing organizations (CMOs) and other third parties for the procurement of various products and services, including without limitation biopharmaceutical development, biologic assay development, commercialization, clinical and preclinical development, clinical trials management, pharmacovigilance and manufacturing and supply. These contracts typically do not contain minimum purchase commitments (although they may) and are generally terminable by us upon written notice. Payments due upon termination or cancelation/delay consist of payments for services provided or expenses incurred, including non-cancelable obligations of our service providers, up to the date of cancellation; in certain cases, our contractual arrangements with CROs and CMOs include cancelation and/or delay fees and penalties.

We have obligations under various license agreements to make future payments to third parties that become due and payable on the achievement of certain

development, regulatory, and commercial milestones (such as clinical trial development, product approval by the FDA or other regulatory agencies, product launch, or product sales). These commitments include:

We entered into a license agreement with Revogenex, pursuant to which we received a worldwide exclusive license to make, market and sell IV tramadol. A regulatory milestone of $3.0 million is payable on approval and high single-digit to low double-digit royalties are payable on future net sales.

We entered into a share repurchase agreement with InvaGen, which requires us to pay InvaGen seven and a half (7.5%) of the proceeds of future financings, as defined in the agreement, up to $4.0 million in aggregate. For the years ended December 31, 2025 and 2024, we have paid $0.2 million and $0.7 million, respectively, towards this aggregate amount. Approximately $1.4 million in aggregate has been paid to InvaGen under the Share Repurchase Agreement as of December 31, 2025.

We entered into a license agreement with Duke University (the "ATX-04 License Agreement"), whereby the Company obtained from Duke an exclusive, worldwide license to certain patents and know-how for the development and commercialization of products, including ATX-04 (clenbuterol), for the treatment of lysosomal storage diseases. Under the ATX-04 License Agreement, the Company made an upfront payment, reimbursed certain patent expenses to Duke, and has an obligation to make development, regulatory, and commercial milestone payments upon the achievement of certain milestones. In addition, the Company is obligated to pay a tiered low single-digit royalty on future net sales of licensed products.

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

We are a smaller reporting company as defined by Rule 12b-2 of the Exchange Act and are not required to provide the information otherwise required under this item.

Item 8. Financial Statements and Supplementary Data.

The information required by this Item is set forth in our consolidated financial statements and notes thereto beginning at page F-1 of this Annual Report on Form 10-K.

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

None.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures. As of December 31, 2025, management carried out, under the supervision and with the participation of our principal executive officer and principal financial officer, an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act). Our disclosure controls and procedures are designed to provide reasonable assurance that information we are required to disclose in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in applicable rules and forms. Based upon that evaluation, our principal executive officer and principal financial officer concluded that, as of December 31, 2025, our disclosure controls and procedures were effective.

Management's Report on Internal Control over Financial Reporting. Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rule 13a-15(f) or Rule 15d-15(f) under the Exchange Act). Our management assessed the effectiveness of our internal control over financial reporting as of December 31, 2025. In making this assessment, our management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission, known as COSO, in Internal Control-Integrated Framework (2013). Our management has concluded that, as of December 31, 2025, our internal control over financial reporting was effective based on these criteria.

Changes in Internal Control Over Financial Reporting. There were no changes in our internal control over financial reporting during the most recent fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Limitations on the Effectiveness of Controls. Our management, including our principal executive officer and principal financial officer, does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within our company have been detected.

Item 9B. Other Information

During the three months ended December 31, 2025, none of our directors or officers (as defined in Rule 16a-1(f) of the Securities Exchange Act of 1934, as amended) adopted, modified or terminated a Rule 10b5-1 trading arrangement or non-Rule 10b5-1 trading arrangement (as such terms are defined in Item 408 of Regulation S-K of the Securities Act of 1933).

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not Applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The following table sets forth information regarding our directors, including their ages as of March 31, 2026:

Name	Age	Position	Director Since
Jay Kranzler, M.D., PhD	68	Chairman of the Board of Directors	2017
Faith Charles	64	Director	2022
Neil Herskowitz	69	Director	2015
Lindsay A. Rosenwald, M.D.	70	Director	2015
Curtis Oltmans	62	Director	2021
Alexandra MacLean, M.D.	59	Director	2023

Information About our Directors

Jay Kranzler, M.D., PhD - Chairman

Dr. Kranzler, 68, joined our Board of Directors ("Board") in February 2017 and was appointed Chairman in March 2023. Dr. Kranzler has been a Founder, Chief Executive Officer, Board Member, and Advisor to leading life science companies for over 30 years. He is currently Chairman and Chief Executive Officer of Urica Therapeutics, Inc., a clinical-stage biopharmaceutical company and subsidiary of Fortress Biotech, Inc. ("Fortress"), where he has served since October 2022. He is also currently a board member of multiple private companies, including Pastorus Inc., Navitas Pharma, and ImmunoBrain Checkpoint, each focused on the research and experimental development of therapeutics. Dr. Kranzler started his career at McKinsey & Company where he was instrumental in establishing that firm's pharmaceutical practice. He was a founder of Perception Neuroscience (acquired by ATAI Life Sciences) and also served as CEO of Cytel Corporation, a company focused on the development of immunomodulatory drugs. Following Cytel, Dr. Kranzler became the CEO of Cypress Bioscience, where he was credited for the development of Savella™ (milnacipran) for the treatment of fibromyalgia. Dr. Kranzler was also Vice President, Head of Worldwide External R&D Innovation and Strategic Investments at Pfizer. During his career, Dr. Kranzler has developed drugs, medical devices, as well as diagnostics, and is the inventor on multiple patents. Dr. Kranzler graduated from Yale University School of Medicine with MD and PhD degrees with a focus in psychopharmacology and he currently serves as an Adjunct Professor at the NYU Langone School of Medicine and Stern School of Business. We believe that Dr. Kranzler is qualified to serve on our Board due to his management experience, his service as an executive of biopharmaceutical companies and his knowledge of our business and industry.

Faith Charles

Faith L. Charles, 64, has been a corporate transactions and securities partner at the law firm of Thompson Hine, LLP since 2010. She leads Thompson Hine's Life Sciences practice and co-heads the securities practice, advising public and emerging biotech and pharmaceutical companies in the U.S. and internationally. Ms. Charles negotiates complex private and public financing transactions, mergers and acquisitions, licensing transactions and strategic collaborations. She serves as outside counsel to a myriad of life sciences companies and is known in the industry as an astute business advisor, providing valuable insights into capital markets, corporate governance and strategic development. Since March 2021, Ms. Charles has served on the Board of Directors and various committees of Abeona Therapeutics Inc. (Nasdaq: ABEO), a commercial-stage biopharmaceutical company developing cell and gene therapies for life-threatening rare genetic diseases. She has also served as the Chair of the Board of Directors of CNS Pharmaceuticals, Inc. (Nasdaq: CNSP) since December 2022. From 2018 until October 2021, Ms. Charles served on the Board of Directors of Entera Bio Ltd. (Nasdaq: ENTX), a publicly-traded biotechnology company and from September 2023 until April 2025, on the board of Conduit Pharmaceuticals, Inc. (Nasdaq: CDT). Ms. Charles founded the Women in Bio Metro New York chapter and chaired the chapter for five years and served on the national board of Women in Bio. She has been recognized as a Life Sciences Star by Euromoney's LMG Life Sciences, has been named a BTI Client Service All-Star, and was named by Crain's New York Business to the list of 2020 Notable Women in the Law. Ms. Charles holds a J.D. degree from The George Washington University Law School and a B.A. in Psychology from Barnard College, Columbia University. Ms. Charles is a graduate of Women in Bio's Boardroom Ready Program, an Executive Education Program taught by The George Washington University School of Business. We believe that Ms. Charles is qualified to serve on our Board due to her expertise in legal matters relevant to our business, including in the life sciences industries.

Neil Herskowitz

Mr. Herskowitz, 69, joined our Board in August 2015 and has served as the Chairman of our Audit Committee since September 2016. Mr. Herskowitz has served as the managing member of the ReGen Group of companies, located in New York, since 1998, which include ReGen Capital Investments LLC and Riverside Claims Investments LLC. He has also served as the President of its affiliate, Riverside Claims LLC, since June 2004. Additionally, Mr. Herskowitz served as a Board member of National Holdings, Inc. from 2016 to 2019, and serves as a Board member of Mustang Bio, Inc. (Nasdaq: MBIO) and Journey Medical Corporation (Nasdaq: DERM), each of which are subsidiaries of Fortress, and Checkpoint Therapeutics, Inc. (Nasdaq: CKPT), a former subsidiary of Fortress, until its sale in May 2025. Mr. Herskowitz received a B.B.A. in Finance from Bernard M. Baruch College in 1978. The Board believes, based on Mr. Herskowitz's over 15 years of Audit Committee and Board experience in the biotech industry, that Mr. Herskowitz is qualified to serve as a member of our Board and as the Chairman of our Audit Committee.

Alexandra MacLean, M.D.

Dr. MacLean, 59, joined our Board in March 2023 and has served as Chief Executive Officer of the Company since August 2022. She previously served as Entrepreneur in Residence at Fortress, (Nasdaq: FBIO), the Company's parent company, from November 2021 through July 2022. She previously served as General Partner and Principal at TVM Capital GmbH, an international life sciences venture capital firm, from January 2020 through October 2021; as Head of Licensing and Business Development at Imbrium Therapeutics L.P., a clinical-stage biopharmaceutical company and a subsidiary of Purdue Pharma, L.P. ("Purdue"), from January 2019 through January 2020; and in various roles at Purdue, a privately held pharmaceutical company, from 2015 to January 2019. Prior to joining Purdue, she served at Plasma Surgical, a medical device company, from 2014 to 2015, and Covidien, a medical devices and supplies manufacturer later acquired by Medtronic plc (NYSE: MDT), from 2010 to 2013. She began her career in the pharmaceutical industry at Merck & Co. (NYSE: MRK), a pharmaceutical company, where she worked from 2008 to 2010. Dr. MacLean holds an M.D. degree from Columbia University, Vagelos College of Physicians and Surgeons, an MBA from the University of Colorado – Boulder, and an M.Phil. from the University of Cambridge in History of Science. She obtained a B.Sc. in Physiology from McGill University. The Board believes, based on Dr. MacLean's pharmaceutical industry experience and medical training, that Dr. MacLean has the appropriate set of skills to serve as a member of the Board.

Curtis Oltmans

Mr. Oltmans, 62, joined our Board in April 2021 and is currently Chief Legal Officer of Fulcrum Therapeutics, Inc. (Nasdaq: FULC), where he has served since November 2020, and has over 30 years of experience in corporate law including senior management positions in legal departments at several leading pharmaceutical and biotechnology companies. Prior to Fulcrum Therapeutics, Inc, he served as Vice President, Head of Litigation at DaVita Kidney Care, Inc. where he was responsible for all litigation, workers' compensation and employee safety matters. Prior to DaVita Kidney Care, Mr. Oltmans was Executive Vice President, General Counsel and Corporate Secretary at Array BioPharma, Inc. (Nasdaq: ARRY), where he oversaw all legal, corporate governance, patent and compliance matters. He previously served as Corporate Vice President and General Counsel for Novo Nordisk, Inc. (NYSE: NVO), North America. He was responsible for strategic support in areas including market access, government affairs, communications and product marketing. He has also served as Assistant General Counsel for Eli Lilly and Company after beginning his legal career supporting clients in pharmaceutical and medical device litigation matters. Mr. Oltmans has received a certification from the National Association of Corporate Directors for Oversight of Cybersecurity. He served on the Board of Trustees for the Mercer County Boy's and Girl's Club. Mr. Oltmans has completed the CERT National Association of Corporate Directors certificate for Cybersecurity Oversight. Mr. Oltmans received a B.A. in political science from the University of Nebraska and his J.D. from the University of Nebraska College of Law. Based on Mr. Oltmans' pharmaceutical industry experience, the Board believes that Mr. Oltmans has the appropriate set of skills to serve as a member of the Board.

Lindsay A. Rosenwald, M.D.

Dr. Rosenwald, 70, has served on our Board since inception and served as our Executive Chairman of the Board until March 2023. Dr. Rosenwald has also served as Chairman, President and Chief Executive Officer of Fortress (Nasdaq: FBIO), the Company's parent company, since December 2013, and as a member of Fortress' board since October 2009. Additionally, Dr. Rosenwald serves as a member of the board of directors of each of Fortress' private subsidiaries (and has so served in each case since company inception). He has served as the Chairman of Journey Medical Corporation (Nasdaq: DERM), a subsidiary of Fortress, since October 2014, a director of Mustang Bio, Inc. (Nasdaq: MBIO), a subsidiary of Fortress, since March 2015, and a director of Checkpoint Therapeutics, Inc., a former subsidiary of Fortress, since March 2015 until its sale in May 2025. From 1991 to 2008, Dr. Rosenwald served as the Chairman of Paramount BioCapital, Inc. The Board believes that Dr. Rosenwald's extensive experience over the last 35 years in founding, capitalizing and managing numerous public and private biopharmaceutical companies qualifies him uniquely to serve on the Company's Board. Dr. Rosenwald received his B.S. in finance from Pennsylvania State University and his M.D. from Temple University School of Medicine.

The following table sets forth information regarding our executive officers, including their ages as of March 24, 2026:

Name	Age	Position
Alexandra MacLean, M.D.	59	Chief Executive Officer
David Jin	36	Interim Chief Financial Officer and Chief Operating Officer

Information about our Executive Officers

Alexandra MacLean, M.D. — Chief Executive Officer

See Dr. MacLean's biography above in the section titled *"Information About our Directors."*

David Jin - Interim Chief Financial Officer and Chief Operating Officer

Mr. Jin, 36, has served as Interim Chief Financial Officer of the Company since May 2022 and as the Company's Chief Operating Officer since March 2022. He previously served as the Interim Chief Executive Officer of the Company from March 2022 until August 2022. He also serves as Chief Financial Officer and Head of Corporate Development at Fortress (Nasdaq: FBIO), the Company's parent company. Since October 2024, Mr. Jin has also served on the board of directors of Mustang Bio, Inc. (Nasdaq: MBIO), a majority-controlled subsidiary of Fortress. Since September 2025, Mr. Jin has served on the board of directors of Crystalys Therapeutics, Inc. Prior to beginning his service at Fortress, he was a member of the Private Equity group at Barings focused on control equity and asset-based investments in pharma and biotech. Before that, he was Director of Corporate Development at Sorrento Therapeutics, Inc., Vice President of Healthcare Investment Banking at FBR & Co., and began his career in management consulting at IMS Health (now IQVIA). Mr. Jin has a Bachelor of Science degree in Industrial Engineering & Management Sciences with a double-major in Mathematical Methods in the Social Sciences from Northwestern University.

Family Relationships

There are no family relationships between or among our directors and executive officers.

Board Leadership Structure

Our Bylaws provide that our Board shall consist of between one to nine directors, and such number of directors within this range may be determined from time to time by resolution of our Board or our stockholders. The Board most recently set the number of directors at six members.

The Board does not have a formal policy regarding the separation of the roles of Chief Executive Officer and Chairman, as the Board believes that it is in the best interests of the Company to make that determination based on the direction of the Company and the current membership of the Board. The Board has determined that at present having Dr. Kranzler serve as Chairman and Dr. MacLean serve as our Chief Executive Officer is in the best interest of the Company's stockholders.

Role of Board in Risk Oversight

The Company has a risk management program overseen by our Chief Executive Officer and the Board. Dr. MacLean and management identify material risks and prioritize them for our Board. Our Board regularly reviews information regarding our credit, liquidity, operations, and compliance as well as the risks associated with each.

Board Committees

Our Board has established an Audit Committee and a Compensation Committee. The composition and responsibilities of each of the committees of our Board are described below.

Audit Committee

The Audit Committee currently consists of Neil Herskowitz, Curtis Oltmans, and Faith Charles. Mr. Herskowitz serves as the Chairperson of the Audit Committee.

The Audit Committee was formed on May 15, 2017 and held 4 meetings during the fiscal year ended December 31, 2025 and took action by unanimous written consent one time. The duties and responsibilities of the Audit Committee are set forth in the Charter of the Audit Committee which was recently reviewed by our Audit Committee and which is reviewed annually by our Audit Committee. A copy of the Charter of the Audit Committee is available on our website, located at www.avenuetx.com. Among other matters, the duties and responsibilities of the Audit Committee include reviewing and monitoring our financial statements and internal accounting procedures, the selection of our independent registered public accounting firm and consulting with and reviewing the services provided by our independent registered public accounting firm. Our Audit Committee has sole discretion over the retention, compensation, evaluation, and oversight of our independent registered public accounting firm.

The SEC has established rules and regulations regarding the composition of audit committees and the qualifications of audit committee members. Our Board has examined the composition of our Audit Committee and the qualifications of our Audit Committee members in light of the current rules and regulations governing audit committees. Based upon this examination, our Board has determined that each member of our Audit Committee is independent and is otherwise qualified to be a member of our Audit Committee in accordance with the rules of the SEC.

Additionally, the SEC requires that at least one member of the Audit Committee have a "heightened" level of financial and accounting sophistication. Such a person is known as the "audit committee financial expert" under the SEC's rules. Our Board has determined that Mr. Herskowitz is an "audit committee financial expert," as the SEC defines that term, and is an independent member of our Board and our Audit Committee. Please see Neil Herskowitz's biography in the section titled "*Information About our Directors*" above for a description of his relevant experience.

Compensation Committee

The Compensation Committee was formed on May 15, 2017. The Compensation Committee held 1 meeting during the fiscal year ended December 31, 2025 and took action by unanimous written consent one time. The Compensation Committee currently consists of Neil Herskowitz and Curtis Oltmans, with Mr. Herskowitz serving as Chairperson. The duties and responsibilities of the Compensation Committee are set forth in the Charter of the Compensation Committee. A copy of the Charter of the Compensation Committee is available on our website, located at www.avenuetx.com, and is reviewed annually by the Compensation Committee. As discussed in its charter, among other things, the duties and responsibilities of the Compensation Committee include annually reviewing and approving corporate goals and objectives relevant to the compensation of our Chief Executive Officer, reviewing and approving, or making recommendations to our Board with respect to, the compensation of our Chief Executive Officer and our other executive officers, overseeing an the evaluation of our senior executives, and overseeing and administering our cash and equity incentive plans. The Compensation Committee applies discretion in the determination of individual executive compensation packages to ensure compliance with the Company's compensation philosophy. The Chief Executive Officer makes recommendations to the Compensation Committee with respect to the compensation packages for officers other than herself. The Compensation Committee may delegate its authority to grant awards to certain employees, and within specified parameters under the Avenue Therapeutics, Inc. 2015 Incentive Plan (as amended, the "2015 Plan"), to a special committee consisting of one or more directors who may but need not be officers of the Company. As of the date of this Annual Report on Form 10-K, however, the Compensation Committee had not delegated any such authority. The Board may engage a compensation consultant to conduct a review of its executive compensation programs in 2026. The Committee did not engage a compensation consultant in 2025. Our Board has examined the composition of our Compensation Committee and, based upon this examination, our Board has determined that each member of our Compensation Committee is independent.

Nominating Process

We do not currently have a nominating committee or any other committee serving a similar function. Director nominations are approved by a vote of a majority of our independent directors. Although we do not have a written charter in place to select director nominees, our Board has adopted resolutions regarding the director nomination process. We believe that the current process in place functions effectively to select director nominees who will be valuable members of our Board.

We identify potential nominees to serve as directors through a variety of business contacts, including current executive officers, directors, community leaders and stockholders. We may, to the extent the Board deems appropriate, retain a professional search firm and other advisors to identify potential nominees.

We will also consider candidates recommended by stockholders for nomination to our Board. A stockholder who wishes to recommend a candidate for nomination to our Board must submit such recommendation to our Corporate Secretary, David Jin, at our offices located at 1111 Kane Concourse, Suite 301, Bay Harbor Islands, Florida 33154. Any recommendation must be received not less than 50 calendar days nor more than 90 calendar days before the anniversary date of the previous year's annual meeting. All stockholder recommendations of candidates for nomination for election to our Board must be in writing and must set forth the following: (i) the candidate's name, age, business address, and other contact information, (ii) the number of shares of common stock, par value $0.0001 per share ("Common Stock"), beneficially owned by the candidate, (iii) a complete description of the candidate's qualifications, experience, background and affiliations, as would be required to be disclosed in the proxy statement pursuant to Schedule 14A under the Exchange Act, (iv) a sworn or certified statement by the candidate in which he or she consents to being named in the proxy statement as a nominee and to serve as director if elected, and (v) the name and address of the stockholder(s) of record making such a recommendation.

Code of Business Conduct and Ethics

We have adopted a Code of Ethics (the "Code"), which applies to all of our directors, officers and employees. The Code includes guidelines dealing with the ethical handling of conflicts of interest, compliance with federal and state laws, financial reporting, and our proprietary information. The Code also contains procedures for dealing with and reporting violations of the Code. We have posted our Code on our website, located at www.avenuetx.com.

Insider Trading Policy; Policy Prohibiting Hedging and Speculative Trading

We have adopted an Insider Trading Policy that governs the purchase, sale, and other dispositions of our securities on the basis of material non-public information by directors, officers, employees, consultants and contractors. We believe these policies and procedures are reasonably designed to promote compliance with insider trading laws, rules and regulations, and applicable Nasdaq listing standards. A copy of our Insider Trading Policy is filed as an exhibit to this Form 10-K.

Pursuant to our Insider Trading Policy, our officers, directors, and employees are also prohibited from engaging in speculative trading, including hedging transactions or short sale transactions with respect to our securities.

Item 11. Executive Compensation

Named Executive Officers

This section discusses the material components of the executive compensation program for our named executive officers ("NEOs").

Summary Compensation Table

As determined in accordance with SEC rules, our “named executive officers” for purposes of this Annual Report on Form 10-K are the two individuals set forth below. The following table sets forth information concerning compensation paid by the Company to its named executive officers for services rendered to it in all capacities during the years ended December 31, 2025 and December 31, 2024.

Name and Principal Position	Year	Salary ($)	Bonus ($)	Stock Awards ($)(1)	Option Awards ($)(1)	Non-equity Incentive Plan Compensation ($)	All Other Compensation ($)(2)	Total ($)
Alexandra MacLean	2025	420,000	—	13,307	—	—	14,000	447,307
Chief Executive Officer	2024	420,000	—	406,300	—	—	13,800	840,100
David Jin	2025	—	—	7,984	—	—	—	7,984
Interim Chief Financial Officer and Chief Operating Officer	2024	—	—	155,350	—	—	—	155,350

(1) Reflects the aggregate grant date fair value of equity-based awards granted during the fiscal year calculated in accordance with FASB ASC Topic 718, determined using the assumptions described in Note 7. In November 2025, Baergic, a former subsidiary of the Company, granted 443,578 RSUs to Dr. MacLean and 266,147 RSUs to Mr. Jin; both grants were fully vested at grant date.

(2) Reflects employer contributions to the 401(k) retirement plan.

Narrative Disclosure to Summary Compensation Table

Terms of Employment with Dr. MacLean

On August 1, 2022, the Board of Directors of the Company appointed Alexandra MacLean, M.D. to serve as the Company's Chief Executive Officer. Dr. MacLean is employed on an at-will basis and has no written contract of employment. In 2025, Dr. MacLean was eligible for an annual discretionary bonus of 40%, however, the Compensation Committee has not yet made a determination on the grant of the bonus, if any.

Terms of Employment with Mr. Jin

Mr. Jin is employed by the Company on an at-will, part-time basis and has no written contract of employment. He currently receives no salary and would be eligible for bonus only on a discretionary basis based upon corporate factors and individual performance as determined by the Board. No such discretionary bonus was awarded to Mr. Jin in 2025.

Equity Awards

In November 2025, Dr. MacLean and Mr. Jin were granted RSUs with respect to 443,578 shares and 266,147 shares, respectively, of common stock of our former subsidiary Baergic, prior to its acquisition by Axsome. These awards were granted pursuant to Baergic's incentive plan: Fortress Biotech Acquisition Corp III 2017 Incentive Plan, prior to the sale of Baergic to Axsome.

Outstanding Equity Awards at Fiscal Year-End

The following awards that were previously granted to our named executive officers were outstanding as of December 31, 2025:

Name	Number of securities underlying unexercised options (#) exercisable		Number of securities underlying unexercised options (#) unexercisable	Option Exercise Price($)	Option Expiration Date	Number of Shares of Units of Stock that Have Not Vested		Market Value of Shares or Units of Stock that Have Not Vested ($)(1)
Alexandra MacLean	8,004	(2)	2,664	85.50	6/29/2033	42,500	(3)	28,909
David Jin	2,500	(2)	834	85.50	6/30/2033	16,250	(4)	11,053

(1) Based on the closing stock price of our common stock on the OTC Pink Open Market on the last trading day of the fiscal year of $0.6802.

(2) Represents options vested annually in equal installments from August 1, 2023 - 2025.

(3) Represents the unvested portion of an award of 170,000 Restricted Stock Units that will vest or has vested with respect to 42,500 RSUs on each of the following dates: September 30, 2024, December 31, 2024, September 23, 2025 and September 23, 2026.

(4) Represents the unvested portion of an award of 65,000 Restricted Stock Units that will vest or has vested with respect to 16,250 RSUs on each of the following dates: September 30, 2024, December 31, 2024, September 23, 2025 and September 23, 2026.

401(k) Plan

Our named executive officers are eligible to participate in a defined contribution retirement plan that provides eligible U.S. employees with an opportunity to save for retirement on a tax advantaged basis. Eligible employees may defer eligible compensation on a pre-tax or after-tax (Roth) basis, up to the statutorily prescribed annual limits on contributions under the Code. Contributions are allocated to each participant's individual account and are then invested in selected investment alternatives according to the participant's directions. We make matching contributions into the 401(k) plan on behalf of participants equal to 100% on participant contributions up to 4% of their eligible compensation. Participants are immediately and fully vested in all contributions. The 401(k) plan is intended to be qualified under Section 401(a) of the Code with the 401(k) plan's related trust intended to be tax exempt under Section 501(a) of the Code. As a tax-qualified retirement plan, contributions to the 401(k) plan (except for Roth contributions) and earnings on those contributions are not taxable to the employees until distributed from the 401(k) plan. Our Board may elect to adopt additional qualified or nonqualified benefit plans in the future, if it determines that doing so is in our best interest.

Clawback Policy

We have adopted a policy providing for the recovery of erroneously awarded incentive-based compensation received by executive officers employed by the Company or a subsidiary of the Company during an applicable recovery period (the "Clawback Policy"), effective as of October 2, 2023. Under the Clawback Policy, in the event that financial results upon which a cash or equity-based incentive award was based become the subject of a financial restatement that is required because of material non-compliance with financial reporting requirements, the Compensation Committee will conduct a review of awards covered by the Clawback Policy and recoup any erroneously awarded incentive-based compensation to ensure that the ultimate award reflects the financial results as restated. The Clawback Policy covers any cash or equity-based incentive compensation award that was vested, earned or granted to covered executive officers based on attainment of a financial reporting measure during the last completed three fiscal years immediately preceding the date on which the Company is required to prepare the accounting restatement.

Timing of Equity Awards

Avenue did not grant stock options or similar instruments to our named executive officers in2025. While we have no set policy or practice regarding the timing of stock option awards or similar instruments in relation to the disclosure of material nonpublic information, we do not time the release of material information to affect the value of stock options. In general, the timing of stock option awards is dictated by the event or circumstance giving rise to the award and the schedules of the directors responsible for approving the award. If, in the future, a stock option grant is made at a time that material nonpublic information exists, the directors approving the award would be responsible for considering the anticipated effect of that information on our stock price and would take such effect into account when sizing and pricing the award.

Director Compensation Program

Our Board sets compensation for non-employee directors on an annual basis. Our non-employee directors received the following compensation for service to the Board during 2025:

Cash Compensation:

- $50,000 annual retainer;
- $10,000 additional annual retainer for the Chairman of the Board; and
- $10,000 additional annual retainer for the Audit Committee Chair.

Equity Compensation:

- Options Award Grant: 30,000 options, which shall vest annually in equal installments over 3 years starting on January 1 following the year they were granted, subject to the director's continued service on the Board on such date.

In 2025, no such option awards were granted to the non-employee directors.

In addition, each non-employee director receives reimbursement for reasonable travel expenses incurred in attending meetings of our Board and meetings of committees of our Board. No changes are expected to director compensation in 2026, however any future changes will be at the discretion of the Compensation Committee and the Board of Directors.

Director Compensation Table

The following table sets forth the cash and other compensation we paid to the non-employee members of our Board for all services in all capacities during 2025.

Name	Fees Earned or Paid in Cash (1)	Option Awards ($)	All Other Compensation ($)	Total ($)(3)
Lindsay A. Rosenwald	—	—	—	—
Jay Kranzler, M.D., PhD	60,000	—	50,000(4)	110,000
Faith Charles	50,000	—	—	50,000
Neil Herskowitz	60,000	—	—	60,000
Curtis Oltmans	50,000	—	—	50,000

(1) Represents cash retainer for serving on our Board and committees of the Board, as applicable.

(2) No options were granted to directors in 2025.

(3) As of December 31, 2025, the aggregate number of options issued to each non-employee director that remains unvested was as follows: Dr. Rosenwald, 20,445 options; Dr. Kranzler, 20,445 options; Ms. Charles, 20,445 options; Mr. Herskowitz, 20,445 options; and Mr. Oltmans, 20,445 options.

(4) Reflects quarterly consulting fees of $12,500 paid by Baergic, pursuant to a consulting agreement between Dr. Kranzler and Baergic, effective December 1, 2020, whereby Dr. Kranzler provides consulting and advisory services related to his expertise in neuroscience to Baergic in exchange for this quarterly fee. This agreement was terminated in November 2025 in connection with the acquisition of Baergic by Axsome.

As an employee director of the Company, Dr. MacLean does not receive compensation for her service as a director. Information regarding Dr. MacLean's compensation is provided above under *"Summary Compensation Table"* on page 71.

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

Equity Compensation Plan Information

The following table sets forth the indicated information as of December 31, 2025 with respect to our equity compensation plans:

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options, Restricted Stock Awards/Units, Warrants and Rights (a)(1)	Weighted-Average Exercise Price of Outstanding Options, Warrants and Rights (2)	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in Column(a))
Equity compensation plan approved by shareholders	491,874	$ 9.74	4,575,906
Equity compensation plan not approved by shareholders	—	—	—
Total	491,874	9.74	4,575,906

(1) Includes 235,400 RSUs and 256,474 stock options.
(2) Stock options only. RSUs do not have exercise prices and are therefore excluded.

Our only equity compensation plan as of December 31, 2025 was the 2015 Plan, which was approved by our stockholders. We do not have any equity compensation plans or arrangements that have not been approved by our stockholders.

Stock Ownership of Our Directors, Executive Officers, and 5% Beneficial Owners

The following table shows information, as of March 23, 2026 (the "Determination Date"), concerning the beneficial ownership of our common stock by:

- each person we know to be the beneficial owner of more than 5% of our Common Stock;
- each of our current directors;
- each of our NEOs shown in our Summary Compensation Table; and
- all current directors and executive officers as a group.

As of the Determination Date, there were 3,294,635 shares of our common stock outstanding. Beneficial ownership is determined according to the rules of the SEC and generally means that a person has beneficial ownership of a security if he, she or it possesses sole or shared voting or investment power of that security, including options and warrants that are currently exercisable or exercisable within 60 days of the Determination Date. Shares of our Common Stock issuable pursuant to stock options are deemed outstanding for computing the percentage of the person holding such options and the percentage of any group of which the person is a member but are not deemed outstanding for computing the percentage of any other person. Except as indicated by the footnotes below, we believe, based on the information furnished to us, that the persons named in the table below have sole voting and investment power with respect to all shares of Common Stock shown that they beneficially own, subject to community property laws where applicable. The information does not necessarily indicate beneficial ownership for any other purpose, including for purposes of Section 13(d) and 13(g) of the Exchange Act.

Unless otherwise indicated, the address for each director and executive officer listed is: c/o Avenue Therapeutics, Inc., 1111 Kane Concourse, Suite 301, Bay Harbor Islands, Florida 33154.

Name of Beneficial Owner	Shares owned	Shares Under Exercisable Options and Restricted Stock Units (1)	Percentage of Shares Beneficially Owned
Jay Kranzler, M.D., PhD, Chairman of the Board of Directors	559	21,334	*
Alexandra MacLean, M.D., Chief Executive Officer and Director	—	135,504	4.0%
David Jin, Chief Operating Officer and Interim Chief Financial Officer	—	51,250	1.5%
Faith Charles, Director	—	21,334	*
Neil Herskowitz, Director	97	21,334	*
Curtis Oltmans, Director	44	21,334	*
Lindsay A. Rosenwald, M.D., Director	4,820 (2)	21,334	* %
All Executive officers and directors as a group (7 persons)	5,520	293,424	8.3 %
5% or Greater Stockholders:			
Fortress Biotech	328,746 (3)	—	10.0 %
1111 Kane Concourse, Suite 301			
Bay Harbor Islands, FL 33154			

*Less than 1% of our common stock outstanding

(1) Includes the rights to acquire beneficial ownership of common stock within 60 days of the Determination Date pursuant to options exercisable and deferred restricted stock units.

(2) Includes 149 shares of common stock issuable upon exercise of warrants held by Dr. Rosenwald. The warrants were issued by Fortress and are currently exercisable for shares of our common stock that are owned by Fortress. These do not represent equity compensation by us to Dr. Rosenwald.

(3) Includes 222 shares of common stock into which Fortress' 250,000 shares of Class A Preferred Stock may be converted at any time.

For purposes of the above table, a person is deemed to be the beneficial owner of any shares of Common Stock (i) over which the person has or shares, directly or indirectly, voting or investment power, or (ii) of which the person has a right to acquire beneficial ownership at any time within 60 days after the date of this report. “Voting power” is the power to vote or direct the voting of shares and “investment power” includes the power to dispose or direct the disposition of shares.

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

The written charter of the Audit Committee authorizes the Audit Committee to review and approve related-party transactions. In reviewing related-party transactions, the Audit Committee applies the basic standard that transactions with affiliates should be made on terms no less favorable to the Company than could have been obtained from unaffiliated parties. Therefore, the Audit Committee reviews the benefits of the transactions, terms of the transactions and the terms available from unrelated third parties, as applicable. All transactions other than compensatory arrangements between the Company and its officers, directors, principal stockholders and their affiliates will be approved by the Audit Committee or a majority of the disinterested directors, and will continue to be on terms no less favorable to the Company than could be obtained from unaffiliated third parties.

The following is a summary of each transaction or series of similar transactions since January 1, 2025 to which the Company was or is a party and that:

- the amount involved exceeded or exceeds the lesser of $120,000 or 1% of the average of our total assets at year-end for the last two completed fiscal years; and
- any of our directors or executive officers, any holder of 5% of our capital stock or any member of their immediate family had or will have a direct or indirect material interest.

Founders Agreement with Fortress

Fortress entered into a Founders Agreement with the Company in February 2015, pursuant to which Fortress assigned to the Company all of its rights and interest under Fortress's license agreement with Revogenex Ireland Ltd. for IV tramadol (the "License Agreement"). As consideration therefor, the Company assumed $3.0 million in debt that Fortress had accumulated for expenses and costs of forming the Company and obtaining the IV tramadol license. This debt was repaid to Fortress in 2017. As additional consideration for the transfer of rights under the Founders Agreement, the Company also agreed to: (i) issue annually to Fortress, on the anniversary date of the Founders Agreement, shares of Common Stock equal to two and one half percent (2.5%) of the fully-diluted outstanding equity of the Company at the time of issuance (the "Annual Equity Fee"); (ii) pay an equity fee in shares of the Company Common Stock, payable within five (5) business days of the closing of any equity or debt financing for the Company or any of its respective subsidiaries that occurs after the effective date of the Founders Agreement and ending on the date when Fortress no longer has majority voting control in the Company's voting equity, equal to two and one half percent (2.5%) of the gross amount of any such equity or debt financing (the "Financing Equity Fee"); and (iii) pay a cash fee equal to four and one half percent (4.5%) of the Company's annual net sales, payable on an annual basis, within ninety (90) days of the end of each calendar year. In the event of a change in control (as it is defined in the Founders Agreement), Fortress is to be paid a one-time change in control fee equal to five (5x) times the product of (x) net sales for the twelve (12) months immediately preceding the change in control and (y) four and one-half percent (4.5%).

On September 13, 2016, the Company entered into an Amended and Restated the Founders Agreement, ("A&R Founders Agreement") with Fortress. The A&R Founders Agreement removed the Annual Equity Fee (though that mechanism was concurrently added as a feature of the Class A Preferred Stock, per the below) and added a term of 15 years, which upon expiration automatically renews for successive one-year periods unless terminated by Fortress or a Change in Control (as defined therein) occurs. Concurrently with the A&R Founders Agreement, the Company entered into an Exchange Agreement whereby the Company exchanged Fortress' 2,075 Class A common shares for approximately 2,211 shares of common stock and 250,000 shares of Class A Preferred Stock. Pursuant to the terms of the Class A Preferred Stock held exclusively by Fortress, Fortress is entitled to cast, for each share of Class A Preferred Stock held by Fortress, the number of votes that is equal to 1.1 times a fraction, the numerator of which is the sum of (A) the aggregate number of shares of outstanding Common Stock and (B) the whole shares of Common Stock into which the shares of outstanding the Class A Preferred Stock are convertible and the denominator of which is the aggregate number of shares of outstanding Class A Preferred Stock. Thus, Fortress will at all times have voting control of us. Further, for a period of ten years from the date of the first issuance of shares of Class A Preferred Stock, the holders of record of the shares of Class A Preferred Stock (or other capital stock or securities issued upon conversion of or in exchange for the Class A Preferred Stock), exclusively and as a separate class, are entitled to appoint or elect the majority of our directors; however, the Company and Fortress waived application of this provision of the certificate of incorporation, and the holders of the Common Stock voted together with the holders of the Class A Preferred Stock for all directors at our most recent annual meeting of stockholders, with the holders of the Class A Preferred Stock utilizing the supervoting rights described above. In addition, the holders of the Class A Preferred Stock (currently, only Fortress) are entitled to receive the Annual Equity Fee.

Pursuant to the Founders Agreement, for the year ended December 31, 2025, we issued common stock to Fortress of 23,474 shares as a Financing Equity Fee. Additionally, we issued common stock to Fortress of 43,772 shares as a Financing Equity Fee for the year ended December 31, 2024.

Management Services Agreement with Fortress

Effective as of February 17, 2015, Fortress entered into a Management Services Agreement (the "MSA") with the Company to provide services to the Company pursuant to the terms of the MSA. Pursuant to the terms of the MSA, for an initial term of five (5) years (which initial term is subject to automatic five-year extensions unless terminated in certain cases), Fortress will render advisory and consulting services to the Company. Services provided under the MSA may include, without limitation, (i) advice and assistance concerning any and all aspects of the Company's operations, clinical trials, financial planning and strategic transactions and financings and (ii) conducting relations on behalf of the Company with accountants, attorneys, financial advisors and other professionals (collectively, the "Services"). The Company is obligated to utilize clinical research services, medical education, communication and marketing services and investor relations/public relation services of companies or individuals designated by Fortress, provided those services are offered at market prices. However, the Company is not obligated to take or act upon any advice rendered from Fortress, and Fortress shall not be liable for any of the Company's actions or inactions based upon Fortress' guidance. Fortress and its affiliates have been contractually exempt from fiduciary duties to the Company relating to corporate opportunities. In consideration for the Services, the Company will pay Fortress an annual consulting fee of $0.5 million (the "Annual Consulting Fee"), payable in advance in equal quarterly installments on the first business day of each calendar quarter in each year, provided, however, that such Annual Consulting Fee shall be increased to $1.0 million for each calendar year in which the Company has net assets in excess of $100.0 million at the beginning of the calendar year.

In connection with the Company's execution of that certain Stock Purchase and Merger Agreement, dated as of November 12, 2018, by and among,*inter alia*, the Company, Fortress and InvaGen Pharmaceuticals Inc. ("InvaGen") (such Stock Purchase and Merger Agreement, the "SPMA"), Fortress agreed, under a separate Waiver and Termination Agreement (the "Waiver Agreement") to contractually suspend: (i) all of its entitlements under the A&R Founders Agreement and the MSA and (ii) certain of its rights as a shareholder of the Class A Preferred Stock (including receipt of the Annual Equity Fee). The Waiver Agreement (together with all other extant SPMA-related agreements between the Company and InvaGen) was terminated in October 2022, meaning that all features of the A&R Founders Agreement, MSA and Class A Preferred Stock have been restored to full effect.

For the years ended December 31, 2025 and 2024, we had expenses related to the MSA of $500,000 and $250,000, respectively. The MSA expenses are split between research and development and general and administrative expense in the consolidated statements of operations. $250,000 and $125,000 of expenses related to the MSA were recognized in research and development and general and administrative for the years ended December 31 2025 and 2024, respectively. On November 13, 2024, we entered into a Subscription and Forgiveness Agreement with Fortress, whereby Fortress agreed to convert 50% of a total of $0.5 million owed by us under the MSA into newly issued common stock of ours and forgive the remaining 50% of the accrued balance. Therefore, the Company issued a total of 122,850 shares based on the closing price of $2.035 on the day prior to the execution of the agreement and reduced its liabilities associated with accounts payable and accrued expenses by $0.5 million for the year ended December 31, 2024.

Director Independence

We are not currently subject to any requirement to maintain a majority independent Board. However, consistent with our past practice, our Board completed its annual review of director independence on March 17, 2026. During the review, our Board considered relationships and transactions during 2025, 2024 and since inception between each director or any member of his or her immediate family, on the one hand, and the Company and our subsidiaries and affiliates, on the other hand. The purpose of this review was to determine whether any such relationships or transactions were inconsistent with a determination that the director is independent. Based on this review, our Board determined that Neil Herskowitz, Faith Charles, and Curtis Oltmans are independent under the criteria established by our Board.

Item 14. Principal Accounting Fees and Services

Audit Fees

For the fiscal years ended December 31, 2025 and 2024, KPMG LLP billed us an aggregate of $399,100 and $627,000, respectively, in fees for the professional services rendered in connection with the audit of our annual financial statements included in our Annual Report on Form 10-K for such fiscal years, the review of financial statements included in our Quarterly Report on Form 10-Q for such fiscal years and other services normally provided by the accountant for statutory and regulatory filings or engagements for those fiscal years.

Audit-Related Fees

During the fiscal year ended December 31, 2025 we incurred no costs from KPMG LLP for audit-related services reasonably related to the performance of the audits and reviews for that respective fiscal year.

During the fiscal year ended December 31, 2024 we incurred no costs from KPMG LLP for audit-related services reasonably related to the performance of the audits and reviews for the respective fiscal year.

Tax Fees

During the fiscal years ended December 31, 2025 and 2024, KPMG LLP billed us an aggregate of $44,983 and $23,693, respectively. for professional services fees rendered for tax compliance, tax advice, and tax planning services for the fiscal years ended December 31, 2025 and 2024.

All Other Fees

During the fiscal years ended December 31, 2025 and 2024, we were not billed by KPMG LLP for any fees for services, other than those described above, rendered to us for those two fiscal years.

Pre-Approval of Services

Our Audit Committee has established a policy setting forth the procedures under which services provided by our independent registered public accounting firm will be pre-approved by our Audit Committee. The potential services that might be provided by our independent registered public accounting firm fall into two categories:

- Services that are permitted, including the audit of our annual financial statements, the review of our quarterly financial statements, related attestations, benefit plan audits and similar audit reports, financial and other due diligence on acquisitions, and federal, state, and non-US tax services; and
- Services that may be permitted, subject to individual pre-approval, including compliance and internal-control reviews, indirect tax services such as transfer pricing and customs and duties, and forensic auditing.

Services that our independent registered public accounting firm are prohibited from providing include such services as bookkeeping, certain human resources services, internal audit outsourcing, and investment or investment banking advice.

All proposed engagements of our independent registered public accounting firm, whether for audit services or permissible non-audit services, are pre-approved by the Audit Committee. We jointly prepare a schedule with our independent registered public accounting firm that outlines services which we reasonably expect we will need from our independent registered public accounting firm and categorize them according to the classifications described above. Each service identified is reviewed and approved or rejected by the Audit Committee.

PART IV

Item 15. Exhibits and Consolidated Financial Statement Schedules

(a) Consolidated Financial Statements.

The following consolidated financial statements are filed as part of this report:

(b) Exhibits.

Exhibit No.	Description
3.1	Third Amended and Restated Certificate of Incorporation of Avenue Therapeutics, Inc., filed as Exhibit 3.1 to Form 8-K filed on June 27, 2017 (File No. 001-38114) and incorporated herein by reference.
3.2	Certificate of Amendment of the Third Amended and Restated Certificate of Incorporation of Avenue Therapeutics, Inc., filed as Exhibit 3.1 to Form 10-Q filed on August 14, 2018 (File No. 001-38114) and incorporated herein by reference.
3.3	Certificate of Amendment of the Third Amended and Restated Certificate of Incorporation of Avenue Therapeutics, Inc., filed as Exhibit 3.1 to Form 8-K filed on September 22, 2022 (File No. 001-38114) and incorporated herein by reference.
3.4	Certificate of Amendment of the Third Amended and Restated Certificate of Incorporation of Avenue Therapeutics, Inc., filed as Exhibit 3.1 to Form 8-K filed on February 3, 2023 (File No. 001-38114) and incorporated herein by reference.
3.5	Certificate of Amendment of the Third Amended and Restated Certificate of Incorporation of Avenue Therapeutics, Inc., filed as Exhibit 3.1 to Form 8-K filed on February 23, 2024 (File No. 001-38114) and incorporated herein by reference.
3.6	Certificate of Amendment of the Third Amended and Restated Certificate of Incorporation of Avenue Therapeutics, Inc., filed as Exhibit 3.1 to Form 8-K filed on April 26, 2024 (File No. 001-38114) and incorporated herein by reference.
3.7	Second Amended and Restated Bylaws of Avenue Therapeutics, Inc., filed as Exhibit 3.1 to Form 8-K filed on February 10, 2023 (File No. 000-38114) and incorporated herein by reference.
4.1	Specimen certificate evidencing shares of Common Stock, filed as Exhibit 4.1 to Form 10-12G filed on January 12, 2017 (File No. 000-55556) and incorporated herein by reference.
4.2	Form of warrant agreement, filed as Exhibit 4.2 to Form 10-12G filed on January 12, 2017 (File No. 000-55556) and incorporated herein by reference.
4.3	Description of Securities of Avenue Therapeutics, Inc.*
4.4	Form of Warrant, filed as Exhibit 4.1 to Form 8-K filed on October 12, 2022 (File No. 001-38114) and incorporated herein by reference.
4.5	Warrant Agent Agreement, dated October 6, 2022, by and between Avenue Therapeutics, Inc. and VStock Transfer, LLC, filed as Exhibit 4.3 to Form 8-K filed on October 12, 2022 (File No. 001-38114) and incorporated herein by reference.
4.6	Form of New Series C Warrant (May 2024), filed as Exhibit 4.1 to Form 8-K filed on May 1, 2024 (File No. 001-38114) and incorporated herein by reference.
4.7	Form of Placement Agent Warrant (May 2024), filed as Exhibit 4.3 to Form 8-K filed on January 8, 2024 (File No. 001-38114) and incorporated herein by reference.
10.1	Asset Transfer and License Agreement between Fortress Biotech, Inc. and Revogenex Ireland Limited dated February 17, 2015, filed as Exhibit 10.1 to Form 10-12G/A filed on March 13, 2017 (File No. 000-55556) and incorporated herein by reference.**
10.2	First Amendment to Asset Transfer and License Agreement between Fortress Biotech, Inc. and Revogenex Ireland Limited dated June 23, 2016, filed as Exhibit 10.11 to Form 10-12G/A filed on March 13, 2017 (File No. 000-55556) and incorporated herein by reference.
10.3	Second Amendment to Asset Transfer and License Agreement between Fortress Biotech, Inc. and Revogenex Ireland Limited dated May 4, 2017, filed as Exhibit 10.3 to Form S-1/A filed on May 22, 2017 (File No. 333-217552) and incorporated herein by reference.
10.4	Amended and Restated Founders Agreement between Fortress Biotech, Inc. and Avenue Therapeutics, Inc. dated September 13, 2016, filed as Exhibit 10.2 to Form 10-12G filed on January 12, 2017 (File No. 000-55556) and incorporated herein by reference.
10.5	Management Services Agreement between Fortress Biotech, Inc. and Avenue Therapeutics, Inc. effective as of February 17, 2015, filed as Exhibit 10.5 to Form 10-12G filed on January 12, 2017 (File No. 000-55556) and incorporated herein by reference.

10.6	Avenue Therapeutics, Inc. 2015 Incentive Plan, filed as Exhibit 10.7 to Form 10-12G filed on January 12, 2017 (File No. 000-55556) and incorporated herein by reference.#
10.7	Amendment to the Avenue Therapeutics, Inc. 2015 Incentive Plan, filed as Exhibit 99.2 to Form S-8 filed on December 17, 2021 (File No. 333-261710) and incorporated herein by reference.#
10.8	Amendment to the Avenue Therapeutics, Inc. 2015 Incentive Plan, filed as Exhibit 3.1 to Form 8-K filed on February 3, 2023 (File No. 001-38114) and incorporated herein by reference.#
10.9	Amendment to the Avenue Therapeutics, Inc. 2015 Incentive Plan, filed as Exhibit 10.1 to Form 8-K filed on June 26, 2024 (File No. 001-38114) and incorporated herein by reference.#
10.10	Underwriting Agreement, dated October 6, 2022, by and between Avenue Therapeutics, Inc. and Aegis Capital Corp., filed as Exhibit 1.1 to Form 8-K filed on October 12, 2022 (File No. 001-38114) and incorporated herein by reference.
10.11	Form of Registration Rights Agreement, dated January 27, 2023, by and among Avenue Therapeutics, Inc. and the purchaser party thereto, filed as Exhibit 10.5 to Form 8-K filed on February 1, 2023 (File No. 001-38114) and incorporated herein by reference.
10.12	Form of Avenue Therapeutics, Inc. Stock Option Agreement, filed as Exhibit 10.1 to Form 8-K filed on July 5, 2023 (File No. 001-38114) and incorporated herein by reference.#
10.13	Registration Rights Letter Agreement, dated September 8, 2023, by and among the Company and the purchaser parties thereto, filed as Exhibit 10.1 to Form 8-K filed on September 8, 2023 (File No. 001-38114) and incorporated herein by reference.
10.14	Form of January 2024 Investor Inducement Letter, filed as Exhibit 10.1 to Form 8-K filed on January 8, 2024 (File No. 001-38114) and incorporated herein by reference.
10.15	Form of November 2023 Investor Inducement Letter, filed as Exhibit 10.2 to Form 8-K filed on January 8, 2024 (File No. 001-38114) and incorporated herein by reference.
10.16	Form of Avenue Therapeutics, Inc. Restricted Stock Unit Agreement, filed as Exhibit 10.1 to Form 8-K filed on September 27, 2024 (File No. 001-38114) and incorporated herein by reference.#
10.17	Form of Investor Inducement Letter (May 2024), filed as Exhibit 10.1 to Form 8-K filed on May 1, 2024 (File No. 001-38114) and incorporated herein by reference.
10.18	At the Market Offering Agreement, dated May 10, 2024, by and between Avenue Therapeutics, Inc. and H.C. Wainwright & Co., LLC, filed as Exhibit 1.1 to Form 8-K filed on May 10, 2024 (File No. 001-38114) and incorporated herein by reference.
10.19	Stock Purchase Agreement, dated November 5, 2025, by and among Avenue Therapeutics, Inc., Axsome Therapeutics, Inc., Baergic Bio, Inc. and the holders of outstanding options, warrants and other similar rights with respect to shares of Baergic Bio, Inc., filed as Exhibit 10.26 to Post-Effective Amendment No. 1 to Registration Statement on Form S-3 on Form S-1 filed on December 15, 2025 (File No. 333-279125) and incorporated herein by reference. ***
10.20	AnnJi License Termination and Program Transfer Agreement by and between the Company and AnnJi Pharmaceutical Co., Ltd., dated April 24, 2025, filed as Exhibit 10.1 to Form 8-K filed April 30, 2025 (File No. 001-38114) and incorporated herein by reference.***
19.1	Insider Trading Policy, filed as Exhibit 19.1 to the Registrant's Annual Report on Form 10-K (File No. 001-38114) filed on March 31, 2025, and incorporated herein by reference.

23.1	Consent of Independent Registered Public Accounting Firm, KPMG LLP.*
31.1	Certification of Principal Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.*
31.2	Certification of Principal Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.*
32.1	Certification of Principal Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.^
32.2	Certification of Principal Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.^
97.1	Avenue Therapeutics, Inc. Clawback Policy, filed as Exhibit 97.1 to the Registrant's Annual Report on Form 10-K (File No. 001-38114) filed on March 31, 2025 and incorporated by reference herein.
101	The following financial information from Avenue Therapeutics, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2025, formatted in Inline XBRL (Extensible Business Reporting Language): (i) Balance Sheets, (ii) Statement of Operations, (iii) Statement of Stockholders' Equity, (iv) Statements of Cash Flows, and (v) the Notes to Financial Statements
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).*

* Filed herewith.
** Subject to a request for confidential treatment.
*** Certain portions of this exhibit have been omitted pursuant to Item 601(b)(10) of Regulation S-K.
^ Furnished herewith.
# Management contract or compensatory plan.

Item 16. Form 10-K Summary

None.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
Avenue Therapeutics, Inc.:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Avenue Therapeutics, Inc. and subsidiary (the Company) as of December 31, 2025 and 2024, the related consolidated statements of operations, changes in stockholders' equity, and cash flows for the years then ended, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2025 and 2024, and the results of its operations and its cash flows for the years then ended, in conformity with U.S. generally accepted accounting principles.

Going Concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the consolidated financial statements, the Company has incurred substantial operating losses since its inception and expects to continue to incur significant operating losses for the foreseeable future that raise substantial doubt about its ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 1. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

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

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

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

Critical Audit Matters

Critical audit matters are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. We determined that there are no critical audit matters.

/s/ KPMG LLP

We have served as the Company's auditor since 2022.

New York, New York
March 30, 2026

AVENUE THERAPEUTICS, INC.
Consolidated Balance Sheets
(In thousands, except share and per share amounts)

	December 31, 2025	December 31, 2024
ASSETS		
Current assets:		
Cash and cash equivalents	$ 2,855	$ 2,594
Prepaid expenses and other current assets	76	78
Total assets	**$ 2,931**	**$ 2,672**
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable and accrued expenses	$ 468	$ 654
Accounts payable and accrued expenses - related party	630	146
Warrant liability	1	16
Total current liabilities	1,099	816
Total liabilities	1,099	816
Commitments and Contingencies (Note 6)		
Stockholders' equity		
Preferred stock ($0.0001 par value), 2,000,000 shares authorized		
Class A Preferred stock, 250,000 shares issued and outstanding as of December 31, 2025 and 2024, respectively	—	—
Common stock ($0.0001 par value)		
Common shares, 200,000,000 shares authorized, 3,183,558 and 2,108,670 shares issued and outstanding as of December 31, 2025 and December 31, 2024, respectively	—	—
Additional paid-in capital	107,321	105,377
Accumulated deficit	(105,489)	(102,580)
Total stockholders' equity attributed to the Company	1,832	2,797
Non-controlling interests	—	(941)
Total stockholders' equity	1,832	1,856
Total liabilities and stockholders' equity	**$ 2,931**	**$ 2,672**

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

AVENUE THERAPEUTICS, INC.
Consolidated Statements of Operations
(In thousands, except share and per share amounts)

	Year Ended December 31,	
	2025	**2024**
Revenue		
Other revenue	$ 1,404	$ —
Operating expenses		
Research and development	1,037	6,645
General and administrative	3,653	4,638
Gain on sale of Baergic	(203)	—
Total operating expenses	(4,487)	(11,283)
Loss from operations	(3,083)	(11,283)
Interest income	(121)	(176)
Loss on common stock warrant liabilities	—	759
Change in fair value of warrant liabilities	(15)	(170)
Net loss	$ (2,947)	$ (11,696)
Net loss attributable to non-controlling interests	(38)	(44)
Net loss attributable to common stockholders	$ (2,909)	$ (11,652)
Net loss per common share attributable to common stockholders, basic and diluted	$ (0.93)	$ (15.79)
Weighted average number of common shares outstanding, basic and diluted	3,131,131	1,295,207

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

AVENUE THERAPEUTICS, INC.
Consolidated Statements of Changes in Stockholders' Equity
(In thousands, except share amounts)

	Class A Preferred Stock		Common Shares		Additional paid-in capital	Accumulated deficit	Non-Controlling Interests	Total Stockholders' equity
	Shares	Amount	Shares	Amount				
Balance at December 31, 2023	**250,000**	**—**	**341,324**	**3**	**92,507**	**(90,928)**	**(928)**	**654**
Share based compensation	—	—	283	—	1,236	—	—	1,236
Issuance of common stock to Fortress	—	—	179,098	—	827	—	—	827
Common shares issuable - Founders Agreement	—	—	—	—	(167)	—	—	(167)
Loss on settlement of common stock warrant liabilities	—	—	—	—	1,159	—	—	1,159
Exercise of warrants	—	—	910,218	1	9,420	—	—	9,421
Warrant inducement offering costs	—	—	—	—	(1,207)	—	—	(1,207)
Issuance of common stock, net of offering costs under open market sales agreement (ATM)	—	—	591,205	—	1,623	—	—	1,623
Reverse split (1-for-75)	—	—	86,542	(4)	4	—	—	—
Issuance of subsidiaries' common stock for license expenses	—	—	—	—	6	—	—	6
Non-controlling interest in subsidiaries	—	—	—	—	(31)	—	31	—
Net loss attributable to non-controlling interest	—	—	—	—	—	—	(44)	(44)
Net loss attributable to common stockholders	—	—	—	—	—	(11,652)	—	(11,652)
Balance at December 31, 2024	**$ 250,000**	**$ —**	**$ 2,108,670**	**$ —**	**$ 105,377**	**$ (102,580)**	**$ (941)**	**$ 1,856**
Share based compensation	—	—	239	—	665	—	—	665
Issuance of common stock to Fortress	—	—	135,659	—	55	—	—	55
Common shares issuable - Founders Agreement	—	—	—	—	76	—	—	76
Issuance of common stock, net of offering costs under open market sales agreement (ATM)	—	—	938,990	—	2,094	—	—	2,094
Shares receivable from AnnJi	—	—	—	—	(4)	—	—	(4)
Forgiveness of subsidiary debt and deconsolidation	—	—	—	—	(942)	—	979	37
Net loss attributable to non-controlling interest	—	—	—	—	—	—	(38)	(38)
Net loss attributable to common stockholders	—	—	—	—	—	(2,909)	—	(2,909)
Balance at December 31, 2025	**250,000**	**$ —**	**3,183,558**	**$ —**	**$ 107,321**	**$ (105,489)**	**$ —**	**$ 1,832**

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

AVENUE THERAPEUTICS, INC.
Consolidated Statements of Cash Flows
(In thousands)

	Year Ended December 31,	
	2025	**2024**
Cash flows from operating activities:		
Net loss	$ (2,947)	$ (11,696)
Reconciliation of net loss to net cash used in operating activities:		
Share based compensation	665	1,236
Loss on common stock warrant liabilities	—	759
Change in fair value of warrant liability	(15)	(170)
Common shares issuable - Founders Agreement	76	(167)
Issuance of common stock to Fortress	55	827
Issuance of subsidiaries' common shares for license expenses	—	6
Gain on repurchase of common stock held by AnnJi	(4)	—
Issuance of common stock of subsidiary	37	—
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	2	(11)
Accounts payable and accrued expenses	(186)	367
Accounts payable and accrued expenses - related party	484	(177)
Net cash and cash equivalents used in operating activities	(1,833)	(9,026)
Cash flows from financing activities:		
Proceeds from ATM sales of common stock, net of issuance costs	2,094	1,623
Proceeds from exercise of warrants	—	9,421
Warrant exercise transaction costs	—	(1,207)
Net cash provided by financing activities	2,094	9,837
Net change in cash and cash equivalents	261	811
Cash and cash equivalents, beginning of period	2,594	1,783
Cash and cash equivalents, end of period	$ 2,855	$ 2,594
Supplement disclosure of non-cash information:		
Baergic deconsolidation	$ (1)	$ —
Issuance of common shares - Founders Agreement	$ 55	$ 827

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

AVENUE THERAPEUTICS, INC
Notes to Consolidated Financial Statements

Note 1 — Organization, Plan of Business Operations

Avenue Therapeutics, Inc. (the "Company" or "Avenue") was incorporated in Delaware on February 9, 2015, as a wholly owned subsidiary of Fortress Biotech, Inc. ("Fortress") and completed its initial public offering in 2017. Avenue is a specialty pharmaceutical company focused on the development and commercialization of therapies for the treatment of neurologic diseases. Avenue's current product candidates are intravenous tramadol ("IV tramadol") for the treatment of post-operative acute pain and ATX-04 for the treatment of Pompe disease, and previously, through April 2025, AJ201 for the treatment of spinal bulbar and muscular atrophy, and through November 2025, BAER-101 for the treatment of epilepsy and panic disorders.

AJ201 Termination

On February 28, 2023, Avenue entered into a license agreement with AnnJi Pharmaceutical Co. Ltd. ("AnnJi"), whereby Avenue obtained an exclusive license (the "AnnJi License Agreement") from AnnJi to the intellectual property rights pertaining to the molecule known as JM17, which activates Nrf1 and Nrf2, enhances androgen receptor degradation and underlies AJ201, a clinical product candidate currently in a Phase 1b/2a clinical trial in the U.S. for the treatment of spinal and bulbar muscular atrophy ("SBMA", also known as Kennedy's Disease). Under the AnnJi License Agreement, in exchange for exclusive rights to the intellectual property underlying the AJ201 product candidates, Avenue paid $3.0 million, issued shares of Avenue stock in two tranches, and agreed to make additional payments including: reimbursement of payments up to $10.8 million in connection with the product's Phase 1b/2a clinical trial, up to $14.5 million in connection with certain development milestones pertaining to the first indication in the U.S., up to $27.5 million in connection with certain drug development milestones pertaining to additional indications and development outside the U.S., up to $165 million upon the achievement of certain net sales milestones ranging from $75 million to $750 million in annual net sales, and royalty payments based on a percentage of net sales ranging from mid-single digits to the low-double digits, which were subject to potential diminution in certain circumstances. On March 3, 2025, Avenue received a notice of AnnJi's intent to terminate the AnnJi License Agreement, in which AnnJi asserted several bases for its right to terminate the AnnJi License Agreement.

On April 24, 2025 (the "Termination Effective Date"), Avenue and AnnJi entered into a License Termination and Program Transfer Agreement (the "Termination and Transfer Agreement"), pursuant to which: (i) the AnnJi License Agreement and related agreements were terminated with immediate effect; (ii) the parties dismissed all pending dispute resolution proceedings and provided mutual releases of claims; (iii) Avenue transferred to AnnJi all of its rights, title and interest to and under the assets arising under the AnnJi License Agreement and otherwise related to AJ201 and (iv) Avenue agreed not to, for 48 months following the date of the Termination and Transfer Agreement, develop, commercialize, manufacture or sell any product competing with AJ201 in the US, Canada, the European Union, Great Britain or Israel. Under the Termination and Transfer Agreement, Avenue repurchased all shares of common stock held by AnnJi for an aggregate payment of $ 1.00, and Avenue also made a payment of $0.2 million to AnnJi as consideration for legal expenses, which was accounted for as consideration payable to a customer and reduced the amount of revenue recognized under the agreement.

AnnJi made payments to Avenue of $1.6 million (which amount reflects the netting of a 20% tax withholding payment obligation), with $0.8 million having been collected in May 2025 and $0.8 million collected in July 2025. The $1.6 million, less the $0.2 million as consideration for legal expenses, was recognized as other revenue as the performance obligations related to rights transferred to AnnJi were satisfied during the quarter ended June 30, 2025. Additionally, Avenue will be eligible to receive from AnnJi:

- payments totaling up to $5 million in the aggregate upon the occurrence of certain development and regulatory milestone events pertaining to AJ201;
- payments totaling up to $17 million in the aggregate upon AJ201 achieving certain commercial sales milestone events;
- a 1.75% royalty on net sales of AJ201, which royalty percentage is subject to potential diminution in certain circumstances; and
- in the event that AnnJi enters into one or more subsequent licenses of rights to AJ201 with third party licensee(s), 15% of payments received by AnnJi from such licensee(s), up to a cap of $7.5 million, and with a minimum of $4 million owing under certain mechanisms in the event of an approval of a New Drug Application in the U.S. with respect to AJ201.

The Company is treating the payments related to future milestones and potential royalties as variable consideration that is constrained until the achievement of the specified milestones. The Termination and Transfer Agreement also contains customary representations and warranties related to confidentiality and indemnification.

Sale of Baergic

On May 11, 2022, the Company entered into a stock contribution agreement (the "Contribution Agreement") with Fortress, pursuant to which Fortress agreed to transfer ownership of 100% of its shares (common and preferred) (the "Contributed Shares") in Baergic Bio, Inc. ("Baergic") to the Company. Under the Contribution Agreement, Fortress also agreed to assign to Avenue certain intercompany agreements existing between Fortress and Baergic, including a Founders Agreement, by and between Fortress and Baergic, dated as of March 9, 2017, and Management Services Agreement, by and between Fortress and Baergic, dated as of March 9, 2017.

The transaction expanded Avenue's development portfolio within neuroscience. Evaluation and negotiation of the Contribution Agreement was overseen, and execution of the Contribution Agreement was approved, by special committees at the Avenue and Fortress levels, both of which exclusively comprised independent and disinterested directors of the respective companies' boards. See Note 4 below.

On November 5, 2025, Avenue Therapeutics, Inc. (the "Company" or "Avenue") and its majority owned subsidiary, Baergic Bio, Inc., a Delaware corporation ("Baergic"), entered into a stock purchase agreement (the "Agreement") with Axsome Therapeutics, Inc., a Delaware corporation (together with its affiliates, "Axsome"), and the holders of outstanding options, warrants and other similar rights with respect to shares of Baergic. Pursuant to the Agreement, Axsome: (i) purchased 100% of the equity interests in Baergic from Avenue and the other stockholders of Baergic for an upfront payment of $0.3 million (less transaction fees) and additional contingent consideration described below (the "Disposition") and (ii) received worldwide commercial, development, and manufacturing rights to BAER-101 (now referred to as AXS-17), including all available nonclinical and clinical data.

Additionally, Avenue and the other former stockholders of Baergic will be eligible to receive from Axsome:

- payments totaling up to $2.5 million in the aggregate upon the occurrence of certain development and regulatory milestone events for the first indication pertaining to AXS-17 and $1.5 million for each indication thereafter;
- payments totaling up to $79 million in aggregate upon AXS-17 achieving certain commercial sales milestone events; and
- a tiered mid-to-high single digit royalty on potential global net sales of AXS-17.

Avenue is eligible to receive approximately 74% of all future payments and royalties payable under the Agreement.

The Agreement also contains customary representations and warranties and provisions related to confidentiality, indemnification and intellectual property protection.

The Company determined that Baergic did not meet the definition of a business as substantially all of the fair value of the gross assets was concentrated in a single identifiable intangible asset. Accordingly, the transaction was accounted for as a sale of a nonfinancial asset under ASC 610-20. The Company further concluded that the contingent consideration related to development and regulatory milestones is constrained and will be recognized when it is probable that a significant revenue reversal will not occur. Avenue received $0.3 million up front, which included $0.1 million that Avenue was entitled to as reimbursement for transaction costs. Under the terms of the

agreement, Avenue was entitled to $ 0.2 million of the upfront payment and the remaining $0.1 million went to the other shareholders of Baergic based on their ownership percentages. For the year ended December 31, 2025, the Company recognized a gain of $0.2 million related to the deconsolidation upon the loss of control of Baergic, after accounting for transaction fees and expenses for shares issued related to the Agreement.

Reverse Stock Split

On April 25, 2024, we filed the Reverse Split Amendment to the Company's Third Amended and Restated Certificate of Incorporation with the Secretary of State of the State of Delaware to effect a 1-for-75 reverse stock split of our shares of common stock ("Reverse Stock Split"). As a result of the Reverse Stock Split, every 75 shares of common stock outstanding immediately prior to effectiveness of the Reverse Stock Split were combined and converted into one share of common stock without any change in the par value per share. The Reverse Stock Split became effective on April 26, 2024, and the common stock was quoted on the Nasdaq Stock Market on a post-split basis at the open of business on April 26, 2024. No fractional shares were issued in connection with the Reverse Stock Split. Stockholders who would have otherwise been entitled to a fraction of one share of common stock as a result of the Reverse Stock Split instead received one whole share of common stock.

All share and per share information has been retroactively adjusted to give effect to the Reverse Stock Split for all periods presented, unless otherwise indicated.

Nasdaq Delisting

On March 17, 2025, the Nasdaq Stock Market LLC ("Nasdaq") notified the Company that Nasdaq had determined to delist the Company's common stock and that trading of the Company's securities would be suspended at the open of trading on March 19, 2025. On July 18, 2025, Nasdaq filed a Form 25 with the United States Securities and Exchange Commission (the "SEC") to remove the Company's common stock from listing and registration. As a result, the common stock of the Company ceased to be registered pursuant to Section 12(b) of the Securities Act and was immediately deemed registered pursuant to Section 12(g) of the Securities Act of 1933, as amended (the "Securities Act"). The Company does not intend to appeal the delisting determination. Since March 19, 2025, the Company's common stock has been quoted on the over-the-counter market (OTCID) under the symbol "ATXI". The delisting may negatively impact the liquidity and market price of the Company's common stock and could make it more difficult for shareholders to dispose of their holdings.

Stock Purchase and Merger Agreement

In July 2022 the Company entered into a share repurchase agreement with InvaGen Pharmaceuticals Inc. ("InvaGen"). Upon the closing of a public offering in October 2022, InvaGen gave up all rights set forth in the stockholders agreement to which it was previously party and the Company repurchased the 5,185 common shares of the Company held by InvaGen. Under the share repurchase agreement with InvaGen, the Company agreed to pay InvaGen seven and a half percent (7.5%) of the proceeds from future financings, up to $4 million, which the Company accounts for as a derivative. Due to the uncertainty related to future financings, the estimated fair value of the derivative is not material. The Company recognizes changes in fair value within general and administrative expenses in the statement of operations. In connection with the closing of financings that occurred in 2025 and 2024, Avenue made payments totaling $0.2 million and $0.7 million to InvaGen, respectively. Approximately $ 1.4 million in aggregate has been paid to InvaGen under the Share Repurchase Agreement as of December 31, 2025.

Liquidity and Capital Resources

January 2024 Warrant Inducement and Private Placement

On January 5, 2024, the Company entered into (i) an inducement offer letter agreement (the "January 2023 Investor Inducement Letter") with a certain investor (the "January 2023 Investor") in connection with certain outstanding warrants to purchase up to an aggregate of 25,871 of the Company's common stock originally issued to the January 2023 Investor on January 31, 2023 (the "January 2023 Warrants") and (ii) an inducement offer letter agreement (the "November 2023 Investor Inducement Letter Agreement" and, together with the January 2023 Investor Inducement Letter, the "January 2024 Warrant Inducement") with certain investors (the November 2023 Investors" and, together with the January 2023 Investor, the "January 2024 Holders") in connection with certain outstanding warrants to purchase up to an aggregate of 194,667 shares of common stock, originally issued to the November 2023 Investors on November 2, 2023 (the "November 2023 Warrants" and, together with the January 2023 Warrants, the "Existing Warrants"). The January 2023 Warrants had an exercise price of $116.25 per share, and the November 2023 Warrants had an exercise price of $22.545 per share.

Pursuant to the January 2024 Warrant Inducement, (i) the January 2023 Investor agreed to exercise for cash its January 2023 Warrants at a reduced exercise price of $22.545 per share and (ii) the November 2023 Investors agreed to exercise for cash their November 2023 Warrants at the existing exercise price of $22.545 in consideration for the Company's agreement to issue in a private placement (x) new Series A common stock purchase warrants (the "New Series A Warrants") to purchase up to 220,538 shares of common stock (the "New Series A Warrants Shares") and (y) new Series B common stock purchase warrants (the "New Series B Warrants" and, together with the New Series A Warrants, the "January 2024 Warrants") to purchase up to 220,538 shares of common stock (the "New Series B Warrants Shares"). The New Series A Warrants will expire five years following the issuance date and the New Series B Warrants will expire eighteen months following the issuance date. The New Series A Warrants and New Series B Warrants meet the criteria for permanent equity classification.

The January 2023 Warrants, which were liability classified, were revalued on January 5, 2024 using the Black-Scholes Model to calculate the difference in fair value as a result of the change in exercise price. The difference in fair value of $0.1 million was recorded as a change in fair value of warrant liabilities in the consolidated statements of operations (see Note 8). The issuance of the January 2024 Warrants was considered as part of the cost of the inducement and the January 2024 Warrants were valued using the Black-Scholes Model with the fair value being allocated between the January 2023 Warrants and November 2023 Warrants on a weighted basis. The approximately $0.6 million of the January 2024 Warrants fair value was allocated to the January 2023 warrants and recorded as a loss on common stock warrant liabilities in the consolidated statements of operations with a corresponding offset to additional paid-in-capital. Approximately $4.3 million of the January 2024 Warrant fair value was allocated to the November 2023 Warrants and deemed to be a dividend and recorded to additional paid-in-capital because the Company had an accumulated deficit on the issuance date. The deemed dividend was included in net loss attributable to common stockholders in the calculation of net loss per share in the consolidated statements of operations (see Note 2).

The Company received aggregate net proceeds of approximately $4.5 million from the exercise of the Existing Warrants by the January 2024 Holders, after deducting placement agent fees and other expenses payable by the Company.

The Company filed a registration statement on Form S-3 (File No. 333-276671) with the SEC providing for the resale of the January 2024 Warrant Shares (the "Resale Registration Statement") on January 24, 2024, which was declared effective on February 1, 2024.

See the May 2024 Warrant Inducement below for the January 2024 Warrants exercised in May 2024.

May 2024 Warrant Inducement and Private Placement

On April 28, 2024, the Company entered into inducement offer letter agreements (the "May 2024 Warrant Inducement") with (i) certain investors (the "October 2022 Investors") that held certain outstanding October 2022 Warrants to purchase up to an aggregate of 27,271 shares of the Company's common stock; (ii) certain investors (the "May Inducement November 2023 Investors") that hold November 2023 Warrants to purchase up to an aggregate of 221,333 shares of common stock; and (iii) certain investors (the "January 2024 Investors" and, collectively with the October 2022 Investors and May Inducement November 2023 Investors, the "May 2024 Holders") that hold January 2024 Warrants to purchase up to an aggregate of 441,076 shares of common stock. We refer to the exercised January 2024 Warrants collectively with the October 2022 Warrants and November 2023 Warrants as the "May 2024 Exercised Warrants"). The October 2022 Warrants had an exercise price of $116.25 per share, the November 2023 Warrants had an exercise price of $22.545 per share, and the January 2024 Warrants had an exercise price of $22.545 per share. Pursuant to the May 2024 Warrant Inducement, the May 2024 Holders agreed to exercise for cash the May 2024 Exercised Warrants at a reduced exercise price of $6.20 per share in partial consideration for the Company's agreement to issue in a private placement (x) new Series C Common Stock purchase warrants (the "New Series C Warrants") to purchase up to 689,680 shares of common stock (the "New Series C Warrant Shares") and (y) new Series D Common Stock Purchase Warrants (the "New Series D Warrants" and, together with the New Series C Warrants, the "May 2024 Warrants") to purchase up to 689,680 shares of common stock (the "New Series D Warrant Shares" and, together with the New Series C Warrant Shares, the "May 2024 Warrant Shares"). The May 2024 Holders also agreed to pay the Company $0.125 per May 2024 Warrant Share (the "Additional Warrant Consideration"). The closing of the transactions contemplated pursuant to the May 2024 Warrant Inducement occurred on May 1, 2024. The May 2024 Warrants meet the requirement for equity classification under ASC 815.

The October 2022 Warrants, which were liability classified, were revalued on May 1, 2024 using the Black-Scholes Model to calculate the difference in fair value as a result of the change in exercise price. The difference in fair value of $0.1 million was recorded as a change in fair value of warrant liabilities in the consolidated statements of operations (see Note 8). The issuance of the May 2024 Warrants was considered as part of the cost of the inducement and the May 2024 Warrants were valued using the Black-Scholes Model with the fair value being allocated between the October 2022 Warrants, November 2023 Warrants and January 2024 Warrants on a weighted basis. The approximately $0.2 million of the May 2024 Warrants fair value was allocated to the October 2022 warrants and recorded as a loss on common stock warrant liabilities in the consolidated statements of operations with a corresponding offset to additional paid-in-capital. Approximately $4.5 million of the May 2024 Warrant fair value was allocated to the November 2023 Warrants and January 2024 Warrants and deemed to be a dividend and recorded to additional paid-in-capital because the Company had an accumulated deficit on the issuance date. The deemed dividend was included in net loss attributable to common stockholders in the calculation of net loss per share in the consolidated statements of operations (see Note 2).

The Company received net proceeds of approximately $3.7 million from the exercise of the May 2024 Exercised Warrants by the May 2024 Holders and the payment of the Additional Warrant Consideration, after deducting placement agent fees and other expenses payable by the Company.

The Company filed a registration statement on Form S-3 (File No. 333-279125) with the SEC providing for the resale of the May 2024 New Warrant Shares (the "May 2024 Resale Registration Statement") on May 6, 2024, which was declared effective on May 10, 2024. Due to our delisting from a national securities exchange, we are no longer eligible to use a shelf registration statement on Form S-3.

ATM Facility

On May 10, 2024, the Company entered into an At the Market Offering Agreement (the "ATM Agreement") with H.C. Wainwright & Co. LLC (the "ATM Manager") under which the Company may offer and sell, from time to time at its sole discretion, shares of its common stock, par value $0.0001 per share, through or to the ATM Manager. The offer and sale of the shares will be made pursuant to a previously filed shelf registration statement on Form S-3 (File No. 333-261520), originally filed with the SEC on December 7, 2021 and declared effective by the SEC on December 10, 2021, and the related prospectus supplement dated May 10, 2024 (including such replacement registration statement as may be filed with the SEC, the "ATM Registration Statement") and filed with the SEC on such date pursuant to Rule 424(b) under the Securities Act of 1933, as amended (the "Securities Act"). The replacement registration statement was later withdrawn. As a result of the limitations of General Instruction I.B.6 of Form S-3, the Company may sell up to a maximum of $3,850,000 of its shares pursuant to the ATM Agreement. On December 15, 2025, the Company filed a Post-Effective Amendment No. 1 for Form S-3 on Form S-1 (File No. 333-279125), which Post-Effective Amendment was declared effective on December 16, 2025.

Under the ATM Agreement, the ATM Manager may sell shares by any method permitted by law deemed to be an "at the market offering" as defined in Rule 415(a)(4) under the Securities Act. The ATM Manager will use commercially reasonable efforts to sell the shares from time to time, based upon instructions from the Company (including any price, time or size limits or other customary parameters or conditions the Company may impose). The Company agreed to pay the ATM Manager a commission of 3.0% of the gross proceeds from the sales of shares sold through the ATM Manager under the ATM Agreement and has provided the ATM Manager with customary indemnification and contribution rights. The Company also agreed to reimburse the ATM Manager for certain expenses incurred in connection with the ATM Agreement. The Company and the ATM Manager may each terminate the ATM Agreement at any time upon specified prior written notice.

For the year ended December 31, 2025, the Company sold an aggregate of 938,990 shares of its common stock pursuant to the ATM Agreement, resulting in net proceeds of approximately $2.1 million, after deducting underwriting discounts. Avenue is no longer able to utilize the Avenue ATM as a result of the delisting of its stock from trading on Nasdaq.

Going Concern

These consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles ("U.S. GAAP") assuming the Company will continue as a going concern. The going concern assumption contemplates the realization of assets and satisfaction of liabilities in the normal course of business. However, as described below, substantial doubt about the Company's ability to continue as a going concern exists.

The Company is not yet generating revenue, has incurred substantial operating losses since its inception and expects to continue to incur significant operating losses for the foreseeable future as it executes on its product development plan and may never become profitable. As of December 31, 2025, the Company had an accumulated deficit of $105.5 million. Due to uncertainties regarding future operations of the Company, including a potential Phase3 safety study for IV tramadol, and pivotal study for ATX-04, the Company will need to secure additional funds through equity or debt offerings, or other potential sources, the timing of which is unknown at this time. The Company cannot be certain that additional funding will be available to it on acceptable terms, or at all. These factors individually and collectively causes substantial doubt about the Company's ability to continue as a going concern to exist within one year from the date of this report. The consolidated financial statements donot include any adjustments to the carrying amounts and classification of assets, liabilities, and reported expenses that may be necessary if the Company were unable to continue as a going concern.

Note 2 — Significant Accounting Policies

Basis of Presentation & Principles of Consolidation

The Company's consolidated financial statements have been prepared in conformity with U.S. GAAP, include all adjustments necessary for the fair presentation of the Company's financial position for the periods presented and are stated in U.S. dollars. The Company's consolidated financial statements include the accounts of the Company and the accounts of the Company's subsidiary until its sale on November 5, 2025. All intercompany balances and transactions have been eliminated as appropriate through the date of the deconsolidation of Baergic on November 5, 2025.

The accompanying consolidated financial statements include the accounts of the Company's subsidiary, Baergic. Because the Company owns less than100% of Baergic, the Company records net loss attributable to non-controlling interests in its consolidated statements of operations equal to the percentage of the economic or ownership interest retained in Baergic by the respective non-controlling parties.

Segment Reporting

Operating segments are defined as components of an enterprise that engage in business activities from which it may recognize revenues and incur expenses, and for which discrete financial information is available that is evaluated regularly by the chief operating decision maker ("CODM") to allocate resources and assess performance.

The Company operates in one reportable segment, development and commercialization of therapies for the treatment of neurologic diseases, which includes all activities related to the development and commercialization of AJ201 until the termination of the license in April 2025, BAER-101 until its sale to Axsome in November 2025, and IV tramadol. The determination of a single reportable segment is consistent with the consolidated financial information regularly provided to the Company's chief operating decision maker (CODM), which is its chief executive officer, who reviews and evaluates consolidated net income (loss) for purposes of assessing performance, making operating decisions, allocating resources and planning and forecasting for future periods. The measure of segment assets is reported on the balance sheet as total assets.

Use of Estimates

The preparation of consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of expenses during the reporting period. Actual results could differ from those estimates.

Cash and Cash Equivalents

The Company considers all short-term investments with a maturity ofthree months or less when purchased to be cash equivalents. Cash and cash equivalents at December 31, 2025 and 2024 consisted of cash in institutions in the United States. The Company maintains its cash and cash equivalent balances with high-quality financial institutions and, consequently, the Company believes that such funds are currently adequately protected against credit risk. At times, portions of the Company's cash and cash equivalents may be uninsured or in deposit accounts that exceed Federal Deposit Insurance Corporation ("FDIC") insured limits. As ofDecember 31, 2025, the Company had not experienced losses on these accounts, and management believes the Company is not exposed to significant risk on such accounts. The Company's cash equivalents and investments may comprise money market funds that are invested in U.S. Treasury obligations, corporate debt securities, U.S. Treasury obligations and government agency securities. Credit risk in these securities is reduced as a result of the Company's investment policy to limit the amount invested in any single issuer and to only invest in securities of a high credit quality.

Accounts Payable and Accrued Expenses – Related Party

In the normal course of business, Fortress incurs certain expenses on behalf of the Company. Such expenses are recorded as accounts payable and accrued expenses – related party and are recorded at the invoiced amount and reimbursed to Fortress in the normal course of business. The Company believes that the difference, if any, between the amounts invoiced and the amounts that would have been incurred if the Company operated as an unaffiliated entity is not material.

Research and Development

Research and development costs are expensed as incurred. Advance payments for goods and services that will be used in future research and development activities are expensed when the activity has been performed or when the goods have been received rather than when the payment is made. Upfront and milestone payments due to third parties that perform research and development services on the Company's behalf will be expensed as services are rendered or when the milestone is achieved.

Research and development costs primarily consist of personnel related expenses, including salaries, benefits, travel, and other related expenses, stock-based compensation, payments made to third parties for license and milestone costs related to in-licensed products and technology, payments made to third party contract research organizations for preclinical and clinical studies, investigative sites for clinical trials, consultants, the cost of acquiring and manufacturing clinical trial materials, costs associated with regulatory filings and patents, laboratory costs and other supplies.

Costs incurred in obtaining technology licenses are charged to research and development expense if the technology licensed has not reached commercial feasibility and have no alternative future use. The licenses purchased by the Company require substantial completion of research and development, regulatory and marketing approval efforts in order to reach commercial feasibility and has no alternative future use. Accordingly, the total purchase price including any development milestone payments for the licenses acquired are reflected as research and development on the Company's consolidated statements of operations.

Contingencies

The Company records accruals for contingencies and legal proceedings expected to be incurred in connection with a loss contingency when it is probable that a liability has been incurred and the amount can be reasonably estimated. If a loss contingency is not probable but is reasonably possible, or is probable but cannot be estimated, the nature of the contingent liability, together with an estimate of the range of possible loss if determinable and material, would be disclosed.

Freestanding Warrants

The Company has issued freestanding warrants to purchase shares of its common stock in connection with financing activities (see Note 8) and accounts for them in accordance with applicable accounting guidance as either liabilities or as equity instruments depending on the specific terms of the warrant agreements. Warrants classified as liabilities are remeasured each period they are outstanding. Any resulting gain or loss related to the change in the fair value of the warrant liability is recognized in change in fair value of warrant liabilities, a component of other income (loss), in the consolidated statements of operations.

Fair Value Measurements

The Company follows accounting guidance on fair value measurements for financial assets and liabilities measured at fair value on a recurring basis. Under the accounting guidance, fair value is defined as an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or a liability.

The accounting guidance requires fair value measurements be classified and disclosed inone of the following three categories:

Level 1: Quoted prices in active markets for identical assets or liabilities.

Level 2: Observable inputs other than Level 1 prices for similar assets or liabilities that are directly or indirectly observable in the marketplace.

Level 3: Unobservable inputs which are supported by little orno market activity and that are financial instruments whose values are determined using pricing models, discounted cash flow methodologies, or similar techniques, as well as instruments for which the determination of fair value requires significant judgment or estimation.

The fair value hierarchy also requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. Assets and liabilities measured at fair value are classified in their entirety based on the lowest level of input that is significant to the fair value measurement. The Company's assessment of the significance of a particular input to the fair value measurement in its entirety requires management to make judgments and consider factors specific to the asset or liability.

Certain of the Company's financial instruments are not measured at fair value on a recurring basis but are recorded at amounts that approximate their fair value due to their liquid or short-term nature, such as accounts payable, accrued expenses and other current liabilities.

Annual Stock Dividend

In September 2016, in connection with the adoption of the Amended and Restated Articles of Incorporation, the Company issued250,000 Class A Preferred stock to Fortress. The Class A Preferred stock entitled the holder to a stock dividend equal to 2.5% of the fully-diluted outstanding equity of the Company on February 16 (the "Annual Stock Dividend") to be paid on February 17 of each year. On June 13, 2018, the Company's Stockholders adopted an amendment to the Company's Third Amended and Restated Certificate of Incorporation amending the record date to December 31 and the payment date going forward to January 1 of each year. Concurrently with the execution and delivery of the SPMA, the Company, InvaGen and Fortress entered into a waiver agreement ("the Waiver Agreement"), pursuant to which, among other things, Fortress irrevocably waived its right to receive dividends of the Company's common shares under the terms of the Class A Preferred Stock and any fees, payments, reimbursements or other distributions under a certain management services agreement between the Company and Fortress and the Founders Agreement (as defined in the SPMA), for the period November 12, 2018 to the termination of InvaGen's rights under Section 4 of the Stockholders Agreement that was signed between the Company, certain stockholders of the Company, and InvaGen. As a result of the consummation of the Share Repurchase Agreement on October 31, 2022, the Waiver Agreement was terminated and the right to dividends of the Company's Common Stock was restored. The Annual Stock Dividend terminates upon conversion of the Class A Preferred stock or a Change of Control as defined in the Third Amended and Restated Certificate of Incorporation.

Pursuant to the Third Amended and Restated Certificate of Incorporation, the Company issued111,209 shares of common stock to Fortress for the Annual Stock Dividend, representing 2.5% of the fully-diluted outstanding equity of the Company, on January 5, 2026. This was shown in the consolidated statements of stockholders' equity at December 31, 2025, as part of additional paid-in capital. The Company recorded an expense of approximately $0.1 million in research and development related to these issuable shares during the year ended December 31, 2025, as the shares are considered compensation to Fortress for services rendered.

The Company issued 101,935 shares of common stock to Fortress for the Annual Stock Dividend, representing2.5% of the fully-diluted outstanding equity of the Company, on January 2, 2025. This was shown in the consolidated statements of stockholders' equity atDecember 31, 2024, as part of additional paid-in capital. The Company recorded an expense of approximately $0.2 million in research and development related to these issuable shares during the year endedDecember 31, 2024, as the shares are considered compensation to Fortress for services rendered.

Stock-Based Compensation

The Company expenses stock-based compensation to its employees, consultants and board members over the requisite service period based on the estimated grant-date fair value of the awards. The Company estimates the fair value of option grants using the Black-Scholes option pricing model, which includes assumptions for expected volatility, risk-free interest rate, dividend yield, and estimated expected term. Stock-based awards with graded-vesting schedules are recognized on a straight-line basis over the requisite service period for each separately vesting tranche of the award. The Company accounts for forfeitures as they occur by reversing any expense recognized for unvested awards. The assumptions used in calculating the fair value of stock-based awards represent management's best estimates and involve inherent uncertainties and the application of management's judgment. Stock options granted to employees generally vest over three years and have a term of ten years.

Income Taxes

The Company accounts for income taxes under ASC 740, *Income Taxes* ("ASC 740"). ASC 740 requires the recognition of deferred tax assets and liabilities for both the expected impact of differences between the financial statement and tax basis of assets and liabilities and for the expected future tax benefit to be derived from tax loss and tax credit carry forwards. ASC 740 additionally requires a valuation allowance to be established when it is more likely than not that all or a portion of deferred tax assets will not be realized.

ASC 740 also clarifies the accounting for uncertainty in income taxes recognized in an enterprise's financial statements and prescribes a recognition threshold and measurement process for financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. For those benefits to be recognized, a tax position must be more-likely-than-not to be sustained upon examination by taxing authorities. ASC740 also provides guidance on de-recognition, classification, interest and penalties, accounting in interim period, disclosure and transition. Based on the Company's evaluation, it has been concluded that there are no significant uncertain tax positions requiring recognition in the Company's financial statements. All tax years since inception remain open to examination by major tax jurisdictions to which the Company is subject, as carryforward attributes generated in years past may still be adjusted upon examination by the respective tax authorities if they have or will be used in a future period. The Company believes that its income tax positions and deductions would be sustained on audit and does not anticipate any adjustments that would result in a material change to its financial position.

The Company's policy for recording interest and penalties associated with audits is to record such expense as a component of income tax expense. There were no amounts accrued for penalties or interest as of or during the years ended December 31, 2025 and 2024. Management is currently unaware of any issues under review that could result in significant payments, accruals or material deviations from its position.

Non-Controlling Interests

Non-controlling interests in consolidated entities represent the component of equity in consolidated entities held by third parties. Any change in ownership of a subsidiary while the controlling financial interest is retained is accounted for as an equity transaction between the controlling and non-controlling interests. Intercompany activity has been eliminated entirely in consolidation prior to the allocation of net gain/loss attributable to non-controlling interest, which is based on ownership interests. As of November 5, 2025, Baergic was deconsolidated as a result of the Axsome transaction (see Note 1).

Comprehensive Loss

The Company's comprehensive loss is equal to its net loss for all periods presented.

Net Loss Per Share

Basic and diluted net loss per share is computed by dividing net loss attributable to common share outstanding, including prefunded warrants and shares held in abeyance, during the period, without consideration of potential dilutive securities. For periods in which the Company generated a net loss, the Company does not include potential shares of common stock in diluted net loss per share when the impact of these items is anti-dilutive. The Company has generated a net loss for all periods presented, therefore diluted net loss per share is the same as basic net loss per share since the inclusion of potentially dilutive securities would be anti-dilutive. Dividends declared are paid and set aside among the holders of shares of common stock and Class A Preferred stock pro-rata on an as-if-converted basis.

The following table sets forth the potential common shares that could potentially dilute basic income per share in the future that were not included in the computation of diluted net loss per share because to do so would have been anti-dilutive for the periods presented:

	For the Years Ended December 31,	
	2025	**2024**
Unvested restricted stock units/awards	532	1,028
Deferred restricted stock units	235,000	235,000
Common stock issuable	111,209	112,185
Warrants	772,741	1,476,200
Options	256,474	256,474
Class A preferred shares[1]	222	222
Total potential dilutive effect	1,376,178	2,081,109

(1) Class A preferred shares are presented on an as-if converted basis.

In connection with the exercise of certain existing warrants in January 2024 and May 2024 (see Note 1), the Company recorded deemed dividends of $8.8 million for the issuance of new warrants. For the year ended December 31, 2024, net loss attributable to common stockholders consisted of net loss, as adjusted for deemed dividends.

The Company considers Class A preferred stock to be an additional class of common stock for the purpose of calculating net loss per share, as it does not have preferential rights in liquidation when compared to the Company's common stock, and therefore losses are allocated to these additional classes using the two-class method. The two-class method is an earnings allocation formula that treats participating securities as having rights that would otherwise have been available to common stockholders. Earnings allocated to the Class A preferred stock are not material for the years ended December 31, 2025 and 2024.

Recently Issued Accounting Standards

In December 2023, the FASB issued ASU 2023-09, "*Income Taxes (Topic 740): Improvements to Income Tax Disclosures",* which expands disclosures in an entity's income tax rate reconciliation table and disclosures regarding cash taxes paid both in the U.S. and foreign jurisdictions. The update will be effective for annual periods beginning after December 15, 2024. The Company adopted ASU 2023-09 on January 1, 2025, the beginning of its fiscal year ending December 31, 2025, on a prospective basis for annual periods, as permitted by the standard. Adoption of ASU 2023-09 resulted in expanded income tax disclosures, including a more disaggregated reconciliation of the statutory U.S. federal income tax rate to the Company's effective tax rate. The Company's enhanced income tax disclosures required by ASU 2023-09 are presented in Note 9 to the consolidated financial statements.

In November 2024, the FASB issued ASU No. 2024-03, *Income Statement – Reporting Comprehensive Income – Expense Disaggregation Disclosures (Subtopic 220-40): Disaggregation of Income Statement Expenses*, which requires new financial statement disclosures in tabular format, in the notes to financial statements, of specified information about certain costs and expenses. The amendments in this update do not change or remove current expense disclosure requirements. The amendments in this update are effective for fiscal years beginning after December 15, 2026, and interim periods within fiscal years beginning after December 15, 2027. Early adoption is permitted. The Company is currently evaluating the impact of the new standard on its financial statement disclosures.

Note 3 — License/Supplier Agreements

IV Tramadol License

Effective as of February 17, 2015, Fortress transferred the Revogenex license and all other rights and obligations under the License Agreement to the Company, pursuant to the terms of the Founders Agreement. In connection with the terms of the License Agreement, Fortress purchased an exclusive license to IV tramadol for the U.S. market from Revogenex, a privately held company in Dublin, Ireland. Fortress made an upfront payment of $2.0 million to Revogenex upon execution of the exclusive license, and on June 17, 2015, Fortress paid an additional $1.0 million to Revogenex after receiving all the assets specified in the agreement. In December 2019, $1.0 million became due to Revogenex in accordance with the Company's submission of its NDA. In addition, under the terms of the agreement, Revogenex is eligible to receive an additional milestone payment totaling $3.0 million upon the approval of IV tramadol from the FDA as well as royalty payments on net sales of the product ranging in the high single digits to low double digits.

On October 29, 2018, the Company and Zaklady Farmaceutyczne Polpharma ("Polpharma") extended the term of their exclusive supply agreement for drug product of IV tramadol to eight years from the date of the launch of the product. In addition, under the terms of the amended agreement, Polpharma is eligible to receive a milestone payment totaling $2.0 million upon the approval of IV tramadol from the FDA, as well as a low single digit royalty on net sales of the product for five years after launch.

Note 4 — Related Party Agreements

Founders Agreement and Management Services Agreement with Fortress

Fortress entered into a Founders Agreement with Avenue in February 2015 (as amended, the "Fortress-Avenue Founders Agreement"), pursuant to which Fortress assigned to Avenue all of its rights and interest under Fortress's license agreement with Revogenex for IV tramadol (the "License Agreement"). As partial consideration for the Fortress-Avenue Founders Agreement, Avenue assumed $ 3.0 million in debt that Fortress had accumulated for expenses and costs of forming Avenue and obtaining the IV tramadol license. This debt was repaid to Fortress in 2017. As additional consideration for the transfer of rights under the original Fortress-Avenue Founders Agreement, Avenue also agreed to: (i) issue annually to Fortress, on the anniversary date of the Fortress-Avenue Founders Agreement, shares of common stock equal to two and one half percent (2.5%) of the fully-diluted outstanding equity of Avenue; (ii) pay an equity fee in shares of Avenue common stock, payable within five (5) business days of the closing of any equity or debt financing for Avenue or any of its respective subsidiaries that occurs after the effective date of the Founders Agreement and ending on the date when Fortress no longer has majority voting control in Avenue's voting equity, equal to two and one half percent (2.5%) of the gross amount of any such equity or debt financing; and (iii) pay a cash fee equal to four and one half percent (4.5%) of Avenue's annual net sales, payable on an annual basis, within ninety (90) days of the end of each calendar year. In the event of a change in control (as it is defined in the Founders Agreement), Fortress will be paid a one-time change in control fee equal to five (5x) times the product of (i) net sales for the twelve (12) months immediately preceding the change in control and (ii) four and one-half percent (4.5%).

On September 13, 2016, the Company amended the Fortress-Avenue Founders Agreement to remove the Annual Equity Fee (that feature remained in substance and became issuable to the holders of Avenue's Class A Preferred stock, all of which is currently held by Fortress) and to add a term of 15 years, which upon expiration automatically renews for successive one-year periods unless terminated by Fortress or a Change in Control occurs. Concurrently with effecting such amendment of the Fortress-Avenue Founders Agreement, the Company entered into an Exchange Agreement whereby the Company exchanged Fortress' 155,555 Class A common shares for approximately 166,027 common shares and 250,000 Class A Preferred stock (see Note 7).

Effective as of February 17, 2015, Fortress entered into a Management Services Agreement (the "Fortress-Avenue MSA") with Avenue pursuant to which Fortress provides advisory and consulting services to Avenue pursuant to the terms thereof. The Fortress-Avenue MSA contained an initial five-year term and shall be automatically extended for additional five-year periods unless Fortress or the Company provides written notice of its desire not to automatically extend the term of the MSA at least 90 days prior to the applicable expiration date. Services provided under the Fortress-Avenue MSA may include, without limitation, (i) advice and assistance concerning any and all aspects of Avenue's operations, clinical trials, financial planning and strategic transactions and financings and (ii) conducting relations on behalf of Avenue with accountants, attorneys, financial advisors and other professionals (collectively, the "Services"). Avenue is obligated to utilize clinical research services, medical education, communication and marketing services and investor relations/public relation services of companies or individuals designated by Fortress, provided those services are offered at market prices. However, Avenue is not obligated to take or act upon any advice rendered from Fortress, and Fortress shall not be liable for any of Avenue's actions or inactions based upon their advice. Fortress and its affiliates, including all members of Avenue's Board of Directors, have been contractually exempt from fiduciary duties to Avenue relating to corporate opportunities. In consideration for the Services, Avenue will pay Fortress an annual consulting fee of $ 0.5 million (the "Annual Consulting Fee"), payable in advance in equal quarterly installments on the first business day of each calendar quarter in each year, provided, however, that such Annual Consulting Fee shall be increased to $1.0 million for each calendar year in which Avenue has net assets in excess of $100.0 million at the beginning of the calendar year. Effective beginning on November 12, 2018, eligibility to receive such fees was waived pursuant to a Waiver Agreement signed between Avenue, Fortress and InvaGen. The Fortress-Avenue MSA fee was reinstated upon the closing of the October 2022 public offering.

For the years ended December 31, 2025 and 2024, the Company had expenses related to the MSA of $500,000 and $250,000, respectively. The MSA expenses are split between research and development and general and administrative expense in the consolidated statements of operations. $250,000 and $125,000 of expenses related to the MSA were recognized in research and development and general and administrative for the years ended December 31 2025 and 2024, respectively. On November 13, 2024, the Company entered into a Subscription and Forgiveness Agreement with Fortress, whereby Fortress agreed to convert 50% of a total of $0.5 million owed by the Company under the MSA into newly issued common stock of the Company and forgive the remaining 50% of the accrued balance. Therefore, the Company issued a total of 122,850 shares based on the closing price of $2.035 on the day prior to the execution of the agreement and reduced its liabilities associated with accounts payable and accrued expenses by $0.5 million.

Acquisition of Baergic

On May 11, 2022, the Company entered into the Contribution Agreement with Fortress related to the Company's acquisition of Baergic, on the terms and subject to the satisfaction of conditions described above in Note 1 – Organization, Plan of Business Operations. Evaluation and negotiation of the Contribution Agreement was overseen, and execution of the Contribution Agreement was approved, by special committees at the Avenue and Fortress levels, both of which exclusively comprised independent and disinterested directors of the respective companies' boards. The Company believed that the terms of the Contribution Agreement were at least as favorable as the terms that the Company would have been able to obtain with a disinterested party.

The transaction was accounted for as an asset acquisition between entities under common control. As such, the transaction was recorded at carryover basis, with all assets, liabilities and non-controlling interests measured at their historical carrying values. The consolidated financial statements of the Company included the consolidated results of operations for Avenue and Baergic since the acquisition date on November 8, 2022 until the sale of Baergic to Axsome in November 2025 (see Note 1).

Founders Agreement and Management Services Agreement with Baergic

Pursuant to the Contribution Agreement between Avenue and Fortress, the Founders Agreement and Management Services Agreement that had previously been existing between Fortress and Baergic were assigned to Avenue, such that they then existed between Avenue and Baergic; those agreements are referred to herein as the Avenue-Baergic Founders Agreement and the Avenue-Baergic MSA, as applicable. The Annual Stock Dividend payable to the Company was 2.5% of common stock calculated as a percentage of fully diluted outstanding capital and became effective as of November 8, 2022 through November 5, 2025, the date of the sale of Baergic to Axsome (see Note 1). For the years ended December 31, 2025 and December 31, 2024, Baergic recorded an Annual Stock Dividend of $0 and $18,000 to Avenue on December 31, 2025 and 2024, respectively. No Annual Stock Dividend for the year ended December 31, 2025 was due as a result of the sale of Baergic to Axsome on November 5, 2025. The Annual Stock Dividend for the year ended December 31, 2024 was paid in shares on December 17, 2024.

The Avenue-Baergic Founders Agreement had an effective date of March 9, 2017, and a term of 15 years, which upon expiration automatically renewed for successive one-year periods unless terminated by Avenue and Baergic or a Change in Control (as defined in the Avenue-Baergic Founders Agreement) occurs. The Avenue-Baergic Founders Agreement terminated on November 5, 2025 with the sale of Baergic to Axsome, and the amount owed to Avenue under the Avenue-Baergic Agreement of $ 0.6 million as of November 5, 2025, was forgiven.

As additional consideration under the Avenue-Baergic Founders Agreement, Baergic had also: (i) paid an equity fee in shares of common stock, payable within five (5) business days of the closing of any equity or debt financing for Baergic that occurs after the effective date of the Avenue-Baergic Founders Agreement and ending on the date when Avenue no longer has majority voting control in the Baergic's voting equity, equal to two and one-half (2.5%) of the gross amount of any such equity or debt financing; and (ii) would have paid a cash fee equal to four and one-half percent (4.5%) of the Baergic's annual net sales, payable on an annual basis, within ninety (90) days of the end of each calendar year. In the event of a Change in Control, Baergic would have paid a one-time change in control fee equal to five (5x) times the product of (A) net sales for the twelve (12) months immediately preceding the change in control and (B) four and one-half percent (4.5%).

The Avenue-Baergic MSA had an effective date of March 9, 2017, pursuant to which Avenue rendered management, advisory and consulting services to Baergic. The MSA had an initial term of five years and was automatically renewed for successive five-year terms unless terminated in accordance with its provisions. Services provided under the MSA included, without limitation, (i) advice and assistance concerning any and all aspects of Baergic's operations, clinical trials, financial planning and strategic transactions and financings and (ii) conducting relations on behalf of the Baergic with accountants, attorneys, financial advisors and other professionals (collectively, the "Avenue Services"). Baergic was obligated to utilize clinical research services, medical education, communication and marketing services and investor relations/public relation services of companies or individuals designated by Avenue, provided those services were offered at market prices. However, Baergic was not obligated to take or act upon any advice rendered from Avenue and Avenue would not be liable for any of its actions or inactions based upon their advice. Pursuant to the Avenue-Baergic MSA and Baergic's Certificate of Incorporation, Avenue and its affiliates, including all members of Baergic's Board of Directors, had no fiduciary or other duty to communicate or present any corporate opportunities to Baergic or to refrain from engaging in business that is similar to that of Baergic. In consideration for the Avenue Services, Baergic paid Avenue an annual consulting fee of $0.5 million (the "Avenue-Baergic Annual Consulting Fee"), payable in advance in equal quarterly installments on the first business day of each calendar quarter in each year, provided, however, that such Avenue-Baergic Annual Consulting Fee shall be increased to $ 1.0 million for each calendar year in which Baergic has net assets in excess of $100 million at the beginning of the calendar year. The Avenue-Baergic MSA terminated on November 5, 2025 with the sale of Baergic to Axsome, and the amount owed to Avenue under the Avenue-Baergic MSA of $2.9 million as of November 5, 2025, was forgiven.

Note 5 — Accounts Payable and Accrued Expenses

Accounts payable, accrued expenses and other liabilities consisted of the following (in thousands):

	As of December 31,	
	2025	2024
Accounts payable	$ 94	$ 155
Accrued employee compensation	181	18
Accrued contracted services and other	193	481
Accounts payable and accrued expenses	$ 468	$ 654

Note 6 — Commitments and Contingencies

Leases

The Company is not a party to any leases for office space or equipment.

Litigation

The Company recognizes a liability for a contingency when it is probable that liability has been incurred and when the amount of loss can be reasonably estimated. When a range of probable loss can be estimated, the Company accrues the most likely amount of such loss, and if such amount is not determinable, then the Company accrues the minimum of the range of probable loss. As of December 31, 2025 and 2024, there was no litigation against the Company.

Note 7 — Stockholders' Equity

Class A Preferred Stock

On September 13, 2016, 2,000,000 shares of Preferred Stock were authorized, of which250,000 have been designated as Class A Preferred Stock and the remainder are undesignated preferred stock. The Class A Preferred Stock, with a par value of $ 0.0001 per share, is identical to undesignated Common Stock other than as to voting rights, conversion rights, and the Annual Stock Dividend right (as described below). The undesignated Preferred Stock may be issued from time to time inone or more series. The Company's Board of Directors is authorized to determine or alter the dividend rights, dividend rate, conversion rights, voting rights, rights and terms of redemption (including sinking fund provisions, if any), the redemption price or prices, the liquidation preferences and other designations, powers, preferences and relative, participating, optional or other special rights, if any, and the qualifications, limitations and restrictions granted to or imposed upon any wholly unissued series of Preferred Stock, and to fix the number of shares of any series of Preferred Stock (but not below the number of shares of any such series then outstanding).

On any matter presented to the stockholders of the Company for their action or consideration at any meeting of stockholders of the Company (or by written consent of stockholders in lieu of meeting), each holder of outstanding shares of Class A Preferred Stock shall be entitled to cast for each share of Class A Preferred Stock held by such holder as of the record date for determining stockholders entitled to vote on such matter, the number of votes that is equal to one and one-tenth (1.1) times a fraction, the numerator of which is the sum of (A) the number of shares of outstanding Common Stock and (B) the whole shares of Common Stock in to which the shares of outstanding Class A Preferred Stock are convertible, and the denominator of which is number of shares of outstanding Class A Preferred Stock (the "Class A Preferred Stock Ratio"). Thus, the Class A Preferred Stock will at all times constitute a voting majority.

Each share of Class A Preferred Stock is convertible, at the option of the holder, into one fully paid and nonassessable share of Common Stock (the "Conversion Ratio"), subject to certain adjustments. If the Company, at any time effects a subdivision or combination of the outstanding Common Stock (by any stock split, stock dividend, recapitalization, reverse stock split or otherwise), the applicable Conversion Ratio in effect immediately before that subdivision is proportionately decreased or increased, as applicable, so that the number of shares of Common Stock issuable on conversion of each share of Class A Preferred Stock shall be increased or decreased, a applicable, in proportion to such increase or decrease in the aggregate number of shares of Common Stock outstanding. Additionally, if any reorganization, recapitalization, reclassification, consolidation or merger involving the Company occurs in which the Common Stock (but not the Class A Preferred Stock) is converted into or exchanged for securities, cash or other property, then each share of Class A Preferred Stock becomes convertible into the kind and amount of securities, cash or other property which a holder of the number of shares of Common Stock of the Company issuable upon conversion of one share of the Class A Preferred Stock immediately prior to such reorganization, recapitalization, reclassification, consolidation or merger would have been entitled to receive pursuant to such transaction. Pursuant to the reverse stock split by the Company in April 2024, the Class A Preferred Stock has a Conversion Ratio of1,125 Class A Preferred shares toone share of common stock.

Common Stock

On January 9, 2024, the stockholders holding a majority of the outstanding voting power of the Company executed and delivered to the Board of Directors of the Company a written consent approving, among other items, an increase in the number of shares of common stock authorized under the Certificate of Incorporation, from 75,000,000 to 200,000,000. On February 20, 2024, the Company filed the Certificate of Amendment with the Secretary of State for the State of Delaware effectuating the Authorized Shares Increase. As of December 31, 2025, 200,000,000 shares were authorized and 3,183,558 shares of common stock were outstanding.

Holders of the Company's common stock are entitled toone vote for each share held on all matters submitted to a vote of stockholders and donot have cumulative voting rights. An election of directors by Avenue stockholders shall be determined by a plurality of the votes cast by the stockholders entitled to vote on the election. Holders of common stock are entitled to receive proportionately any dividends as may be declared by the Company's Board of Directors, subject to any preferential dividend rights of outstanding preferred stock.

In the event of the Company's liquidation or dissolution, the holders of common stock are entitled to receive proportionately all assets available for distribution to stockholders after the payment of all debts and other liabilities and subject to the prior rights of any outstanding preferred stock. Holders of common stock have no preemptive, subscription, redemption or conversion rights. The rights, preferences and privileges of holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that the Company may designate and issue in the future.

Equity Incentive Plan

The Company has in effect the 2015 Plan. The 2015 Plan was adopted in January 2015 by Avenue's stockholders and an amendment to the plan to increase the number of authorized shares issuable to 3,556 shares was approved by Avenue stockholders in December 2021. The 2015 Plan was amended again to increase the number of authorized shares issuable to 70,223 shares and approved by the Company's stockholders on January 30, 2023. On June 24, 2024, the Company's stockholders approved an amendment to the 2015 Plan to increase the number of authorized shares issuable to 5,070,223 shares, extend the term of the 2015 Plan to June 24, 2034, increase the limit of shares that may be issued upon exercise of incentive stock options by 5,000,000 shares, and to increase the annual share limit awards for non-employee directors to 500,000. Under the 2015 Plan, the Compensation Committee is authorized to grant stock-based awards to directors, officers, employees and consultants. The 2015 Plan limits the term of any option granted under the 2015 Plan to no more than 10 years from the date of grant.

Total shares available for the issuance of stock-based awards under the Company's 2015 Plan was 4,575,906 shares at December 31, 2025.

Stock-Based Compensation

The following table summarizes stock-based compensation expense for the years ended December 31, 2025 and 2024 (in thousands):

	For the year ended December 31,	
	2025	**2024**
Research and development	$ 124	$ 269
General and administrative	541	967
Total stock-based compensation expense	$ 665	$ 1,236

Restricted Stock Units and Restricted Stock Awards

The following table summarizes restricted stock unit and award activity for the year ended December 31, 2025:

	Number of Units and Awards	**Weighted Average Grant Date Fair Value**
Unvested balance at December 31, 2023	1,311	$ 197.19
Granted	235,000	2.46
Vested	(283)	85.50
Unvested balance at December 31, 2024	236,028	$ 3.44
Forfeited	(212)	171.94
Vested	(416)	85.50
Unvested balance at December 31, 2025	235,400	$ 3.19

For the years ended December 31, 2025 and 2024, stock-based compensation expenses associated with the amortization of restricted stock units and restricted stock awards for employees and non-employees were approximately $0.2 million and $0.4 million, respectively.

At December 31, 2025, the Company had unrecognized stock-based compensation expense related to restricted stock units and restricted stock awards of $0.1 million, which is expected to be recognized over the remaining weighted-average vesting period of 0.8 years. The expense is recognized over the vesting period of the award.

Stock Options

The following table summarizes the stock option activity for the years ended December 31, 2025 and 2024:

	Stock Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in thousands)
Outstanding as of December 31, 2023	22,474	$ 85.5000	9.50	$ —
Granted	234,000	2.46	10.00	$ —
Outstanding as of December 31, 2024	256,474	$ 9.74	9.62	$ —
Outstanding as of December 31, 2025	256,474	$ 9.74	8.62	$ —
Expected to vest	162,624	$ 5.84	8.68	$ —
Vested and Exercisable as of December 31, 2025	93,850	16.48	8.52	$ —

The aggregate intrinsic value of options is calculated as the difference between the exercise price of the stock options and the fair value of common stock for those options that had exercise prices lower than the fair value of common stock.

Upon the exercise of stock options, the Company will issue new shares of its common stock.

For the years ended December 31, 2025 and 2024, stock-based compensation expenses associated with the amortization of options awards for employees and non-employees were approximately $0.5 million and $0.8 million, respectively. As of December 31, 2025, unrecognized compensation cost for options issued was $0.1 million and will be recognized over an estimated weighted average amortization period of 0.8 years.

The Company used the Black-Scholes Model for determining the estimated fair value of stock-based compensation related to stock options. The table below summarized the assumptions used:

	For the Year Ended December 31, 2024
Risk-free interest rate	3.6%
Expected dividend yield	—
Expected term in years	5.6
Expected volatility	135.0%

No options were granted for the year ended December 31, 2025.

Stock Warrants

The following table summarizes the warrant activity for the years ended December 31, 2025, and 2024:

	Warrants	Weighted Average Exercise Price	Aggregate Intrinsic Value (in thousands)
Outstanding, December 31, 2023	524,601	$ 32.42	$ 1
Granted	1,861,817	$ 6.23	—
Exercised	(910,218)	$ 10.16	—
Outstanding, December 31, 2024	1,476,200	$ 8.64	$ —
Expired	(703,459)	$ 6.52	—
Outstanding, December 31, 2025	772,741	$ 10.56	$ —

For the year ended December 31, 2025, 13,779 Series B warrants originally issued in November 2023 and 689,680 Series D warrants originally issued in May 2024 expired. Upon the exercise of warrants, the Company will issue new shares of its common stock.

January 2024 Warrant Inducement and Private Placement

As described in Note 1, the issuance of the January 2024 Warrants was considered as part of the cost of an inducement and the January 2024 Warrants were valued using the Black-Scholes Model resulting in a $4.3 million deemed dividend that was recorded to additional paid-in-capital.

The key inputs for the Black-Scholes Model calculations on January 5, 2024 were as follows:

	January 2023 Warrants	New Series A Warrants	New Series B Warrants
Stock price	$ 14.25	$ 14.25	$ 14.25
Risk-free interest rate	4.40%	4.02%	4.40%
Expected dividend yield	—	—	—
Expected term in years	2.1	5.0	1.5
Expected volatility	185%	138%	187%

May 2024 Warrant Inducement and Private Placement

As described in Note 1, the issuance of the May 2024 Warrants was considered as part of the cost of an inducement and the November 2023 Warrants and January 2024 Warrants were valued using the Black-Scholes Model resulting in a $4.5 million deemed dividend that was recorded to additional paid-in-capital.

The key inputs for the Black-Scholes Model calculations on May 1, 2024 were as follows:

	October 2022 Warrants	November 2023 Warrants	January 2024 Warrants	Series C Warrants	Series D Warrants	Placement Agent Warrants
Stock price	$ 4.76	$ 4.76	$ 4.76	$ 4.76	$ 4.76	$ 4.76
Risk-free interest rate	4.79%	4.64%	4.64%	4.64%	4.96%	4.64%
Expected dividend yield	—	—	—	—	—	—
Expected term in years	3.4	4.5	4.7	5.0	1.5	5.0
Expected volatility	160%	148%	145%	141%	132%	141%

Note 8 — Common Stock Warrants

The Company accounts for warrants as either equity-classified or liability-classified instruments based on an assessment of the warrant's specific terms and applicable authoritative guidance in ASC 480 and 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, 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 issued or modified warrants that meet all of the criteria for equity classification, the warrants are required to be recorded as a component of additional paid-in capital at the time of issuance. For issued or modified warrants that do not meet all the criteria for equity classification, the warrants are required to be recorded at their initial fair value on the date of issuance, and each consolidated balance sheet date thereafter. Changes in the estimated fair value of the warrants are recognized as a gain or loss on the consolidated statements of operations.

Warrant Liability

The Company has issued freestanding warrants to purchase shares of its common stock in connection with financing activities (October 2022 Warrants and January 2023 Warrants as described in Note 1). The outstanding October 2022 Warrants and January 2023 Warrants are classified as liabilities in the balance sheet as they contain terms for redemption of the underlying security that are outside the Company's control.

The fair value of the warrants is re-measured at each financial reporting date with any changes in fair value being recognized in change in fair value of warrant liabilities, a component of other income (expense), in the consolidated statements of operations and comprehensive income (loss). The Company will continue to re-measure the fair value of the October 2022 Warrant liabilities until exercise or expiration of the warrants on October 10, 2027. The October 2022 Warrants originally contained a one-time down-round price protection feature. In connection with the January 2023 Registered Direct Offering and Private Placement, the down-round price protection feature was triggered and the exercise price for the October 2022 Warrants was permanently adjusted to $116.25, which was the offering price for the January 2023 Registered Direct Offering and Private Placement. The Black-Scholes model was used to value any outstanding October 2022 Warrants and January 2023 Warrants as of December 31, 2025 and 2024. The approach required management to estimate inputs including expected volatility and expected term and is most significantly impacted by the volatility of the Company's common stock price. These inputs are inherently subjective and require significant analysis and judgment to develop.

Fair Value of Warrant Liabilities

Warrant liabilities are categorized within Level 3 of the fair value hierarchy and are measured at fair value on a recurring basis as follows (in thousands):

	October 2022 Warrants	January 2023 Warrants	Total
Fair value of warrants outstanding as of December 31, 2023	$ 426	$ 160	$ 586
Change in fair value of warrants	(299)	129	(170)
Exercise of warrants	(111)	(289)	(400)
Fair value of warrants outstanding as of December 31, 2024	16	—	16
Change in fair value of warrants	(15)	—	(15)
Fair value of warrants outstanding as of December 31, 2025	$ 1	$ —	$ 1

The key inputs for the October 2022 Warrants using the Black-Scholes model were as follows:

	December 31, 2025	December 31, 2024
Stock price	$ 0.68	$ 2.00
Risk-free interest rate	3.75%	4.27%
Expected dividend yield	—	—
Expected term in years	1.78	2.80
Expected volatility	151%	155%

Note 9 — Income Taxes

The Company has accumulated net losses since inception. The Company recorded a minimal provision for the year ended December 31, 2025 and did not record an income tax provision or benefit during the year ended December 31, 2024.

The Company adopted ASU 2023-09, Income Taxes (Topic 740): Improvements to Income Tax Disclosures, on a prospective basis. As a result, the 2025 rate reconciliation is presented in accordance with the new disclosure requirements, while the 2024 reconciliation continues to be presented under the disclosure requirements in effect for that period.

A reconciliation of the statutory U.S. federal rate to the Company's effective tax rate pursuant to the disclosure requirements of ASU 2023-09 for the year ended December 31, 2025 is as follows:

	For the year ended December 31, 2025	
	Amount	Percent
U.S. federal statutory tax rate	$ (615)	21%
State and local income taxes, net of federal income tax effect(1)	2	0%
Tax credits	(59)	2%
Change in valuation allowance	(870)	30%
Non-deductible items	22	-1%
Other adjustments		
Sale of subsidiary(2)	1,522	-52%
Provision for income taxes and effective income tax rate	$ 2	0%

(1) During the year ended December 31, 2025, state taxes in Florida comprised greater than 50% of the tax effect in this category.

(2) The sale of subsidiary is driven by the write-off of Baergic's tax attributes and other deferred tax assets due to the sale of the subsidiary in 2025. There is an offsetting impact within the Change in valuation allowance as the deferred tax assets maintained a full valuation allowance.

A reconciliation of the statutory U.S. federal rate to the Company's effective tax rate for the year ended December 31, 2024 is as follows:

	For the year ended December 31, 2024
Statutory federal income tax rate	21%
State rate change	(14)%
Credits	1%
None-deductible items	1%
Return to provision	(12)%
Change in fair value of warrant liability	(2)%
Change in valuation allowance	6%
Income taxes provision (benefit)	(0)%

The components of the net deferred tax asset as of December 31, 2025 and 2024 are the following (in thousands):

	As of December 31,	
	2025	2024
Deferred tax assets:		
Net operating loss carryforwards	$ 27,530	$ 27,114
Stock compensation and other	520	404
In process research and development	1,303	1,929
Accruals and reserves	38	3
Section 174 capitalization	2,143	2,536
Tax credits	3,043	2,995
Other	23	—
Total deferred tax assets	34,600	34,981
Less: valuation allowance	(34,600)	(34,981)
Deferred tax assets, net	$ —	$ —

The Company has determined, based upon available evidence, that it is more likely than not that the net deferred tax asset will not be realized and, accordingly, has provided a full valuation allowance against it. A valuation allowance of approximately $ 34.6 million and $35.0 million was recorded as of December 31, 2025 and 2024, respectively.

As of December 31, 2025, the Company had federal and state net operating loss carryforwards of approximately $88.7 million and $144.3 million, respectively. Approximately $74.3 million of the federal net operating loss carryforwards and $3.2 million of the state net operating loss carryforwards can be carried forward indefinitely. The remaining $14.5 million of federal and $141.1 million of state net operating loss carryforwards will begin to expire, if not utilized, by 2035 and 2037, respectively. The Company has $3.0 million of research and development credit carryforwards, which will begin to expire, if not utilized, in 2035. Utilization of the net operating loss and credit carryforwards may be subject to an annual limitation due to the ownership change limitations provided by Section 382 of the Internal Revenue Code. The Company has not performed a Section 382 analysis as of December 31, 2025.

There are no significant matters determined to be unrecognized tax benefits taken or expected to be taken in a tax return, in accordance with ASC 740, which clarifies the accounting for uncertainty in income taxes recognized in the consolidated financial statements, that have been recorded on the Company's consolidated financial statements for the periods year ended December 31, 2025 and 2024.

Additionally, ASC 740 provides guidance on the recognition of interest and penalties related to income taxes. There were no interest or penalties related to income taxes that have been accrued or recognized as of and for the periods ended December 31, 2025 and 2024.

The Company is subject to U.S. federal and various state taxes. Because of net operating losses, all federal tax years since inception remain open for the assessment of income taxes. The expiration of the statute of limitations related to the various state income and franchise tax returns varies by state.

On July 4, 2025, President Donald J. Trump signed the "One Big Beautiful Bill Act" (OBBBA) into law. Key corporate tax provisions include the restoration of 100% bonus depreciation, immediate expensing for domestic research and experimental expenditures, changes to interest limitation rules, and expanded aggregation requirements for compensation deductibility limits. In accordance with ASC 740, the Company recognized the effects of the new tax law in the period enacted. As a result, the Company immediately expensed current-year domestic research and experimental expenditures and elected to continue amortizing its existing domestic capitalized research and experimental expenditures over their remaining useful lives. Due to the Company having a full valuation allowance, there were no impacts to the effective tax rate.

Under ASC 2023- 09, entities must disclose income taxes paid (net of refunds received), disaggregated between federal and state. This also requires disclosing income taxes paid (net of refunds) by individual jurisdictions that represent more than 5% of total income taxes paid (net of refunds).

Because the company does not have significant payments for the year ended December 31, 2025, no amounts are disclosed.

Note 10 — Subsequent Events

On February 18, 2026, Avenue entered into a license agreement with Duke University ("Duke"), whereby Avenue obtained an exclusive worldwide license (the "ATX-04 License") from Duke to certain patents and know-how pertaining to clenbuterol for the treatment of lysosomal storage diseases. Under the ATX04 License, Avenue agreed to make an upfront payment and reimburse certain patent expenses to Duke and has an obligation to make development, regulatory, and commercial milestone payments upon the achievement of certain milestones. In addition, Avenue is obligated to pay a tiered low single-digit royalty on future net sales of ATX- 04. Avenue intends to advance ATX- 04 through a late-stage clinical development program leveraging existing human safety and efficacy data, with an initial focus on treating Pompe disease as an adjunct to enzyme replacement therapy ("ERT").

SIGNATURES

Pursuant to the requirements of Section 12 of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Avenue Therapeutics, Inc.

By: /s/ Alexandra MacLean, M.D.
Name: Alexandra MacLean, M.D.
Title: Chief Executive Officer and Director
March 30, 2026

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Alexandra MacLean, M.D. Alexandra MacLean, M.D.	Chief Executive Officer and Director (Principal Executive Officer)	March 30, 2026
/s/ David Jin David Jin	Interim Chief Financial Officer and Chief Operating Officer (Principal Financial and Accounting Officer)	March 30, 2026
/s/ Jay Kranzler, M.D., Ph.D. Jay Kranzler, M.D., Ph.D.	Chairman of the Board	March 30, 2026
/s/ Faith Charles Faith Charles	Director	March 30, 2026
/s/ Neil Herskowitz Neil Herskowitz	Director	March 30, 2026
/s/ Curtis Oltmans Curtis Oltmans	Director	March 30, 2026
/s/ Lindsay A. Rosenwald, M.D. Lindsay A. Rosenwald, M.D.	Director	March 30, 2026

DESCRIPTION OF THE REGISTRANT'S SECURITIES REGISTERED PURSUANT TO SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934
DESCRIPTION OF CAPITAL STOCK

*Avenue Therapeutics, Inc. (the "**Company**") has one class of securities registered under Section 12 of the Securities Exchange Act of 1934, as amended: our common stock, with $0.0001 par value ("**Common Stock**"). The following descriptions of our Common Stock, preferred stock and warrants are summaries and are qualified in their entirety by reference to our Third Amended and Restated Certificate of Incorporation, as amended (the "**Certificate of Incorporation**"), our Second Amended and Restated Bylaws (the "**Bylaws**") and our outstanding warrants. We encourage you to read the Certificate of Incorporation, Bylaws, and warrants, as well as the applicable provisions of the General Corporation Law of the State of Delaware, as amended (the "**DGCL**"), for more information.*

Authorized Capital Stock

Our authorized capital stock consists of 200,000,000 shares of Common Stock and 2,000,000 shares of preferred stock (the "**Preferred Stock**") of which 250,000 have been designated as Class A Preferred Stock and the remainder of which are undesignated Preferred Stock.

Common Stock

Voting Rights

Holders of our Common Stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders and do not have cumulative voting rights. An election of directors by our stockholders shall be determined by a plurality of the votes cast by the stockholders entitled to vote on the election. However, the holders of our outstanding Class A Preferred Stock, which is held exclusively by our parent company as of the end of the period covered by this report, Fortress Biotech, Inc. ("**Fortress**"), are entitled to cast, for each share of Class A Preferred Stock, the number of votes that is equal to one and one-tenth (1.1) times a fraction, the numerator of which is the sum of (A) the aggregate number of shares of outstanding Common Stock and (B) the whole shares of Common Stock into which the shares of outstanding the Class A Preferred Stock are convertible and the denominator of which is the aggregate number of shares of outstanding Class A Preferred Stock. Thus, Fortress, so long as it holds all shares of our Class A Preferred Stock, will at all times have voting control of us. Further, for a period of ten (10) years from the date of the first issuance of shares of Class A Preferred Stock, the holders of record of the shares of Class A Preferred Stock (or other capital stock or securities issued upon conversion of or in exchange for the Class A Preferred Stock), exclusively and as a separate class, are entitled to appoint or elect the majority of our directors, however, the Company and Fortress have historically elected to waive application of this provision of the certificate of incorporation, and instead the holders of the Common Stock have voted together with the holders of the Class A Preferred Stock for all directors at our annual meetings of stockholders, with the holders of the Class A Preferred Stock utilizing the supervoting rights described above.

Liquidation and Other Rights

In the event of our liquidation or dissolution, the holders of Common Stock are entitled to receive proportionately all assets available for distribution to stockholders after the payment of all debts and other liabilities and subject to the prior rights of any outstanding Preferred Stock. Holders of Common Stock have no preemptive, subscription, redemption or conversion rights. The rights, preferences and privileges of holders of Common Stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of Preferred Stock that we may designate and issue in the future.

Dividends

Holders of Common Stock are entitled to receive proportionately any dividends as may be declared by our board of directors (the "**Board of Directors**"), subject to any preferential dividend rights of outstanding Preferred Stock. Pursuant to the certificate of designation relating to the Class A Preferred Stock, we are prohibited from paying dividends on our Common Stock until all dividends required to be paid to the holders of our Class A Preferred Stock have been paid or declared and set apart for payment.

Listing

Our Common Stock is traded on the OTC Pink Market under the symbol "ATXI." The transfer agent and registrar for our Common Stock is VStock Transfer, LLC.

Anti-Takeover Effects of Various Provisions of Delaware Law and the Company's Certificate of Incorporation and Bylaws

Provisions of the DGCL and our Certificate of Incorporation and Bylaws could make it more difficult to acquire the Company by means of a tender offer, a proxy contest or otherwise, or to remove incumbent officers and directors. These provisions, including those summarized below, may encourage certain types of coercive takeover practices and takeover bids.

Delaware Anti-Takeover Statute. In general, Section 203 of the DGCL prohibits a publicly held Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a period of three (3) years following the time the person became an interested stockholder, unless the business combination or the acquisition of shares that resulted in a stockholder becoming an interested stockholder is approved in a prescribed manner. Generally, a "business combination" includes a merger, asset or stock sale or other transaction resulting in a financial benefit to the interested stockholder. Generally, an "interested stockholder" is a person who, together with affiliates and associates, owns (or within three (3) years prior to the determination of interested stockholder status did own) 15% or more of a corporation's voting stock. However, our Certificate of Incorporation provides that we are not subject to the anti-takeover provisions of Section 203 of the DGCL.

Removal. Subject to the rights of any holders of any outstanding series of our Preferred Stock, stockholders may remove our directors with or without cause. Removal will require the affirmative vote of holders of a majority of our voting stock.

Size of Board and Vacancies. Our Bylaws provide that the number of directors be fixed exclusively by the Board of Directors. Any vacancies created on its Board of Directors resulting from any increase in the authorized number of directors or the death, resignation, retirement, disqualification, removal from office or other cause will be filled by a majority of the Board of Directors then in office, even if less than a quorum is present, or by a sole remaining director. Any director appointed to fill a vacancy on our Board of Directors will be appointed until the next annual meeting and until his or her successor has been elected and qualified.

Requirements for Advance Notification of Stockholder Nominations and Proposals. Our Bylaws establish advance notice procedures with respect to stockholder proposals and nomination of candidates for election as directors other than nominations made by or at the direction of its Board of Directors or a committee of our Board of Directors.

Undesignated Preferred Stock. Our Board of Directors is authorized to issue up to 2,000,000 shares of Preferred Stock without additional stockholder approval, which Preferred Stock could have voting rights or conversion rights that, if exercised, could adversely affect the voting power of the holders of Common Stock. The issuance of shares of Preferred Stock may have the effect of delaying, deferring or preventing a change in control of the Company without any action by the Company's stockholders.

Preferred Stock

Class A Preferred Stock

Class A Preferred Stock is identical to our Common Stock other than as to voting rights, the election of directors for a definite period, conversion rights and the PIK Dividend right (as described below). On any matter presented to our stockholders for their action or consideration at any meeting of our stockholders (or by written consent of stockholders in lieu of meeting), each holder of outstanding shares of Class A Preferred Stock will be entitled to cast for each share of Class A Preferred Stock held by such holder as of the record date for determining stockholders entitled to vote on such matter, the number of votes that is equal to one and one-tenth (1.1) times a fraction, the numerator of which is the sum of (A) the shares of outstanding Common Stock and (B) the whole shares of Common Stock in to which the shares of outstanding Class A Preferred Stock are convertible and the denominator of which is the number of shares of outstanding Class A Preferred Stock. Thus, the Class A Preferred Stock will at all times constitute a voting majority.

For a period of ten (10) years from the date of the first issuance of shares of Class A Preferred Stock (the "**Class A Director Period**") the holders of record of the shares of Class A Preferred Stock (or other capital stock or securities issued upon conversion of or in exchange for the Class A Preferred Stock), exclusively and as a separate class, shall be entitled to appoint or elect the majority of our directors, or the Class A Directors. Thus, the Class A Preferred Stock will be entitled to elect the majority of the Board of Directors during the Class A Director Period.

The holders of the outstanding shares of Class A Preferred Stock shall receive on January 1 of each year (each, a "**PIK Dividend Payment Date**") after the original issuance date of the Class A Preferred Stock until the date all outstanding shares of Class A Preferred Stock are converted into Common Stock or redeemed (and the purchase price is paid in full), pro rata per share dividends paid in additional fully paid and nonassessable shares of Common Stock, such dividend being herein called "PIK Dividends", such that the aggregate number of shares of Common Stock issued pursuant to such PIK Dividend is equal to two and one half percent (2.5%) of our fully-diluted outstanding capitalization on the date that is one business day prior to any PIK Dividend Payment Date, or PIK Record Date. In the event the Class A Preferred Stock converts into Common Stock, the holders shall receive all PIK Dividends accrued through the date of such conversion.

Each share of Class A Preferred Stock is convertible, at the option of the holder, into one fully paid and nonassessable share of Common Stock subject to certain adjustments.

Undesignated Preferred Stock

The undesignated Preferred Stock may be issued from time to time in one or more series. Our Board of Directors is authorized to determine or alter the dividend rights, dividend rate, conversion rights, voting rights, rights and terms of redemption (including sinking fund provisions, if any), the redemption price or prices, the liquidation preferences and other designations, powers, preferences and relative, participating, optional or other special rights, if any, and the qualifications, limitations and restrictions granted to or imposed upon any wholly unissued series of Preferred Stock, and to fix the number of shares of any series of Preferred Stock (but not below the number of shares of any such series then outstanding).

Warrants

We have issued, and may in the future issue additional, warrants to purchase shares of our Common Stock and/or Preferred Stock in one or more series together with other securities or separately.

Warrants Issued in January 2017

Exercisability

The warrants issued in January 2017 (the "**2017 Warrants**") became exercisable upon issuance and may be exercised at any time up to the date that is ten (10) years after their original issuance. The 2017 Warrants are exercisable, at the option of each holder, in whole or in part by delivering to us a duly executed exercise notice and by payment in full in immediately available funds for the number of shares of Common Stock purchased upon such exercise. No fractional shares of Common Stock will be issued in connection with the exercise of a 2017 Warrant. In lieu of fractional shares, we will pay the holder an amount in cash equal to the fractional amount multiplied by the exercise price.

Exercise Price

The exercise price per whole share of Common Stock purchasable upon exercise of the 2017 Warrants varies and is equal to the price per share at which certain convertible promissory notes sold to investors first convert into Common Stock. The exercise price is subject to appropriate adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our Common Stock and also upon any distributions of assets, including cash, stock or other property to our stockholders.

Transferability

Each holder of a 2017 Warrant must give written notice to the Company of his, her or its intention to effect a transfer of a 2017 Warrant or the Common Stock underlying the 2017 Warrants (together, the "**Securities**") prior to any proposed transfer. Each such notice shall describe the manner and circumstances of the proposed transfer in sufficient detail, and shall, if the Company so requests, be accompanied (except in transactions in compliance with Rule 144) by either (i) an unqualified written opinion of legal counsel addressed to the Company and reasonably satisfactory in form and substance to the Company's counsel, to the effect that the proposed transfer of the Securities may be effected without registration under the Securities Act of 1933, as amended ("**Securities Act**"), or (ii) a "no action" letter from the Securities and Exchange Commission (the "**Commission**") to the effect that the transfer of such Securities without registration will not result in a recommendation by the staff to the Commission that action be taken with respect thereto, at which point the holder of the Securities shall be entitled to transfer the Securities in accordance with the terms of the notice delivered by the holder to the Company. No such registration statement or opinion of counsel would be necessary for a transfer by a Holder to any affiliate of such Holder.

Exchange Listing

The 2017 Warrants are not listed on any securities exchange or nationally recognized trading system.

Rights as a Stockholder

Except as otherwise provided in the 2017 Warrants or by virtue of such holder's ownership of shares of our Common Stock, the holder of a 2017 Warrant does not have the rights or privileges of a holder of our Common Stock, including any voting rights, until the holder exercises the 2017 Warrant.

Governing Law

The 2017 Warrants are governed by New York law.

Cash Warrants Issued in October 2022

Exercisability

The warrants issued on October 11, 2022 (the "**2022 Warrants**") became exercisable upon issuance and may be exercised at any time up to the date that is five (5) years after their original issuance. The 2022 Warrants are exercisable, at the option of each holder, in whole or in part by delivering to us a duly executed exercise notice and, at any time a registration statement registering the offer and sale of the shares of Common Stock underlying the 2022 Warrants under the Securities Act is effective and available for the issuance of such shares, or an exemption from registration under the Securities Act is available for the issuance of such shares, by payment in full in immediately available funds for the number of shares of Common Stock purchased upon such exercise. If a registration statement registering the offer and sale of the shares of Common Stock underlying the 2022 Warrants under the Securities Act is not effective or available and an exemption from registration under the Securities Act is not available for the issuance of such shares, the holder may elect to exercise the 2022 Warrant through a cashless exercise, in which case the holder would receive upon such exercise the net number of shares of Common Stock determined according to the formula set forth in the 2022 Warrant. No fractional shares of Common Stock will be issued in connection with the exercise of a 2022 Warrant. In lieu of fractional shares, we will pay the holder an amount in cash equal to the fractional amount multiplied by the exercise price.

Exercise Limitation

A holder will not have the right to exercise any portion of the 2022 Warrant if the holder (together with its affiliates and certain related parties) would beneficially own in excess of 4.99% of the number of shares of our Common Stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the 2022 Warrants. However, any holder may increase or decrease such percentage to any other percentage not in excess of 9.99%, provided that any increase in such percentage shall not be effective until 61 days following notice from the holder to us.

Exercise Price

The exercise price per whole share of Common Stock purchasable upon exercise of the 2022 Warrants is $116.25. The exercise price is subject to appropriate adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our Common Stock and also upon any distributions of assets, including cash, stock or other property to our stockholders.

Dilutive Issuance Adjustments

If, while the 2022 Warrants are outstanding, we engage in any transaction involving the issue or sale of our shares of Common Stock or equivalent securities at an effective price per share less than the exercise price of the 2022 Warrants then in effect (such lower price, the "**Base Share Price**"), the exercise price of the 2022 Warrants was to be reduced to equal the Base Share Price. There would only be one such adjustment to the exercise price, if any, while the 2022 Warrants are outstanding. This adjustment occurred effective as of the close of business on January 27, 2023.

Transferability

Subject to applicable laws, the 2022 Warrants may be offered for sale, sold, transferred or assigned without our consent.

Exchange Listing

The 2022 Warrants are not listed on any securities exchange or nationally recognized trading system.

Warrant Agent

The 2022 Warrants were issued in registered form under a warrant agency agreement between VStock Transfer, LLC, as warrant agent, and us. The 2022 Warrants were initially represented only by one or more global warrants deposited with the warrant agent, as custodian on behalf of The Depository Trust Company ("**DTC**") and registered in the name of Cede & Co., a nominee of DTC, or as otherwise directed by DTC.

Fundamental Transactions

In the event of a fundamental transaction, as described in the 2022 Warrants and generally including any reorganization, recapitalization or reclassification of our Common Stock, the sale, transfer or other disposition of all or substantially all of our properties or assets, our consolidation or merger with or into another person, the acquisition of more than 50% of our outstanding Common Stock, or any person or group becoming the beneficial owner of 50% of the voting power represented by our outstanding Common Stock, the holders of the 2022 Warrants will be entitled to receive upon exercise of the 2022 Warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the 2022 Warrants immediately prior to such fundamental transaction.

Rights as a Stockholder

Except as otherwise provided in the 2022 Warrants or by virtue of such holder's ownership of shares of our Common Stock, the holder of a 2022 Warrant does not have the rights or privileges of a holder of our Common Stock, including any voting rights, until the holder exercises the 2022 Warrant.

Governing Law

The 2022 Warrants and the warrant agency agreement are governed by New York law.

Series A Warrants Issued in November 2023

Exercisability

The Series A warrants (the **November 2023 Warrants**") were issued on November 2, 2023, became exercisable immediately and may be exercised at any time up to the date that is five (5) years after their original issuance. The November 2023 Warrants are exercisable, at the option of each holder, in whole or in part by delivering to us a duly executed exercise notice and, at any time a registration statement registering the offer and sale of the shares of Common Stock underlying the November 2023 Warrants under the Securities Act is effective and available for the issuance of such shares, or an exemption from registration under the Securities Act is available for the issuance of such shares, by payment in full in immediately available funds for the number of shares of Common Stock purchased upon such exercise. If a registration statement registering the offer and sale of the shares of Common Stock underlying the November 2023 Warrants under the Securities Act is not effective or available and an exemption from registration under the Securities Act is not available for the issuance of such shares, the holder may elect to exercise the warrant through a cashless exercise, in which case the holder would receive upon such exercise the net number of shares of Common Stock determined according to the formula set forth in the warrant. No fractional shares of Common Stock will be issued in connection with the exercise of the November 2023 Warrants. In lieu of fractional shares, we will pay the holder an amount in cash equal to the fractional amount multiplied by the exercise price.

Exercise Limitation

A holder will not have the right to exercise any portion of the November 2023 Warrants if the holder (together with its affiliates and certain related parties) would beneficially own in excess of 4.99% of the number of shares of our Common Stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the November 2023 Warrants. However, any holder may increase or decrease such percentage to any other percentage not in excess of 9.99%, provided that any increase in such percentage shall not be effective until 61 days following notice from the holder to us.

Exercise Price

The exercise price per whole share of Common Stock purchasable upon exercise of the November 2023 Warrants is $22.545. The exercise price is subject to appropriate adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our Common Stock and also upon any distributions of assets, including cash, stock or other property to our stockholders.

Transferability

Subject to applicable laws, the November 2023 Warrants may be offered for sale, sold, transferred or assigned without our consent.

Exchange Listing

The November 2023 Warrants are not listed on any securities exchange or nationally recognized trading system.

Warrant Agent

The warrants were issued in registered form under a warrant agency agreement between VStock Transfer, LLC, as warrant agent, and us. The warrants were initially represented only by one or more global warrants deposited with the warrant agent, as custodian on behalf of DTC and registered in the name of Cede & Co., a nominee of DTC, or as otherwise directed by DTC.

Fundamental Transactions

In the event of a fundamental transaction, as described in the November 2023 Warrants and generally including any reorganization, recapitalization or reclassification of our Common Stock, the sale, transfer or other disposition of all or substantially all of our properties or assets, our consolidation or merger with or into another person, or any person or group, other than our parent Fortress, becoming the beneficial owner of 50% of the voting power represented by our outstanding capital stock, the holders of the November 2023 Warrants will be entitled to receive upon exercise of the November 2023 Warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the November 2023 Warrants immediately prior to such fundamental transaction.

Rights as a Stockholder

Except as otherwise provided in the November 2023 Warrants or by virtue of such holder's ownership of shares of our Common Stock, the holder of a November 2023 Warrants does not have the rights or privileges of a holder of our Common Stock, including any voting rights, until the holder exercises the November 2023 Warrants.

Governing Law

The November 2023 Warrants and warrant agency agreement are governed by New York law.

Exercise of the November 2023 Warrants

On January 5, 2024, the Company entered into an inducement offer letter agreement with certain investors (the "**November 2023 Investors**") in connection with certain outstanding November 2023 Warrants, under which the November 2023 Investors agreed to exercise 14,600,000 of the outstanding November 2023 Warrants for cash at the existing exercise price of $0.3006 per share.

Series C Warrants and Placement Agent Warrants Issued in May 2024

Exercisability

The Series C warrants (the "**Series C Warrants**") and the placement agent warrants (the "**Placement Agent Warrants**", and together with the Series C Warrants, the "**May 2024 Warrants**") were issued to certain selling stockholders in a private placement transaction that closed on May 1, 2024. The May 2024 Warrants became exercisable immediately upon issuance and remain exercisable for a period of five (5) years from the date of issuance. The May 2024 Warrants are exercisable, at the option of each holder, respectively, in whole or in part, by delivering a duly executed exercise notice accompanied by payment in full for the number of shares of Common Stock purchased upon such exercise (except in the case of a cashless exercise discussed below). If, at the time a holder exercises its May 2024 Warrants, a registration statement registering the resale of the underlying shares of Common Stock by the holder, under the Securities Act is not then effective or available, then in lieu of making the cash payment otherwise contemplated to be made upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part), the net number of shares of Common Stock determined according to a formula set forth in the May 2024 Warrants.

Exercise Limitation

A holder (together with their affiliates) may not exercise any portion of their May 2024 Warrants to the extent that the holder would own more than 4.99% (or, at the election of the holder, 9.99%) of the outstanding Common Stock immediately after exercise, except that upon prior notice from the holder, the holder may increase or decrease the amount of ownership of outstanding stock after exercising their May 2024 Warrants up to 9.99% of the number of shares of Common Stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the May 2024 Warrants, provided that any increase will not be effective until 61 days following notice to the Company.

Exercise Price

The exercise price per whole share of Common Stock purchasable upon exercise of the Series C Warrants is $6.20, and the exercise price per whole share of Common Stock purchasable upon exercise of the Placement Agent Warrants is $7.75. The exercise price is subject to appropriate adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our Common Stock and also upon any distributions of assets, including cash, stock or other property to our stockholders.

Transferability

Subject to applicable laws, the May 2024 Warrants may be offered for sale, sold, transferred or assigned without our consent.

Exchange Listing

The May 2024 Warrants are not listed on any securities exchange or nationally recognized trading system.

Fundamental Transactions

If at any time the May 2024 Warrants are outstanding, the Company, either directly or indirectly, in one or more related transactions, effects a Fundamental Transaction (as defined in the May 2024 Warrants), a holder of such warrants is entitled to receive the number of shares of Common Stock of the successor or acquiring corporation, or of the Company if the Company is the surviving corporation, and any additional consideration receivable as a result of the Fundamental Transaction by such holder of the number of shares of Common Stock for which the May 2024 Warrants are exercisable immediately prior to the Fundamental Transaction. As an alternative, the holder may, at their option, in the event of a Fundamental Transaction, exercisable at any time concurrently with, or within 30 days after, the consummation of the Fundamental Transaction (or, if later, the date of the public announcement of the applicable fundamental transaction), cause the Company to purchase the unexercised portion of the May 2024 Warrants from the holder, respectively, by paying to the holder, as applicable, an amount of cash equal to the Black Scholes Value (as defined in the May 2024 Warrants) of the remaining unexercised portion of the May 2024 Warrants on the date of the consummation of such Fundamental Transaction.

Rights as a Stockholder

Except as otherwise provided in the May 2024 Warrants, or by virtue of the holder's ownership of shares of Common Stock, such holder does not have the rights or privileges of a holder of Common Stock, including any voting rights, until such holder exercises such holder's May 2024 Warrants. The May 2024 Warrants provide that the holders of the May 2024 Warrants have the right to participate in certain distributions or dividends, other than cash, paid on shares of Common Stock.

Waivers and Amendments

The May 2024 Warrants may be modified or amended, or the provisions of the May 2024 Warrants waived, with the Company's and the holder's written consent.

Governing Law

The May 2024 Warrants are governed by New York law.

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the registration statements (Nos. 333-280782, 333-269689, 333-261710, and 333-219972) on Form S-8, and (Nos. 333-279125, 333-274562 and 333-267206) on Form S-1 of our report dated March 30, 2026, with respect to the consolidated financial statements of Avenue Therapeutics, Inc. and subsidiary.

/s/ KPMG LLP

New York, New York
March 30, 2026

Exhibit 31.1

Certification of Principal Executive Officer
Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934,
As Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Alexandra MacLean, M.D., certify that:

1. I have reviewed this Annual Report on Form 10-K of Avenue Therapeutics, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

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

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

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

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

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

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

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

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

/s/ Alexandra MacLean, M.D.
Alexandra MacLean, M.D.
Chief Executive Officer
(Principal Executive Officer)
March 30, 2026

Exhibit 31.2

Certification of Principal Financial Officer
Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934,
As Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, David Jin, certify that:

1. I have reviewed this Annual Report on Form 10-K of Avenue Therapeutics, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

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

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

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

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

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

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

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

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

/s/ David Jin
David Jin
Interim Chief Financial Officer
(Principal Financial Officer)
March 30, 2026

Exhibit 32.1

Certification of Principal Executive Officer Pursuant to 18 U.S.C. Section 1350,
As Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

I, Alexandra MacLean, M.D., Chief Executive Officer of Avenue Therapeutics, Inc. (the "Company"), in compliance with 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, hereby certify that, to the best of my knowledge, the Company's Annual Report on Form 10-K for the period ended December 31, 2025 (the "Report") filed with the Securities and Exchange Commission:

- Fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

- The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Alexandra MacLean, M.D.
Alexandra MacLean, M.D.
Chief Executive Officer
(Principal Executive Officer)
March 30, 2026

Exhibit 32.2

Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350,
As Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

I, David Jin, Interim Chief Financial Officer of Avenue Therapeutics, Inc. (the "Company"), in compliance with 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, hereby certify that, to the best of my knowledge, the Company's Annual Report on Form 10-K for the period ended December 31, 2025 (the "Report") filed with the Securities and Exchange Commission:

- Fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

- The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ David Jin
David Jin
Interim Chief Financial Officer
(Principal Financial Officer)
March 30, 2026